

# **2006 IEEE 63rd Vehicular Technology Conference**

**Melbourne, Australia**

**7 - 10 May 2006**

**Volume 1 of 6**



**IEEE Catalog Number:**

**06CH37718**

**ISBN:**

**0-7803-9391-0**

---

## FUTURE WIRELESS PHY/MAC 1

<b>Minimum Energy Cooperative Path Routing in Wireless Networks: An Integer Programming Formulation</b> .....	1
<i>Fulu Li, Andrew Lippman and Kui Wu</i>	
<b>A New Power-Saving Mechanism for WLAN Broadcast/Multicast Services</b> .....	7
<i>Hyu-Dae Kim and Dong-Ho Cho</i>	
<b>Adaptive MBER Space-Time DFE Assisted Multiuser Detection for SDMA Systems</b> .....	12
<i>S. Chen, A. Livingstone and L. Hanzo</i>	
<b>Iterative Soft Interference Cancellation Aided Minimum Bit Error Rate Uplink Receiver Beamforming</b> .....	17
<i>S. Tan, L. Xu, S. Chen and L. Hanzo</i>	
<b>Serially Concatenated Luby Transform Coding and Bit-Interleaved Coded Modulation Using Iterative Decoding for the Wireless Internet</b> .....	22
<i>R. Y. S. Tee, T. D. Nguyen, L. L. Yang and L. Hanzo</i>	

---

## COOPERATIVE NETWORKS' INTEGRATION/INTERWORKING

<b>Coexistence and Interworking of IEEE 802.16 and IEEE 802.11(e)</b> .....	27
<i>Lars Berlemann, Christian Hoymann, Guido R. Hiertz and Stefan Mangold</i>	
<b>System Interoperability Solution - Direct Conversion from RF to Baseband Radio Systems</b> .....	32
<i>Oleg Panfilov, Jae Jung, Ron Hickling, Tony Turgeon and Michael Yagi</i>	
<b>An Alternative Architecture for WLAN/GPRS Integration</b> .....	37
<i>Sibaram Khara, Iti Saha Mishra and Debashis Saha</i>	
<b>WINNER - Towards Ubiquitous Wireless Access</b> .....	42
<i>Adam Pollard, Jörn von Häfen, Martin Döttling, Daniel Schultz, Ralf Pabst and Ernesto Zimmerman</i>	
<b>Towards Service Continuity in Emerging Heterogeneous Mobile Networks</b> .....	47
<i>Sandro Grech, Henry Haverinen and Vijay Devarapalli</i>	

---

## RECONFIGURABILITY IN FUTURE SYSTEMS

<b>Resource Auctioning Mechanisms in Heterogeneous Wireless Access Networks</b> .....	52
<i>O. Sallent, J. Pérez-Romero, R. Agustí, L. Giupponi, C. Kloeck, I. Martoyo, S. Klett and J. Luo</i>	
<b>Business Models of End-to-End Reconfigurable Systems</b> .....	57
<i>Didier Bourse, Karim El-Khazen, Al Lee and Dragan Boscovic</i>	
<b>Equipment Management Strategies in Reconfigurable Networks</b> .....	62
<i>V. Stavroulaki, A. Katidiotis, D. Petromanolakis and P. Demestichas</i>	
<b>Common Pilot Channel for Network Selection</b> .....	67
<i>Paul Houzé, Sana Ben Jemaa and Pascal Cordier</i>	

---

## PERFORMANCE EVALUATION FOR FUTURE WIRELESS SYSTEMS

<b>Idle Period Shortening for TDD Communications in Large Cells</b> .....	72
<i>David Mottier and Loïc Brunel</i>	
<b>Frequency-Domain Residual Interference Cancellation in Cyclic Prefix Assisted Single-carrier Communications</b> .....	77
<i>Li Wei, Chen Ming, Shixing Cheng and Haifeng Wang</i>	
<b>Layer-2 Relays in Cellular Mobile Radio Networks</b> .....	81
<i>Bernhard H. Walke, Harianto Wijaya and Daniel C. Schultz</i>	
<b>Commitment-Aware Reputation System for the Digital Marketplace</b> .....	86
<i>Alisdair McDiarmid and James Irvine</i>	
<b>Radio Resource Allocation in Two-Hop Cellular Relaying Network</b> .....	91
<i>Tao Liu, Mengtian Rong, Ping Li, Dan Yu, Yisheng Xue and Egon Schulz</i>	
<b>OS-Multicast: On-Demand Situation-Aware Multicasting in Disruption Tolerant Networks</b> .....	96
<i>Qing Ye, Liang Cheng, Mooi Choo Chuah and Brian D. Davison</i>	

---

## FUTURE WIRELESS QOS

<b>Supporting VHO by a Self-Organizing Multidimensional P2P Overlay</b> .....	101
<i>Simon Oechsner, Tobias Hofffeld, Kurt Tutschku and Frank-Uwe Andersen</i>	
<b>Adaptive Application Mechanisms in Wireless LAN Network</b> .....	106
<i>See Leng Ng, Simon Hoh, Andy Low, Devinder Singh, Fang Liang Lim and Khong Neng Choong</i>	
<b>Dynamic Load Balancing Based on Sojourn Time in Multitier Cellular Systems</b> .....	111
<i>Guoqin Ning, Guangxi Zhu, Qingxia Li and Renyong Wu</i>	
<b>Iterative Water-Filling for Load-Balancing in Wireless LAN or Microcellular Networks</b> .....	117
<i>Jeremy K. Chen, Theodore S. Rappaport and Gustavo de Veciana</i>	

<b>On the Feedback Transfer Effort for Rate-Adaptive Multiuser Systems</b> .....	122
<i>Anthony E. Ekpenyong and Yih-Fang Huang</i>	

---

## FUTURE WIRELESS POSTERS

<b>Higher Order Modulations and GSM/EDGE Radio Access Network Evolution</b> .....	127
<i>David Navratil</i>	
<b>Uplink Performance Analysis for a Relay Based Cellular System</b> .....	132
<i>D. R. Basgeet and Y. C. Chow</i>	
<b>The 3G Long-Term Evolution - Radio Interface Concepts and Performance Evaluation</b> .....	137
<i>Erik Dahlman, Hannes Ekström, Anders Furuskär, Ylva Jading, Jonas Karlsson, Magnus Lundevall and Stefan Parkvall</i>	
<b>Adaptive MIMO OFDMA for Future Generation Cellular Systems in a Realistic Outdoor Environment</b> .....	142
<i>Congzheng Han, Angela Doufexi, Simon Armour, Kah Heng Ng and Joe McGeehan</i>	
<b>Application of Functional Unit Networks to Next Generation Radio Networks</b> .....	147
<i>Marc Schinnenburg, Fabian Debus and Ralf Pabst</i>	
<b>Load Balancing Oriented Spectrum Management for UMTS Networks Operating in Adaptive B3G Environments</b> .....	152
<i>K. Tsagkaris, G. Dimitrakopoulos and P. Demestichas</i>	
<b>Performance Comparison Between Fast Sector Selection and Simultaneous Transmission with Soft-Combining for Intra-Node B Macro Diversity in Downlink OFDM Radio Access</b> .....	157
<i>Akihito Morimoto, Kenichi Higuchi and Mamoru Sawahashi</i>	
<b>Sharing your Urban Residential WiFi (UR-WiFi)</b> .....	162
<i>Santosh Kawade, Jan-Willem Van Bloem, V. S. Abhayawardhana and D. Wisely</i>	
<b>Switched Multi-Radio Transmission Diversity for Non-Collocated Radio Accesses</b> .....	167
<i>H. Reza Karimi, Konstantinos Dimou, Georgios P. Koudouridis and Peter Karlsson</i>	
<b>Multi-Mode Access System with Anchor Layer 2/3 Protocol for Beyond 3G Wireless Networks</b> .....	172
<i>Mo-Han Fong, T. Aaron Gulliver and Vijay K. Bhargava</i>	
<b>A Study on Common-Control Channel Construction for Sub-Carrier Selecting MC-CDMA Systems</b> .....	177
<i>Atsushi Nagate and Teruya Fujii</i>	
<b>On the Theoretical Analysis of Optimal Cellular Systems Design with Multi-User Detection in Slow Flat Fading Channel - Uplink Analysis</b> .....	182
<i>C. Y. Sin and Vincent K. N. Lau</i>	
<b>Store-and-Forward Performance in a DTN</b> .....	187
<i>Mooi-Choo Chuah, Peng Yang, Brian D. Davison and Liang Cheng</i>	
<b>Implementation of an Improved Clock Frequency Offset Compensator for 4G OFDM System at ETRI</b> .....	192
<i>Dae Soon Cho and Hyeong-Jun Park</i>	
<b>Functional Architecture of End-to-End Reconfigurable Systems</b> .....	196
<i>Klaus Moessner, Jesse Luo, Eiman Mohyeldin, David Grandblaise, Clemens Kloeck, Ihan Martoyo, Oriol Sallent, P. Demestichas, G. Dimitrakopoulos, K. Tsagkaris and N. Olaziregi</i>	

---

## FUTURE WIRELESS MIMO/OFDM SYSTEMS ANALYSIS

<b>Intra-Node B Orthogonal Pilot Channel Structure for OFDM Radio Access in Evolved UTRA Downlink</b> .....	201
<i>Yoshihisa Kishiyama, Kenichi Higuchi and Mamoru Sawahashi</i>	
<b>Optimum Resource Block Bandwidth for Frequency Domain Channel-Dependent Scheduling in Evolved UTRA Downlink OFDM Radio Access</b> .....	206
<i>Satoshi Nagata, Yoshiaki Ofuji, Kenichi Higuchi and Mamoru Sawahashi</i>	
<b>Adaptive Pilot-Embedded Data-Bearing Approach Channel Estimation in Space-Frequency Coded MIMO-OFDM Systems</b> .....	211
<i>Chaiyod Pirak, Z. Jane Wang, K. J. Ray Liu and Somchai Jitapunkul</i>	
<b>Performance of an Adaptive Multiuser OFDM Uplink with Carrier Frequency Offsets</b> .....	216
<i>Wei Wang, Tony Ottosson and Tommy Svensson</i>	
<b>Iterative Joint Channel Estimation and Symbol Detection for Multi-User MIMO OFDM</b> .....	221
<i>M. Jiang, J. Akhtman, F. Guo and L. Hanzo</i>	
<b>Semi-Blind Channel Estimation for OFDM Systems</b> .....	226
<i>Weiwei Yang, Yueming Cai and Youyun Xun</i>	

---

## FUTURE WIRELESS PHY/MAC 2

<b>Coverage Study for VoIP Over Enhanced Uplink</b> .....	231
<i>Fan Rui, Fredrik Persson, Mats Nordberg, Stefan Wänstedt, Miao Qingyu and Gu Xinyu</i>	
<b>New Pulse Shapes for CPM Signals</b> .....	236
<i>Enis Doyuran and Yalcin Tanik</i>	
<b>A Novel Adaptive SR-SW-ARQ/FEC Scheme for an Ultra Low-Latency Mobile Network</b> .....	241
<i>Xiaoqiu Wang, Satoshi Konishi, Takeshi Kitahara and Hajime Nakamura</i>	
<b>Integration of Spatial Processing in the WINNER B3G Air Interface Design</b> .....	246
<i>Martin Döttling, Mikael Sternad, Göran Klang, Jörn von Häfen and Magnus Olsson</i>	
<b>Multiband Frequency Hopping for High Data-Rate Communications with Adaptive Use of Spectrum</b> .....	251
<i>Philip J. Vigneron and Colin Brown</i>	

---

## PERFORMANCE OF CDMA NETWORKS

<b>Optimal Allocation of Reverse Link Resources in a Multi-Carrier CDMA Network</b> .....	256
<i>Patrick Hosein</i>	
<b>Evolution of Policy Control and Charging (PCC) Architecture for 3GPP Evolved System Architecture</b> .....	259
<i>Victor Y. H. Kueh and Mick Wilson</i>	
<b>Column-Pair Scrambled Chip-Interleaved DS-CDMA for Asynchronous Uplink</b> .....	264
<i>Tetsuhiko Miyatani</i>	
<b>Performance and Analysis of Pre-Filtering Techniques for MISO Downlink TDD MC-CDMA Systems</b> .....	269
<i>Adão Silva and Atilio Gameiro</i>	
<b>Performance of MMSE Multiuser Detection in Cellular DS-CDMA Systems Using Distributed Antennas</b> .....	274
<i>Lie-Liang Yang</i>	

---

## AD-HOC NETWORKS 1: MAC PROTOCOLS

<b>Proposition of a Full Deterministic Medium Access Method for Wireless Network in a Robotic Application</b> .....	279
<i>Adrien van den Bossche, Thierry Val and Eric Campo</i>	
<b>Jointly Optimal Congestion and Medium Access Control in Ad Hoc Wireless Networks</b> .....	284
<i>Jang-Won Lee, Mung Chiang and A. Robert Calderbank</i>	
<b>Ripple: A Distributed Medium Access Protocol for Multi-Hop Wireless Mesh Networks</b> .....	289
<i>Ray-Guang Cheng, Cun-Yi Wang and Li-Hung Liao</i>	
<b>TA-MAC: Task Aware MAC Protocol for Wireless Sensor Networks</b> .....	294
<i>Sangheon Park, Jaeyoung Choi, Taekyoung Kwon and Yanghee Choi</i>	
<b>A Location and Mobility Aware Medium Access Control Protocol for Directional Antenna-Based Mobile Ad Hoc Networks</b> .....	299
<i>Kai-Ten Feng and Chih-Ti Lu</i>	
<b>Intelligent Router-Assisted Power Saving Medium Access Control for Mobile Ad Hoc Networks</b> .....	304
<i>Kai-Ten Feng and Kuan-Hung Chou</i>	

---

## SCHEDULING & RESOURCE ALLOCATION

<b>Cross-layer Design of Packet Scheduling and Resource Allocation in OFDMA Wireless Multimedia Networks</b> .....	309
<i>Sang Soo Jeong, Dong Geun Jeong and Wha Sook Jeon</i>	
<b>Fairness Based Resource Allocation for Multi-User MIMO-OFDM Systems</b> .....	314
<i>P. D. Morris and C. R. N. Athaudage</i>	
<b>Resource Allocation in OFDM Based Multihop Wireless Networks</b> .....	319
<i>Jing Shi, Guanding Yu, Zhaoyang Zhang and Peiliang Qiu</i>	
<b>Advanced Resource Reservation Using PAR-SIP for Real-Time Multimedia Communication</b> .....	324
<i>Wooseong Kim and Hongseok Jeon</i>	
<b>Scheduling Approach for MIMO with Tomlinson-Harashima Precoding</b> .....	329
<i>Battal Özdemir and Özgür Gürbüz</i>	
<b>Frequency Domain Channel-Dependent Scheduling Employing an Adaptive Transmission Bandwidth for Pilot Channel in Uplink Single-Carrier-FDMA Radio Access</b> .....	334
<i>Yoshiaki Ofuji, Kenichi Higuchi and Mamoru Sawahashi</i>	

---

## SENSOR NETWORKS 1

<b>Impact of Local Decision Rules in Distributed Sensor Networks</b> .....	339
<i>Nithya Gnanapandithan and Balasubramaniam Natarajan</i>	
<b>Hybrid Approach for Localization in Anisotropic Sensor Networks</b> .....	344
<i>King-Yip Cheng, King-Shan Lui and Vincent Tam</i>	
<b>A Range-Free Localization Algorithm for Wireless Sensor Networks</b> .....	349
<i>Qiqian Huang and S. Selvakennedy</i>	
<b>Method of Reducing Search Area for Localization in Sensor Networks</b> .....	354
<i>Junichi Shirahama, Tomoaki Ohtsuki and Toshinobu Kaneko</i>	
<b>On the Practical Issues in Hop Count Localization of Sensors in a Multihop Network</b> .....	358
<i>Eddie B. S. Tan, J. G. Lim, Winston K. G. Seah and S. V. Rao</i>	

---

## TRAFFIC MANAGEMENT 1

<b>A Novel Framework for Robust WCDMA Planning Under Changing Spatial Traffic Distributions</b> .....	363
<i>J. Pérez-Romero, O. Sallent and R. Agustí</i>	
<b>Load Sharing in Heterogeneous Wireless Systems Using Dynamic Load Measures</b> .....	368
<i>Keunyoung Kim, Youngnam Han and Jung-Ryun Lee</i>	
<b>Active Queue Management in EGPRS</b> .....	373
<i>Renaud Cuny and Jani Lakkakorpi</i>	
<b>On the Influence of User Behaviour and Admission Control on System Performance in HS-DSCH</b> .....	378
<i>Mats Folke and Ulf Bodin</i>	
<b>Two-Level Fractional Guard Channels for Priority Access in Cellular Systems</b> .....	383
<i>David Tung Chong Wong, Jon W. Mark and Kee Chaing Chua</i>	

---

**MOBILE NETWORKS POSTERS 1**

<b>An Evolved 3GPP QoS Concept</b> .....	388
<i>Reiner Ludwig, Hannes Ekström, Per Willars and Niklas Lundin</i>	
<b>A Practical Mechanism for Vertical Handoff in WLAN/3G Integrated Networks</b> .....	393
<i>Yu-Ching Hsu and Pai-Feng Tsai</i>	
<b>Increasing Forward Link Performance of 1xEV-DO Using Early Terminated Channel Quality Information</b> .....	397
<i>Patrick Hosein and Rath Vannithamby</i>	
<b>Optimal Traffic-to-Pilot Power Ratio in CDMA Uplink</b> .....	400
<i>Yi Zhang, Jian Gu, Dacheng Yang and Zhen Liu</i>	
<b>Channel State Dependent Packet Discard Policy for 3G Networks</b> .....	405
<i>Ching-Wan Yuen and On-Ching Yue</i>	
<b>The Effect of F-DPCH on VoIP Over HSDPA Capacity</b> .....	410
<i>Stefan Wänstedt, Mårten Ericson, László Hévízi, Jonas Pettersson and József Barta</i>	
<b>Power Headroom Measurements for E-TFC Elimination/Selection in HSUPA</b> .....	415
<i>Tero Henttonen and Tao Chen</i>	
<b>Modelling PTT Packet Delay in the GPRS/GSM Uplink</b> .....	420
<i>Rebecca Y. Wang, Moshe Zukerman and Richard J. Harris</i>	
<b>When Do We Need Rate Control for Dedicated Channels in UMTS?</b> .....	425
<i>Tobias Hoßfeld, Andreas Mäder and Dirk Staehle</i>	
<b>An Energy-Efficient Contention-Based MAC Protocol for Wireless Ad Hoc Networks</b> .....	430
<i>Kamrok Lee, Jae Young Choi, Wook Hyun Kwon and Hong Seong Park</i>	
<b>Adaptive Random Access with Beam-Forming in 4G Mobile Networks</b> .....	435
<i>M. Lott</i>	
<b>Relaying and Routing in Wireless Networks: A Throughput Comparison</b> .....	440
<i>Sedat Gormus, Dritan Kaleshi, Joe McGeehan and Alistair Munro</i>	
<b>Fundamental Analysis of Two-Layered Scheduling Algorithm for a Wireless Packet System</b> .....	446
<i>Sumaru Niida, Takashi Inoue and Yoshio Takeuchi</i>	
<b>Uplink Capacity of VoIP on HSUPA</b> .....	451
<i>Tao Chen, Markku Kuusela and Esa Malkamaki</i>	

---

**CDMA & 3G NETWORKS 1**

<b>Overload Control of Best-Effort Traffic in the UTRAN Transport Network</b> .....	456
<i>Mats Sågfors, Vesa Virkki and Tarmo Kuningas</i>	
<b>Low Complex Audio Encoding for Mobile Multimedia</b> .....	461
<i>Jari Mäkinen, Ari Lakaniemi and Pasi Ojala</i>	
<b>On the Impact of Repeaters Deployment on WCDMA Networks Planning</b> .....	466
<i>M. Garcia-Lozano, L. Alonso, F. Casadevall, S. Ruiz and L. M. Correia</i>	
<b>A Novel Algorithm for Radio Access Technology Selection in Heterogeneous B3G networks</b> .....	471
<i>J. Pérez-Romero, O. Sallent, R. Agustí, L. Wang and H. Aghvami</i>	
<b>Network Performance of Node-B Switched Beamforming and Dual Antenna User Equipment in WCDMA</b> .....	476
<i>Mangesh A. Ingale, Luis Guilherme U. Garcia, Per-Henrik Michaelsen, Klaus I. Pedersen and Preben E. Mogensen</i>	

---

**HANDOVER 1**

<b>An Approach for Optimal Hierarchical Mobility Management Network Architecture</b> .....	481
<i>Iiti Saha Misra, Mohuya Chakraborty, Debashish Saha and Amitava Mukherjee</i>	
<b>An Overlay Network Architecture for MPLS-Based Micro-Mobility with Label Stack Support</b> .....	486
<i>Chun-Hsin Wang and Chun-An Chen</i>	
<b>Performance Evaluation of L2 Handover Mechanisms for Inter-Radio Access Networks</b> .....	491
<i>Nicolas Dailly, Philippe Martins and Philippe Godlewski</i>	
<b>Multicast Performance Improvement Strategies Based on Autonomous Handover in Wireless Cellular Systems</b> .....	496
<i>Taesoo Kwon, Sunghyun Cho, Sangboh Yun and Dong-Ho Cho</i>	
<b>An Access Point Coordination System for Improved VoIP/WLAN Handover Performance</b> .....	501
<i>Sai Kit Chui and On-Ching Yue</i>	
<b>Performance Evaluation of WCDMA-to-CDMA2000 Handover</b> .....	506
<i>Seong-Jin Lee, Jae-Hyun Kim, Seong Keun Oh, Ki-Bum Kwon, Won-Ik Kim and Pyeong-Jung Song</i>	

---

**AD-HOC NETWORKS 2**

<b>Neighbor Discovery with Dynamic Spectrum Access in Adhoc Networks</b> .....	512
<i>Krishna Balachandran and Joseph H. Kang</i>	
<b>Towards Providing Adaptive Quality of Service in Mobile Ad-Hoc Networks</b> .....	518
<i>Ronan de Renesse, Vasilis Friderikos and Hamid Aghvami</i>	
<b>CAT: Contention Aware Transport Protocol for IEEE 802.11 MANETs</b> .....	523
<i>Kang Yong Lee, Seong-Soon Joo and Jeong-Dong Ryoo</i>	
<b>Analysis of Path Characteristics and Transport Protocol Design in Vehicular Ad Hoc Networks</b> .....	528
<i>Ralf Schmitz, Alain Leiggenger, Andreas Festag, Lars Eggert and Wolfgang Effelsberg</i>	

<b>A Collision Free Multiple Access Scheme Based on Sequential Confirmation for Multicast Services in Mobile Ad Hoc Networks</b> .....	533
<i>Ki-Ho Lee and Dong-Ho Cho</i>	

---

## NETWORK CAPACITY

<b>Effects of Simultaneous Circuit and Packet Switched Voice Traffic on Total Capacity</b> .....	538
<i>Mårten Ericson, Stefan Wånsiedt and Jonas Pettersson</i>	
<b>Analysis of Capacity Improvements in Multi-Radio Wireless Mesh Networks</b> .....	543
<i>Bassam Aoun, Raouf Boutaba and Gary Kenward</i>	
<b>Uplink Capacity Maximization Based on Random Access Channel (RACH) Parameters in WCDMA</b> .....	548
<i>Sangbum Kim, Youngwan So, Daehyoung Hong, Joungcheol Kim, Soonjoo Moon, Kyonglak Lee and Sehyun Oh</i>	
<b>Capacity Increase in GSM Networks Using Source-Adaptive AMR</b> .....	553
<i>André Noll Barreto and Riku Pirhonen</i>	
<b>On Modelling Spatial Traffic and Service Non-Uniformities in WCDMA Reverse Link</b> .....	558
<i>F. Adelantado, O. Sallent and J. Pérez-Romero</i>	

---

## SENSOR NETWORKS 2

<b>Aggregation Time Control Algorithm for Time Constrained Data Delivery in Wireless Sensor Networks</b> .....	563
<i>Jae Young Choi, Jong Wook Lee, Kamrok Lee, Sunghyun Choi, Wook Hyun Kwon and Hong Seong Park</i>	
<b>A Novel Time Synchronization Scheme in Wireless Sensor Networks</b> .....	568
<i>Liming He and Geng-Sheng Kuo</i>	
<b>Sensor Scheduling for Target Tracking Using Particle Swarm Optimization</b> .....	573
<i>Suhinthan Maheswararajah and Saman Halgamuge</i>	
<b>Cooperative Diversity with Disconnection Constraints and Sleep Discipline for Power Control in Wireless Sensor Networks</b> .....	578
<i>C. Fischione, A. Bonivento, K. H. Johansson and A. Sangiovanni-Vincentelli</i>	
<b>Routing Protocol of Sustainable Sensor Networks with High Exchangeability of Nodes</b> .....	583
<i>Yuichi Yuasa, Masaki Bandai and Takashi Watanabe</i>	
<b>Bi-Directional Amplification of Throughput in a Wireless Multi-Hop Network</b> .....	588
<i>Petar Popovski and Hiroyuki Yomo</i>	

---

## LOCATION & MOBILITY 1

<b>A Novel Location Algorithm Based on Dynamic Compensation Using Linear Location Prediction in NLOS Situations</b> .....	594
<i>Lei Mu, Geng-Sheng Kuo and Ningning Tao</i>	
<b>A Proposal of Location Estimation with Maximum Likelihood Function Using Joint PDF of Received Signals and Prior Measured Signals</b> .....	599
<i>Kana Azuma, Kumiko Matsumoto and Takeshi Hattori</i>	
<b>Enhanced Location Estimation with the Virtual Base Stations in Wireless Location Systems</b> .....	603
<i>Chao-Lin Chen and Kai-Ten Feng</i>	
<b>Dynamic Planning of Personalized Location Areas for Future PCS Networks with a Simulated Annealing Algorithm</b> .....	608
<i>Jun Zheng, Emma Regentova and Radhika Varadarajan</i>	
<b>Particle Filters and Position Tracking in Wi-Fi Networks</b> .....	613
<i>Zawar Shah and Robert A. Malaney</i>	
<b>An Improved Location Tracking Algorithm with Velocity Estimation in Cellular Radio Networks</b> .....	618
<i>Jemin Lee, Hyungjoon Song, Sungmok Oh and Daesik Hong</i>	

---

## MOBILE NETWORKS POSTERS 2

<b>LAMOR: Lifetime-Aware Multipath Optimized Routing Algorithm for Video Transmission Over Ad Hoc Networks</b> .....	623
<i>Liansheng Tan, Ling Xie, King-Tim Ko, Ming Lei and Moshe Zukerman</i>	
<b>M3RP: Multi-Rate/Multi-Range Multicast Routing Protocol for Mobile Ad Hoc Networks</b> .....	628
<i>Jenhui Chen, Jhenjhong Guo and Chih-Chieh Wang</i>	
<b>Power Saving with p-Persistent Sleep Decision for Ubiquitous Mobile Communications</b> .....	633
<i>Ji Wun Lee, Wha Sook Jeon and Dong Geun Jeong</i>	
<b>Geometry-Driven Scheme for Geocast Routing in Mobile Ad Hoc Networks</b> .....	638
<i>Sung-Hee Lee and Young-Bae Ko</i>	
<b>A Location-Aware Resource Reservation Algorithm with User Class Differentiation in WCDMA</b> .....	643
<i>J. Sánchez-González, J. Pérez-Romero and O. Sallent</i>	
<b>Infrastructure Cost Benefits of Ambient Networks Multi-Radio Access</b> .....	648
<i>Mikael Prytz, Peter Karlsson, Catarina Cedervall, Aurelian Bria and Ingo Karla</i>	
<b>A New Solution to Estimate the Available Bandwidth in MANETs</b> .....	653
<i>Vinh Dien Hoang, Zhenhai Shao and Masayuki Fujise</i>	
<b>Induced Cooperative Multi-User Diversity Relaying for Multi-Hop Cellular Networks</b> .....	658
<i>Keivan Navaie and Halim Yanikomeroglu</i>	
<b>Experimental Results on Indoor Localization Techniques through Wireless Sensors Network</b> .....	663
<i>T. Pavani, G. Costa, M. Mazzotti, A. Conti and D. Dardari</i>	

<b>Throughput Evaluation of ARQ Scheme for Multi-Route Coding in Wireless Multi-Hop Networks</b> .....	668
<i>Hiraku Okada, Tadahiro Wada, Kouji Ohuchi, Masato Saito, Takaya Yamazato and Masaaki Katayama</i>	
<b>Multi-Ring Cyclic Scheduling for Spatial-TDMA Energy-Saving MAC Protocol in MANET</b> .....	673
<i>Wei-Chih Harry Lin and Shuoh-Ren Tsai</i>	
<b>A Radio-Link Adaptive Routing Protocol for Mobile Ad Hoc Networks</b> .....	678
<i>Jenn-Hwan Tarng, Bing-Wen Chuang and Yi-Luen Wen</i>	

---

## CDMA & 3G NETWORKS 2

<b>Enhanced Slotted Mode Operation Considering Call Inter-Arrival Time Distribution in cdma2000 Networks</b> .....	683
<i>Yuchul Kim, Jungsoo Jung, Beomsik Bae, Daegyun Kim and Younsun Kim</i>	
<b>A Novel Network Layout for CDMA Cellular Networks with Optimal Base Station Antenna Height and Downtilt</b> .....	688
<i>Jarkko Ikonen, Balázs P. Tuzson and Jukka Lempiäinen</i>	
<b>Analytical Approximation of Other-Cell Interference in the Uplink of CDMA Cellular Systems</b> .....	693
<i>Tuo Liu and David Everitt</i>	
<b>Performance Investigation of Secondary Scrambling Codes in WCDMA Systems</b> .....	698
<i>Hu Rong and Kimmo Hiltunen</i>	
<b>WCDMA 6-Sector Deployment - Case Study of a Real Installed UMTS-FDD Network</b> .....	703
<i>Bo Hagerman, Davide Imbeni, Jozsef Barta, Adam Pollard, Rainer Wohlmuth and Peter Cosimini</i>	

---

## NETWORK PLANNING & PERFORMANCE

<b>Using a New Heuristic Algorithm to Solve Channel Assignment Problems in Cellular Radio Networks</b> .....	708
<i>Seyed Alireza Ghasempour Shirazi</i>	
<b>On-Demand Channel Assignment Using Channel Segregation for Uplink DS-CDMA Multi-Hop Virtual Cellular Network</b> .....	713
<i>Lalla Soundous El Alami, Eisuke Kudoh and Fumiya Adachi</i>	
<b>Initial Performance Evaluation on TD-SCDMA Long Term Evolution System</b> .....	718
<i>Guangyi Liu, Jianchi Zhu, Feng Jiang, Bei Zhou, Ying Wang and Ping Zhang</i>	
<b>Cell Region Based Algorithm for 1xEV-DO Reverse-Link Rate Control</b> .....	723
<i>HyeJeong Lee and Dong-Ho Cho</i>	
<b>Joint Radio Resource Management over Very Tightly Coupled Heterogeneous Networks for Multimode Reconfigurable Terminals</b> .....	727
<i>Abdul Hasib and Abraham O. Fajoluwo</i>	

---

## MOBILE APPLICATIONS & SECURITY POSTERS; TRANSPORTATION SYSTEMS POSTERS

<b>A RLS Based UWB Localization Scheme for Wireless Networks</b> .....	732
<i>Ananth Subramanian</i>	
<b>User's Request Responsible Data Broadcasting Service for T-DMB/CDMA Converged Environment</b> .....	737
<i>Byungjun Bae, Chunghyun Ahn, Hyocheol Jang and Jongdeok Kim</i>	
<b>Design of a Joint Defense System for Mobile Ad Hoc Networks</b> .....	742
<i>Huei-Wen Ferng and Chien-Liang Liu</i>	
<b>A Traveler Information Service Structure in Hybrid T-DMB and Cellular Communication Network</b> .....	747
<i>Sammo Cho, Youngho Jeong, Kim Geon, Kim Soon-Choul, Ahn Chung Hyun and Hyuckjae Lee</i>	
<b>A Mobile Hand Held Computing System for Out Patient Workflow in Hospital Environment</b> .....	751
<i>Suneetha Uppu, Doan B. Hoang and Tom Hintz</i>	
<b>RSVP Context Extraction in IP Mobility Environments</b> .....	756
<i>Chuda Liu, Depei Qian, Yi Liu, Yanping Li and Caiyuan Wang</i>	

---

## AD-HOC NETWORKS 3

<b>Word-of-Mouth in Radio Access Markets</b> .....	761
<i>Pietro Lungaro</i>	
<b>Dynamic Path Adaptation Routing Protocol for Mobile Ad Hoc Networks</b> .....	767
<i>Kwangil Lee and Tim S. Yao</i>	
<b>On the Distance Distributions of the Wireless Ad Hoc Networks</b> .....	772
<i>Chih-Cheng Tseng, Hsuan-Tsang Chen and Kwang-Cheng Chen</i>	
<b>Multi-Metric Gateway Discovery for MANET</b> .....	777
<i>Yi Fu, Kwang-Mien Chan, Kean-Soon Tan and Boon-Sain Yeo</i>	
<b>An Optimised Gateway Selection Mechanism for Wireless Ad Hoc Networks Connected to the Internet</b> .....	782
<i>Mona Ghassemian, Philipp Hofmann, Vasilis Friderikos, Christian Prehofer and A. Hamid Aghvami</i>	
<b>A Space-Time Based Approach to Solving the Gain Asymmetry in MIMO Ad Hoc Networks</b> .....	788
<i>Francesco Rossetto and Michele Zorzi</i>	

---

## MOBILE NETWORKS 1

<b>Wavelet Analysis for Velocity Characterization in Mobile Networks</b> .....	793
<i>S.-E. Elayoubi, A. Ben Hadj Alaya, E. Villebrun and B. Fourestié</i>	

<b>Database Correlation Using Bayes Filter for Mobile Terminal Localization in GSM Suburban Environments</b> .....	798
<i>Mohamed Khalaf-Allah and Kyandoghere Kyamakya</i>	
<b>Utility Based Optimal Layering and Adaptive Transmission for Video Multicasting Over Wireless Systems</b> .....	803
<i>Daiming Qu, Jing Shi and Guangxi Zhu</i>	
<b>A Deployment Model of an OFDM Based Broadband Wireless Access Network</b> .....	808
<i>Priya Kailasam, Yong Huat Chew and Boon Sain Yeo</i>	
<b>Self-Organised Beamforming and Opportunistic Scheduling in an OFDM-Based Cellular Network</b> .....	813
<i>Rainer Grünheid, Hermann Rohling, Karsten Brünninghaus and Uwe Schwark</i>	

---

## WIRELESS SECURITY

<b>A Secure Wireless LAN Access Technique for Home Network</b> .....	818
<i>Ju-A Lee, Jae-Hyun Kim, Jun-Hee Park and Kyung-Duk Moon</i>	
<b>Secure Pairing Architecture for Wireless Mobile Devices</b> .....	823
<i>Janne Lindqvist, Sanna Liimatainen and Tuomo Katajamäki</i>	
<b>Using Certificate-Based Binding Update Protocol to Hide the Movement of Mobile Nodes in MIPv6</b> .....	828
<i>Ying Qiu, Jianying Zhou, Feng Bao and Robert Deng</i>	
<b>An Efficient Scheme for Encrypted Data Aggregation on Sensor Networks</b> .....	831
<i>Tieyan Li, Yongdong Wu and Huafei Zhu</i>	
<b>Secure Electronic Voting for Mobile Communications</b> .....	836
<i>Xun Yi, Pietro Cerone and Yanchun Zhang</i>	
<b>Modeling the Spread of Worm Epidemics in Vehicular Ad Hoc Networks</b> .....	841
<i>Maziar Nekovee</i>	

---

## MOBILE NETWORKS 2

<b>Optimisation of a Multi-Code CDMA In-Building Communication System</b> .....	846
<i>Joseph K. L. Wong, Michael J. Neve and Kevin W. Sowerby</i>	
<b>Coded Bi-Directional Relaying</b> .....	851
<i>Peter Larsson, Niklas Johansson and Kai-Erik Sunell</i>	
<b>Correlated FEC Scheme for Transmission Reliability Over Burst Error Wireless Channels</b> .....	856
<i>Gang Shen and Erwu Liu</i>	
<b>Performance Analysis of Spatial Data Broadcast for Navigation Systems</b> .....	861
<i>Shou-Chih Lo</i>	
<b>Database Correlation Method for Multi-System Positioning</b> .....	866
<i>Paul Kemppi and Sami Nousiainen</i>	

---

## IP NETWORKS

<b>HarMoNy - HIP Mobile Networks</b> .....	871
<i>Stephen Herborn, Luke Haslett, Roksana Boreli and Aruna Seneviratne</i>	
<b>A Novel Version of Wireless TCP for Vehicular On-Board IP Networks</b> .....	876
<i>Bhaskar Sardar, Pankaj Chand and Debasish Saha</i>	
<b>Terminal-Centric Location Services for the IP Multimedia Subsystem</b> .....	881
<i>Joachim Fabini, Marco Happenhofer and Rudolf Pailer</i>	
<b>Fast and Reliable Route Discovery Protocol Considering Mobility in Multihop Cellular Networks</b> .....	886
<i>Hyun-Ho Choi and Dong-Ho Cho</i>	
<b>On Packet Aggregation Mechanisms for Improving VoIP Quality in Mesh Networks</b> .....	891
<i>Kyungtae Kim, Samrat Ganguly, Rauf Izmailov and Sangjin Hong</i>	
<b>Implementation of a Multihoming Agent for Mobile On-Board Communication</b> .....	896
<i>Jun Yao, Yi Duan, Jianyu Pan and Kun-Chan Lan</i>	

---

## AD-HOC NETWORKS 4: CAPACITY & ROUTING

<b>Distance-Weighted Throughput for Multi-Antenna Wireless Networks with Multi-User Links</b> .....	901
<i>Christian B. Peel, A. Lee Swindlehurst and Dirk Dahlhaus</i>	
<b>Analysis of Capacity for Spatial TDMA in Wireless Ad Hoc Networks with Variable Power and Rate Control</b> .....	906
<i>Oscar Somarriba</i>	
<b>Capacity Improvement of Wireless Ad Hoc Networks with Directional Antennae</b> .....	911
<i>Jialiang Zhang and Soung Chang Liew</i>	
<b>Improving Performance of On-Demand Routing Under Multipath Fading</b> .....	916
<i>Suhua Tang, Masahiro Watanabe, Naoto Kadowaki and Sadao Obana</i>	
<b>An Overlay Multicast Mechanism Using Single-Hop Clustering and Tree Division for Mobile Ad Hoc Networks</b> .....	921
<i>Younghwan Choi, Bongsoo Kim, Kwansoo Jung, Hochoong Cho and Sang-Ha Kim</i>	

---

## HANDOVER 2

<b>A Seamless Handoff Scheme for Mobile IP</b> .....	927
<i>Jinfang Zhou and Ni Sun</i>	



<b>Adaptive Handoff Using Distance Information</b> .....	932
<i>Huamin Zhu and Kyung-Sup Kwak</i>	
<b>Handover Latency Reduction on Host-Based Mobility in Multihomed Networks</b> .....	937
<i>Hiroyuki Koga, Katsuyoshi Iida, Hiroaki Haraguchi and Yuji Oie</i>	
<b>WCDMA Downlink Load Sharing with Dynamic Control of Soft Handover Parameters</b> .....	942
<i>Ridha Nasri, Zwi Altman, Hervé Dobreil and Zakaria Nouir</i>	
<b>Comparison Between Vertical Handoff Decision Algorithms for Heterogeneous Wireless Networks</b> .....	947
<i>Enrique Stevens-Navarro and Vincent W. S. Wong</i>	

---

### MOBILE NETWORKS POSTERS 3

<b>Comparison of User Mobility Pattern Prediction Algorithms to Increase Handover Trigger Accuracy</b> .....	952
<i>Stefan Michaelis and Christian Wietfeld</i>	
<b>Verification of Mobility-Based Soft Handover Algorithm Using WCDMA Measurements Data</b> .....	957
<i>Rong-Terng Juang, Hsin-Piao Lin, Ding-Bing Lin and Wei-Cheng Zeng</i>	
<b>A Dynamic Resource Reservation Scheme Designed for Improving Multicast Protocols in HMIPv6-Based Networks</b> .....	961
<i>Huei-Wen Ferng, Wen-Yan Kao, Jeng-Ji Huang and David Shiung</i>	
<b>A Fast Handoff Mechanism for IEEE 802.11 and IAPP Networks</b> .....	966
<i>Ping-Jung Huang, Yu-Chee Tseng and Kun-Cheng Tsai</i>	
<b>Preserving Streaming Video Quality in Mobile Wireless LAN Networks</b> .....	971
<i>Tom Van Leeuwen, Ingrid Moerman and Piet Demeester</i>	
<b>Cell Capacity of CDMA Networks Taking the Effect of Mobile Locations Into Consideration</b> .....	976
<i>Yong Huat Chew, Jiakai Tham and Boon Sain Yeo</i>	
<b>Comparison of Probabilistic Models Used for Diagnosis in Cellular Networks</b> .....	981
<i>Raquel Barco, Volker Wille, Luis Díez and Pedro Lázaro</i>	
<b>Impact of Heterogenous Wireless Link Characteristics on the Performance of IP-Based Group Communications</b> .....	986
<i>Jörn Seger and Christian Wietfeld</i>	
<b>On the Suitability of the Short Message Service for Emergency Warning Systems</b> .....	991
<i>Rastin Pries, Tobias Hoffeld and Phuoc Tran-Gia</i>	
<b>Cooperation Techniques and Architecture for Multi-Access Radio Resource Management</b> .....	996
<i>Zhiyong Feng and Ping Zhang</i>	
<b>Adaptive Beacon Control in a Heterogeneous System Environment</b> .....	1001
<i>Matthias Siebert, Daniel Bültmann and Eiman Mohyeldin</i>	
<b>Throughput of Wireless TCP Networks Using Reliable Radio Links</b> .....	1006
<i>Bruno Couto Costa Pinto and Jose Marcos Camara Brito</i>	
<b>Study the Traffic Difference of Online Games Between GPRS/EGPRS and ADSL Networks</b> .....	1011
<i>Yi Wu, Hui Huang and Dongmei Zhang</i>	
<b>A General Framework for Context Transfer in Mobile IP Networks</b> .....	1017
<i>Ha Duong, Arek Dadej and Steven Gordon</i>	

---

### SENSOR NETWORKS 3

<b>Simulated Annealing Based Wireless Sensor Network Localization with Flip Ambiguity Mitigation</b> .....	1022
<i>Anushiya A. Kannan, Guoqiang Mao and Branka Vucetic</i>	
<b>Enhanced Time-Sync Protocol for Embedded Sensor Networks</b> .....	1027
<i>Kee-Young Shin, Kang Yong Lee, Kwangyong Lee, Pyeong Soo Mah, Seungmin Park and Heung-Nam Kim</i>	
<b>Energy-Aware Distributed Topology Control for Coverage-Time Optimization in Clustering-Based Heterogeneous Sensor Networks</b> .....	1033
<i>Joongheon Kim, Jihoon Choi and Wonjun Lee</i>	
<b>Statistical Edge Detection with Distributed Sensors Under the Neyman-Pearson (NP) Optimality</b> .....	1038
<i>Pei-Kai Liao, Min-Kuan Chang and C.-C. Jay Kuo</i>	
<b>On the Sensitivity of Sensor Network Simulations</b> .....	1043
<i>C. J. Sreenan, S. Nawaz, T. D. Le and S. Jha</i>	
<b>Distributed Estimation in a Power Constrained Sensor Network</b> .....	1048
<i>Visvakumar Aravinthan, Sudharman K. Jayaweera and Kossai Al Tarazi</i>	

---

### LOCATION & MOBILITY 2

<b>Hybrid SADOA/TDOA Location Estimation Scheme for Wireless Communication Systems</b> .....	1053
<i>Rong-Terng Juang, Ding-Bing Lin and Hsin-Piao Lin</i>	
<b>Hybrid TDOA/AOA Indoor Positioning and Tracking Using Extended Kalman Filters</b> .....	1058
<i>Chin-Der Wann, Yi-Jing Yeh and Chih-Sheng Hsueh</i>	
<b>A Fuzzy Distance-Based Location Management Scheme for PCS Networks</b> .....	1063
<i>Yi-Hua Zhu and Victor C. M. Leung</i>	
<b>Location-Dependent Parameterization of a Random Direction Mobility Model</b> .....	1068
<i>Bernd Gloss, Michael Scharf and Daniel Neubauer</i>	
<b>Dynamic Point Forwarding Scheme for QoS-Aware Mobility in Future All-IP Wireless Networks</b> .....	1073
<i>Hui-Juan Yao and Geng-Sheng Kuo</i>	

<b>Positioning of Mobile Terminals Based on Feature Extraction from Channel Impulse Responses</b> .....	1078
<i>M. Layh, U. Reiser, D. Zimmermann and F. Landstorfer</i>	

---

## AD-HOC NETWORKS 5: ROUTING

<b>Energy Efficient Route Construction Scheme with Continuous and Discrete Power Control in Ad Hoc Sensor Networks</b> .....	1082
<i>Masaki Bandai, Satoshi Nakayama and Takashi Watanabe</i>	
<b>Power-Controlled Hybrid Multicast Routing Protocol for Mobile Ad Hoc Networks</b> .....	1087
<i>Wei-Hsiang Cheng, Chung-Yi Wen and Kai-Ten Feng</i>	
<b>A Novel Location-Fault-Tolerant Geographic Routing Scheme for Wireless Ad Hoc Networks</b> .....	1092
<i>Junlong Lin and Geng-Sheng Kuo</i>	
<b>Energy-Efficient Virtual Backbones for Reception-Aware MANET</b> .....	1097
<i>Joanne Lee and Bernard Mans</i>	
<b>A New Geographic Multipath Protocol for Ad Hoc Networks to Reduce the Route Coupling Phenomenon</b> .....	1102
<i>V. Loscri and S. Marano</i>	
<b>MANETs: Routing Overhead and Reliability</b> .....	1107
<i>Roy C. Timo and Leif W. Hanlen</i>	

---

## TRAFFIC MANAGEMENT 2

<b>Utilization of an Indoor DAS for Repeater Deployment in WCDMA</b> .....	1112
<i>Jakub Borkowski, Jarno Niemelä, Tero Isotalo, Panu Lähdekorpi and Jukka Lempiäinen</i>	
<b>Enhancement of Network Planning Tool Predictions through Measurements</b> .....	1117
<i>Zakaria Nouir, Berna Sayrac, Benoît Fourestié and Ridha Nasri</i>	
<b>An Onboard ATM Switching Fabric Based on Ant Algorithm with Blocking Avoidance</b> .....	1122
<i>Liping Xiao, Xuemai Gu, Gongliang Liu and Naitong Zhang</i>	
<b>Overload Control with Removal Algorithm for Real-Time Flows in Wireless Networks</b> .....	1127
<i>Eunhyun Kwon, Seog-Gyu Kim and Jaiyong Lee</i>	
<b>Synchronisation and Timing Groups for GSM Networks</b> .....	1132
<i>Maxim Gilits, Jackson Yin and Paul Kubik</i>	

---

## WIRELESS ACCESS POSTERS

<b>A MAC Protocol for Coexistence Between 20/40 MHz STAs for High Throughput WLAN</b> .....	1136
<i>Yoriko Utsunomiya, Tomoya Tandai, Tomoko Adachi and Masahiro Takagi</i>	
<b>Performance Analysis of Sleep Mode Operation in IEEE 802.16e Mobile Broadband Wireless Access Systems</b> .....	1141
<i>Kwanghun Han and Sunghyun Choi</i>	
<b>Analysis of Spatial Multiplexing for Cross-Layer Design of MIMO Ad Hoc Networks</b> .....	1146
<i>Marco Levorato, Stefano Tomasin, Paolo Casari and Michele Zorzi</i>	
<b>Performance Improvements with a P-Persistent Enhanced DCF for WLANs</b> .....	1151
<i>Jain-Shing Liu and Chun-Hung Richard Lin</i>	
<b>A Novel Resource Allocation Algorithm for Real-Time Services in Multiuser OFDM Systems</b> .....	1156
<i>Guanding Yu, ZhaoYang Zhang, Yan Chen, Jing Shi and Peiliang Qiu</i>	
<b>Performance Improvement of Chip Interleaved Scheme for MB-OFDM System for 480Mbps</b> .....	1161
<i>Xiaoming Peng, Khiam-Boon Png and Francois Chin</i>	
<b>Coverage in WLAN with Minimum Number of Access Points</b> .....	1166
<i>S. Kouhbor, J. Ugon, A. Rubinov, A. Kruger and M. Mammadov</i>	
<b>Toward Formal Verification of 802.11 MAC Protocols: A Case Study of Applying Petri-Nets to Modeling the 802.11 PCF</b> .....	1171
<i>Russell Haines, Alistair Munro and Gary Clemo</i>	
<b>Link Adaptation Algorithms Over IEEE802.11 WLANs in Collision Prone Channels</b> .....	1176
<i>Alessandro Bazzi, Marco Diolaiti and Gianni Pasolini</i>	
<b>IEEE 802.11 DCF Performance Evaluation Using One-Dimensional Discrete Time Chains</b> .....	1182
<i>Srikant Kuppa, Shun-Chen Niu and Ravi Prakash</i>	
<b>Packet Error Rate Analysis of IEEE 802.11b Under IEEE 802.15.4 Interference</b> .....	1186
<i>Dae Gil Yoon, Soo Young Shin, Wook Hyun Kwon and Hong Seong Park</i>	
<b>Design and Implementation of Robust Time/Frequency Offset Tracking Algorithm for MIMO-OFDM Receivers</b> .....	1191
<i>Il-Gu Lee, Heejung Yu, Eunyoung Choi, Jungbo Son and Sok-Kyu Lee</i>	

---

## IEEE 802.11 WIRELESS LANS

<b>SNMP-Based Approach to Load Distribution in IEEE 802.11 Networks</b> .....	1196
<i>Li-Hsing Yen and Tse-Tsung Yeh</i>	
<b>Optimal Channel Search Time for Handoff in the IEEE 802.11 WLANs</b> .....	1201
<i>Li-Chun Wang, Hung-Hsi Chen, Anderson Chen and Chung-Ju Chang</i>	
<b>Distributed Channel-Adaptive Fair Allocation for IEEE 802.11e WLAN</b> .....	1206
<i>Yow-Yiong Edwin Tan, Stephen McLaughlin and David I. Laurenson</i>	

<b>Non-Linear Optimization of IEEE802.11e Superframe Configuration</b> .....	1211
<i>Russell Haines, Justin Coon and Neil Fanning</i>	
<b>Rate Adaptive Reliable Multicast MAC Protocol for WLANs</b> .....	1216
<i>Anas Basalamah, Hiroki Sugimoto and Takuro Sato</i>	
<hr/>	
<b>IEEE 802.16 WIMAX</b>	
<b>Quality of Service Scheduling for 802.16 Broadband Wireless Access Systems</b> .....	1221
<i>Jonny Sun, Yanling Yao and Hongfei Zhu</i>	
<b>Considerations for VoIP Services in IEEE 802.16 Broadband Wireless Access Systems</b> .....	1226
<i>Seung-Eun Hong and Oh-Hyeong Kwon</i>	
<b>Performance Analysis of Scheduling Algorithms for VoIP Services in IEEE 802.16e Systems</b> .....	1231
<i>Howon Lee, Taesoo Kwon, Dong-Ho Cho, Geunhwi Lim and Yong Chang</i>	
<b>Hard Handoff Scheme Exploiting Uplink and Downlink Signals in IEEE 802.16e Systems</b> .....	1236
<i>Sunghyun Cho, Jonghyung Kwun, Chihyun Park, Jung-Hoon Cheon, Ok-Seon Lee and Kiho Kim</i>	
<b>Performance Analysis of the Real-Time Capabilities of Coordinated Centralized Scheduling in 802.16 Mesh Mode</b> .....	1241
<i>Christian Schwingsenschlgl, Volker Dastis, Parag S. Mogre, Matthias Hollick and Ralf Steinmetz</i>	
<hr/>	
<b>IEEE 802.11 ADHOC NETWORKS</b>	
<b>A QoS Scheme for Streaming Applications in 802.11b Ad Hoc Networks</b> .....	1246
<i>C. Taddia, A. Giovanardi and G. Mazzini</i>	
<b>A Randomized Power Management Protocol with Dynamic Listen Interval for Wireless Ad Hoc Networks</b> .....	1251
<i>Zi-Tsan Chou</i>	
<b>An Improved IEEE802.11 PSM Based on Server Vacation Models</b> .....	1256
<i>K. M. Lau and OnChing Yue</i>	
<b>Enhancing IEEE802.11 DCF Using Genetic Programming</b> .....	1261
<i>Tim Lewis, Neil Fanning and Gary Clemo</i>	
<b>A Non-Linear Dynamic Tuning of the Minimum Contention Window (CWmin) for Enhanced Service Differentiation in IEEE 802.11 Ad-Hoc Networks</b> .....	1266
<i>Lassaad Gannoune</i>	
<b>Impact of Multi-Antenna on the Performance of the Ad-Hoc WLAN in a Slow Rayleigh Fading Channel</b> .....	1272
<i>Vahid Pourahmadi, S. Hamidreza Jamali and Reza Safavi-Naieeni</i>	
<hr/>	
<b>WIRELESS LAN PERFORMANCE</b>	
<b>A Buffer Time Based Call Admission Control Algorithm for Real-Time Traffic in IEEE 802.11e WLAN</b> .....	1277
<i>Yuan-Hwai Shih and Ching-Yao Huang</i>	
<b>Bundled Virtual Circuit: A Proposed Cross Layer Design of Routing and Scheduling for QoS Services in MANETs</b> .....	1283
<i>Choon Lim Gwee, Yang Qin and Winston K. G. Seah</i>	
<b>EDCA Based Congestion Control for WLAN Mesh Networks</b> .....	1288
<i>Akira Yamada, Atsushi Fujiwara, L. Lily Yang and Bahareh Sadeghi</i>	
<b>Cross-Layer Enhancement for WLAN Systems Based on a Distributed Queuing MAC protocol</b> .....	1293
<i>Ch. V. Verikoukis, J. Alonso, E. Kartsakli, A. Cateura and L. Alonso</i>	
<b>Performance Analysis of IEEE 802.11e WLANs with Throughput and Delay Guarantees</b> .....	1298
<i>Jiang Zhu and Abraham O. Fapojuwo</i>	
<hr/>	
<b>BLUETOOTH/IEEE 802.15</b>	
<b>Improved Channel Classification and Scheduling for Non-Collaborative Bluetooth/WLAN Coexistence</b> .....	1303
<i>Qixiang Pang and Victor C. M. Leung</i>	
<b>IEEE 802.15.4 Simulation Module in Network Simulator GTNetS</b> .....	1308
<i>Liang Cheng, Xin Zhang and Anu G. Bourgeois</i>	
<b>ECAP: An Enhancement of the IEEE 802.15.3 MAC via Novel Scheduling Scheme</b> .....	1313
<i>Ji Eun Kim, Young Ae Jeon, Sangjae Lee and Sang Sung Choi</i>	
<b>An Application-Aware Delayed-ACK for Video Streaming Over IEEE 802.15.3 WPANs</b> .....	1318
<i>Liu Xingjie, Yu Wei, Cai Yu and Zhou Zucheng</i>	
<b>P-Frozen Contention Strategy (PFCS) for Solving Collision Chain Problem in IEEE 802.15.4 WPANs</b> .....	1323
<i>Shiann-Tsong Sheu and Yun-Yen Shih</i>	
<hr/>	
<b>OFDM WIRELESS ACCESS</b>	
<b>The Switch-Based Subcarrier Allocation Policies in Multi-Service OFDM Systems</b> .....	1328
<i>Heng-Yi Wu, Min-Kuan Chang and Chia-Chung Chang</i>	
<b>Design and FPGA Implementation of MIMO-OFDM based WLAN Systems</b> .....	1333
<i>Heejung Yu, Kyonghee Song, Kwhanghyun Ryu, Yunjoo Kim, Seungwook Min and Sok-Kyu Lee</i>	
<b>An Analysis on Uplink OFDMA Optimality</b> .....	1339
<i>Hongxiang Li and Hui Liu</i>	
<b>Two-Dimensional Iterative Sampling Frequency Offset Estimation for MB-OFDM System</b> .....	1344
<i>Khiam-Boon Png, Xiaoming Peng, Hongyi Fu and Francois Chin</i>	
<b>Asynchronous Multi-Carrier DS-CDMA with UCHT-Based Complex Spreading Sequences</b> .....	1349
<i>Zhenghui Gu, Shoulie Xie and Susanto Rahardja</i>	

---

**CODING/DECODING**

<b>Iterative Modified QRM-MLD Based on CRC Check for OFDM MIMO Multiplexing</b> .....	1353
<i>Koichi Adachi and Masao Nakagawa</i>	
<b>Practical Interleavers for Systematic Repeat-Accumulate Codes</b> .....	1358
<i>Sarah J. Johnson and Steven R. Weller</i>	
<b>Concatenated LDGM Codes with Reduced Decoder Complexity</b> .....	1363
<i>Joon-Sung Kim</i>	
<b>Improved Code Shortening for Block and Product Codes</b> .....	1367
<i>K. C. Lim and Yong Liang Guan</i>	
<b>Reduced-Complexity Convolutional Self-Doubly Orthogonal Codes for Efficient Iterative Decoding</b> .....	1372
<i>Christian Cardinal, David Haccoun and Yu-Cheng He</i>	
<b>A New Scheme to Reduce Complexity of APP Decoders Working on the Dual Code</b> .....	1377
<i>Sudharshan Srinivasan and Steven S. Pietrobon</i>	

---

**MIMO 1**

<b>Precoder Design for MIMO Systems with Transmit Antenna Correlations</b> .....	1382
<i>Winston W. L. Ho and Ying-Chang Liang</i>	
<b>Switching Between OSTBC and Spatial Multiplexing with Linear Receivers in Spatially Correlated MIMO Channels</b> .....	1387
<i>Antonio Forenza, Matthew R. McKay, Iain B. Collings and Robert W. Heath Jr.</i>	
<b>Multi-Mode Precoding for Correlated MIMO Channels with Minimum BER Selection Criterion</b> .....	1392
<i>Jinxia Cheng, Shidong Zhou and Yan Yao</i>	
<b>Transmit Precoding for the Multiple Antenna Broadcast Channel</b> .....	1396
<i>Manish Airy, Sandeep Bhadra, Robert W. Heath Jr. and Sanjay Shakkottai</i>	
<b>Receiver Structures for MIMO-SC/FDE Systems</b> .....	1401
<i>S. Reinhardt, T. Buzid and M. Huemer</i>	
<b>Performance of the EP-MBCJR Algorithm in Time Dispersive MIMO Office Environments</b> .....	1406
<i>C. M. Vithanage, C. Andrieu, R. J. Piechocki and J. P. Coon</i>	

---

**OFDM**

<b>Cancellation of ICI by Doppler Effect in OFDM Systems</b> .....	1411
<i>Kapseok Chang, Youngnam Han, Jeongseok Ha and Younghoon Kim</i>	
<b>Heuristic Algorithms to Adaptive Subcarrier-and-Bit Allocation in Multiclass Multiuser OFDM Systems</b> .....	1416
<i>Kainan Zhou and Yong Huat Chew</i>	
<b>On the Calculation of OFDM Error Performance with Phase Noise in AWGN and Fading Channels</b> .....	1421
<i>Himal A. Suraweera, Xiaolin Zhou and Jean Armstrong</i>	
<b>A Comparative Study of Two Receiver Schemes for Interleaved OFDMA Uplink</b> .....	1426
<i>Huan Su, Jianhua Zhang and Ping Zhang</i>	
<b>On the Correlation of Subcarriers in Grouped Linear Constellation Precoding OFDM Systems Over Frequency Selective Fading</b> .....	1431
<i>Xiaolong Zhu and Jinyin Xue</i>	

---

**ULTRA-WIDEBAND SYSTEMS 1**

<b>Impact of UWB Transmitted-Reference Modulation on Linear Equalization of Non-Linear ISI Channels</b> .....	1436
<i>J. Romme and K. Witrisal</i>	
<b>Analysis of NB BPSK in MB-OFDM UWB Interference and Fading</b> .....	1440
<i>A. Nasri, R. Schober and L. Lampe</i>	
<b>UWB Ranging and Crystal Offset</b> .....	1445
<i>Bin Zhen, Huan-Bang Li and Ryuji Kohno</i>	
<b>Dimension Diversity for the Enhancement of UWB Signal Detection</b> .....	1450
<i>S. H. Song and Q. T. Zhang</i>	
<b>Optimal Pulse Shaping for Pulse Position Modulation UWB Systems with Sparsity-Driven Signal Detection</b> .....	1455
<i>Wei Li and T. Aaron Gulliver</i>	
<b>Performance Analysis of Pulse Based Ultra-Wideband Systems in the Highly Frequency Selective Fading Channel with Cluster Property</b> .....	1459
<i>Wei-Cheng Liu and Li-Chun Wang</i>	

---

**TRANSMISSION TECHNOLOGY POSTERS 1**

<b>Improved Belief Propagation (BP) Decoding for LDPC Codes with a Large Number of Short Cycles</b> .....	1464
<i>Kyuhyuk Chung and Jun Ho</i>	
<b>Modified Belief Propagation Decoding Algorithm for Low-Density Parity Check Code Based on Oscillation</b> .....	1467
<i>Satoshi Gounai, Tomoaki Ohtsuki and Toshinobu Kaneko</i>	
<b>Adaptive Iterative Turbo Decoding Algorithm</b> .....	1472
<i>Jian Gu, Yi Zhang, Dacheng Yang and Zhen Liu</i>	
<b>A Weighting Factor Estimation Scheme for Phase-Control Based Peak Power Reduction of Turbo-Coded OFDM Signal</b> ..	1477
<i>Osamu Muta and Yoshihiko Akaiwa</i>	

<b>Efficient MMSE-Based Space-Time Turbo Equalization in the Presence of Co-Channel Interference</b> .....	1482
<i>Tarik Ait-Idir and Samir Saoudi</i>	
<b>Adaptive Bit-Interleaved Coded OFDM Over Time-Varying Channels</b> .....	1487
<i>Jin Soo Choi, Chang Kyung Sung, Sung Hyun Moon and Inkyu Lee</i>	
<b>New Space-Time Trellis Codes for Slow Fading Channels</b> .....	1492
<i>Yi Hong and Albert Guillén i Fàbregas</i>	
<b>A QR-Based Detection Scheme of Orthogonal Space-Time Block Codes for Very Fast Fading Channels</b> .....	1497
<i>Donghun Yu and Jae Hong Lee</i>	
<b>Asymptotic Analysis of Downlink MIMO Multicarrier CDMA Systems with a Minimum Mean Square Error Receiver</b> .....	1501
<i>Kyeongyeon Kim, Jaesang Ham, Chungyong Lee and Seijoon Shim</i>	
<b>Union Bounds for BER Evaluation and Code Optimization of Space-Time Codes in 2-by-2 MIMO Systems</b> .....	1506
<i>Z. Zhang, S. W. Cheung, T. I. Yuk and H. Kuo</i>	
<b>Capacity of Space Time Block Codes with Adaptive Transmission in Correlated Rayleigh Fading Channels</b> .....	1511
<i>Leila Musavian, Mohammad Reza Nakhai and A. Hamid Aghvami</i>	
<b>On Iterative Frame Synchronization</b> .....	1516
<i>Ayman Abdel-Samad</i>	
<b>Symbol Timing for Multiple Antenna OFDM Systems</b> .....	1521
<i>Tim C. W. Schenk, Maurice M. de Laat, Peter F. M. Smulders and Erik R. Fledderus</i>	

---

## MIMO 2: OFDM

<b>An Optimized-Hierarchy-Aided Maximum Likelihood Detector for MIMO-OFDM</b> .....	1526
<i>J. Akhtman and L. Hanzo</i>	
<b>An Efficient Adaptive Power and Bit Allocation Algorithm for MIMO OFDM System Operating in a Multi User Environment</b> .....	1531
<i>Peerapong Uthansakul and Marek E. Bialkowski</i>	
<b>Multipacket Reception in SIMO-OFDM Systems</b> .....	1536
<i>Chengkang Pan, Yueming Cai and Youyun Xu</i>	
<b>Optimal Training Signals Design for MIMO OFDM Systems with Guard Subcarriers</b> .....	1541
<i>Zi Li, Yueming Cai and Youyun Xu</i>	
<b>Pseudo-Inverse MMSE Based QRD-M Algorithm for MIMO OFDM</b> .....	1545
<i>Sumei Sun, Yongmei Dai, Zhongding Lei, Kenichi Higuchi and Hiroyuki Kawai</i>	
<b>Performance Analysis for a Two-Ring Distributed MIMO-OFDM System</b> .....	1550
<i>Xiaolin Zhou, Himal A. Suraweera and Jean Armstrong</i>	

---

## CHANNEL ESTIMATION 1: OFDM

<b>Chunk-Based Channel Estimation for Uplink OFDM</b> .....	1555
<i>Jérôme Bonnet and Gunther Auer</i>	
<b>Channel Prediction Using Lumpable Finite-State Markov Channels in OFDMA Systems</b> .....	1560
<i>Tommy K. Chee, Cheng-Chew Lim and Jinho Choi</i>	
<b>Time-Domain MMSE Channel Estimation Based on Subspace Tracking for OFDM Systems</b> .....	1565
<i>Xiaolin Hou, Zhan Zhang and Hidetoshi Kayama</i>	
<b>Pilot-Based Fast Estimation of Frequency Offset and Channel for OFDM</b> .....	1570
<i>Yonghong Zeng and A. Rahim Leyman</i>	
<b>Semi-Blind Channel Estimation Using Superimposed Training Sequences with Constant Magnitude in Dual Domain for OFDM Systems</b> .....	1575
<i>Chih-Peng Li and Wei-Chieh Huang</i>	
<b>Enhanced DFT Interpolation-Based Channel Estimation for OFDM Systems with Virtual Subcarriers</b> .....	1580
<i>Dong Li, Feng Guo, Guosong Li and Liyu Cai</i>	

---

## CROSSLAYER DESIGN 1

<b>Adaptive Resource Allocation Algorithm with Fairness for MIMO-OFDMA System</b> .....	1585
<i>Jian Xu, Jongkyung Kim, Wonkyu Paik and Jong-Soo Seo</i>	
<b>Macro Diversity Coding for Broadcast and Multicast Services in a Coded OFDM Cellular System</b> .....	1590
<i>Sung Kyo Kang, Yun Hee Kim and Jae Young Ahn</i>	
<b>Resource Allocation and Power Control in a TDD OFDM-Based System for 4G Cellular Networks</b> .....	1595
<i>P. Bisaglia, S. Pupolin, D. Veronesi and M. Gobbi</i>	
<b>Coding and Resource Scheduling in Packet Oriented Adaptive TDMA/OFDMA Systems</b> .....	1600
<i>Tommy Svensson, Sorour Falahati and Mikael Sternad</i>	
<b>Cross-Layer Resource Allocation via Geometric Programming in Fading Broadcast Channels</b> .....	1605
<i>Kibeom Seong, Ravi Narasimhan and John M. Cioffi</i>	
<b>Partner Assignment Algorithm for Cooperative Diversity in Mobile Communication Systems</b> .....	1610
<i>Young Seok Jung and Jae Hong Lee</i>	

---

## PERFORMANCE ANALYSIS & CAPACITY

<b>Channel Capacity of BLAST Based on the Zero-Forcing Criterion</b> .....	1615
<i>Heunchul Lee and Inkyu Lee</i>	

<b>Practicable MIMO Capacity in Ideal Channels</b> .....	1620
<i>S. Amir Mirtaheeri and Rodney G. Vaughan</i>	
<b>Rate Regions of Asymmetrical Multiple Access with Receive Diversity</b> .....	1625
<i>Thomas Deckert, Sebastian Kaiser and Gerhard Fettweis</i>	
<b>New Results on the Performance Evaluation of the Relay Fading Channel</b> .....	1630
<i>Theodoros A. Tsiftsis, George K. Karagiannidis and P. Takis Mathiopoulos</i>	
<b>Mellin Transform Based Performance Analysis of Fast Frequency Hopping Using Product Combining</b> .....	1635
<i>Sohail Ahmed, Lie-Liang Yang and Lajos Hanzo</i>	
<b>Accurate BER Analysis of QPSK Modulated Asynchronous DS-CDMA Systems</b>	
<b>Communicating Over Rayleigh Channels</b> .....	1640
<i>Xiang Liu and Lajos Hanzo</i>	

---

## DIVERSITY TECHNIQUES

<b>Performance Based Receive Antenna Selection Algorithm for Layered Space-Time System</b> .....	1645
<i>Di Lu and Daniel K. C. So</i>	
<b>Switching Rate and Dwell Time of Hybrid Selection-Maximal Ratio Combining in Rayleigh Fading Channels</b> .....	1650
<i>James K. Cavers and Paul K. M. Ho</i>	
<b>On the Diversity and Multiplexing Tradeoff for MIMO Links with Imperfect CSIT</b> .....	1655
<i>Albert W. C. Lim and Vincent K. N. Lau</i>	
<b>MDPSK Diversity Receiver Over Rayleigh Fading Channels with Differential Detection and Nonidentical Branch Statistics</b> .....	1660
<i>Hua Fu and Pooi Yuen Kam</i>	
<b>Statistical Transmit Antenna Selection for Correlated Rayleigh Fading MIMO Channels</b> .....	1665
<i>Shi Jin, Xiao Li and Xiqi Gao</i>	
<b>Transmit Antenna Shuffling for Quasi-Orthogonal Space-Time Block Codes with Linear Receivers</b> .....	1670
<i>Yi Yu, Sylvie Kerouedan and Jinhong Yuan</i>	

---

## ADAPTIVE MODULATION

<b>Model-Based Adaptive Algorithms for Time-Varying Communication Channels with Application to Adaptive Multiuser Detection</b> .....	1675
<i>Zarko B. Krusevac, Rodney A. Kennedy and Predrag B. Rapajic</i>	
<b>A New Equivalent SNR Calculation in AMC</b> .....	1680
<i>Zhen Liu, Ran Duan and Dacheng Yang</i>	
<b>Rate Adaptation in Time Varying Channels Using Acknowledgement Feedback</b> .....	1683
<i>Chin Keong Ho and Job Oostveen</i>	
<b>Capacity of Rate Adaptive MQAM Systems in the Presence of Channel Estimation Errors Under BER Constraint</b> .....	1688
<i>Ronghong Mo and Yong Huat Chew</i>	
<b>Adaptive Modulation and Diversity Combining Based on Output-Threshold MRC</b> .....	1693
<i>Young-Chai Ko, Hong-Chuan Yang and Mohamed-Slim Alouini</i>	

---

## DETECTION 1: LIST, LATTICE, SPHERE

<b>A Computationally Efficient Sphere Decoding Algorithm with Smart Radius Reduction Control</b> .....	1698
<i>Hee Goo Han and Seong Keun Oh</i>	
<b>Noncoherent Lattice Decoding of PAM and ASK</b> .....	1703
<i>Daniel J. Ryan, Iain B. Collings and I. Vaughan L. Clarkson</i>	
<b>Decision Feedback Aided Detection Based on Lattice Reduction in MIMO Systems</b> .....	1708
<i>Xinglin Wang, Ping Gong, Kai Niu, Weiling Wu, Jie Zhang and Martin Weckerle</i>	
<b>List Stack Detection with Reduced Search Space for MIMO Communication Systems</b> .....	1713
<i>W. H. Chin and S. Sun</i>	
<b>List-Sequential (LISS) Multiple-Symbol Detection of Differential Phase Shift Keying</b> .....	1717
<i>Gerhard Bauch, Christian Kuhn and Prasanna Sethuraman</i>	

---

## CHANNEL ESTIMATION 2: MIMO

<b>On Channel Estimation for Layered Space-Time Block Spread CDMA Systems</b> .....	1722
<i>Tio Surya Dharma, A. S. Madhukumar, A. B. Premkumar and Xiaoming Peng</i>	
<b>Enhanced Phase-Shifted Pilots Based Channel Estimation for MIMO-OFDM Systems with Virtual Subcarriers</b> .....	1728
<i>Dong Li, Xiaolong Zhu, Hongwei Yang and Liyu Cai</i>	
<b>A Carrier Interferometry Based Channel Estimation Technique for One-Cell Reuse MIMO-OFDM/TDMA Cellular Systems</b> .....	1733
<i>Kazunari Yokomakura, Seiichi Sanpei, Hiroshi Harada and Norihiko Morinaga</i>	
<b>Performance Analysis of Maximum-Likelihood Semiblind Estimation of MIMO Channels</b> .....	1738
<i>Tianbin Wo, Peter Adam Hoehner, Ansgar Scherb and Karl-Dirk Kammeyer</i>	
<b>SGA Based Symbol Detection and EM Channel Estimation for MIMO Systems</b> .....	1743
<i>Yugang Jia, Christophe Andrieu, Robert J. Piechocki and Magnus Sandell</i>	

<b>Extrapolation of Time-Varying MIMO Channels for an E-SDM System</b> .....	1748
<i>Bui Huu Phu, Yasutaka Ogawa, Takeo Ohgane and Toshihiko Nishimura</i>	

---

## CDMA

<b>Frequency-Hopping CDMA Wireless Communication Systems Using Prime Codes</b> .....	1753
<i>Cheng-Yuan Chang, Chih-Cheng Wang, Guu-Chang Yang, Mao-Fu Lin, Yu-Shing Liu and Wing C. Kwong</i>	
<b>A Novel Peak-Windowing Technique for WCDMA Systems</b> .....	1758
<i>H. Kuo, S. W. Cheung and Simon S. F. Hau</i>	
<b>Downlink DS-CDMA Transmission with Joint MMSE Equalization and ICI Cancellation</b> .....	1762
<i>Kazuaki Takeda, Koichi Ishihara and Fumiyuki Adachi</i>	
<b>Chip-Interleaved Multi-Rate CDMA with 2-Dimensional OVSF Spreading</b> .....	1767
<i>Le Liu and Fumiyuki Adachi</i>	
<b>Non-Data Aided MMSE Receiver for DS/CDMA Systems</b> .....	1772
<i>Tsui-Tsai Lin</i>	
<b>Update Rate of Channel Estimation for UMTS-HSDPA in Time-Varying Channels</b> .....	1777
<i>Klemens Freudenthaler, Andreas Springer, Joachim Wehinger and Christoph F. Mecklenbräuker</i>	

---

## IMPLEMENTATION 1

<b>Experimental Evaluation of Eigenbeam MIMO-OFDM Implemented in FPGA for Wireless LAN</b> .....	1782
<i>Takeshi Onizawa, Atsushi Ohta, Yusuke Asai and Satoru Aikawa</i>	
<b>System Design of a Configurable Highly Digital UMTS/NAVSAT RF-Receiver</b> .....	1787
<i>Rainer Stuhlberger, Linus Maurer, Christian Wicpalek, Eckart Goehler, Guenter Heinrichs, Jón Winkel, Christian Drewes, Gernot Hueber and Andreas Springer</i>	
<b>Performance of Differential Pulse-Position Modulation (DPPM) with Concatenated Coding Over Indoor Wireless Infrared Communications</b> .....	1792
<i>Ubolthip Sethakaset and T. Aaron Gulliver</i>	
<b>Variable Bandwidth for GERAN Evolution with Regular Frequency Planning</b> .....	1797
<i>Olli Piirainen, Jari Hulkkonen, Kari Niemelä and Mikko Säily</i>	
<b>AGC and Quantization Effects in a Zero-Forcing MIMO Wireless System</b> .....	1802
<i>Boyd M. Murray and Iain B. Collings</i>	
<b>Performance Analysis of Pulse Width Modulated RF Class- E Power Amplifier</b> .....	1807
<i>Kevin Tom, Mike Faulkner and Thomas Lejon</i>	

---

## TRANSMISSION TECHNOLOGY POSTERS 2

<b>Field Experiments on Real-Time 1-Gbps High-Speed Packet Transmission in MIMO-OFDM Broadband Packet Radio Access</b> .....	1812
<i>Hidekazu Taoka, Kenichi Higuchi and Mamoru Sawahashi</i>	
<b>IQ Space Frequency Time Codes for MIMO-OFDM Systems</b> .....	1817
<i>Samir Al-Ghadhban, R. Michael Buehrer and Brian D. Woerner</i>	
<b>Minimum Selection GSC with Down-Link Power Control</b> .....	1821
<i>Nesrine Belhaj, Mohamed-Slim Alouini and Khalid Qaraqe</i>	
<b>Exploiting Channel Time Selectivity in Pilot-Aided Alamouti STBC Systems</b> .....	1826
<i>W. H. Chin</i>	
<b>Optimal Beamforming for Sum-MSE Minimization in MIMO Downlink Channels</b> .....	1830
<i>Gan Zheng, Tung-Sang Ng and Kai-Kit Wong</i>	
<b>A Novel Power Allocation Strategy for Finite Alphabet in MIMO Systems</b> .....	1835
<i>Jinliang Huang and Svante Signell</i>	
<b>Design Criteria of MIMO Systems</b> .....	1840
<i>Hajime Suzuki, Mark Hedley and Graham Daniels</i>	
<b>On Ordering Optimization for MIMO Systems with Decentralized Receivers</b> .....	1844
<i>René Habendorf and Gerhard Fettweis</i>	
<b>Performance of Multi-Carrier Access Schemes with Receiver Impairments in Down Link Indoor Environment</b> .....	1849
<i>Suvra Sekhar Das, Rajeshwar Kurapati Rao and Ramjee Prasad</i>	
<b>Some Statistical Properties of Multicarrier Signals and Related Measures</b> .....	1854
<i>Ali Behravan and Thomas Eriksson</i>	
<b>The Application of Spatial Shifting for Peak-to-Average Power Ratio Reduction in MIMO OFDM Systems</b> .....	1859
<i>Tim C. W. Schenk, Peter F. M. Smulders and Erik R. Fledderus</i>	
<b>Performance Comparison of UWB Hopping Codes in a Multi-User Rich Scattering Environment</b> .....	1864
<i>K. Popovski, B. J. Wysocki and T. A. Wysocki</i>	
<b>Codeword Length Optimization for CPPUWB Systems</b> .....	1869
<i>Yu-Hao Chang, Shang-Ho Tsai, Xiaoli Yu and C.-C. Jay Kuo</i>	

---

## TRANSPORTATION SYSTEMS

<b>Low Complexity Parameter Estimation for the Multi-Antenna Generalized Rake Receiver</b> .....	1874
<i>Tracy Fulghum, Douglas Cairns, Gregory E. Bottomley and Carmela Cozzo</i>	

<b>Fine Frequency Offset Estimation for Frequency-Selective Channels</b> .....	1879
<i>Ayman Abdel-Samad</i>	
<b>Adaptive CDMA Multipath Delay Tracker for Closely Spaced Multipaths</b> .....	1884
<i>Tianxiang Yao, Jiangli Zhu, Aiping Huang, Xiuqing Ye and Weikang Gu</i>	
<b>Estimation of the Channel-Impulse-Response Length for Adaptive OFDM Systems Based on Information Theoretic Criteria</b> .....	1888
<i>Ali Aassie Ali, Van Duc Nguyen, K. Kyamakya and A. S. Omar</i>	
<b>A Channel Estimation Technique for Uplink TDD MC-CDMA</b> .....	1893
<i>Ivan Cosovic and Luca Sanguinetti</i>	
<b>Improved Frequency Domain SNR Estimator Using DCT in Mobile Fading Channels</b> .....	1898
<i>Sungtae Kim, Goohyun Park, Takki Yu, Hyunkyu Yu, Jaegu Lee and Daesik Hong</i>	

---

## SPACE-TIME CODING 1

<b>Space-Time Block Codes in Keyhole Fading Channels: Error Rate Analysis and Performance Results</b> .....	1903
<i>Yi Gong and Khaled Ben Letaief</i>	
<b>Closed-Form Symbol Error Probabilities of Distributed Orthogonal Space-Time Block Codes</b> .....	1908
<i>M. Dohler, M. Arndt, D. Barthel, A. Lodhi and A. H. Aghvami</i>	
<b>Performance Analysis of V-BLAST System with Imperfect Channel Estimation</b> .....	1913
<i>Haitao Liu, Gang Li and Daoben Li</i>	
<b>An Improved Recursive Algorithm for BLAST</b> .....	1918
<i>Hufei Zhu, Zhongding Lei and Francois Chin</i>	
<b>Capacity of Alamouti Coded OFDM Systems in Time-Varying Multipath Rayleigh Fading Channels</b> .....	1923
<i>Jun Wang, Oliver Yu Wen, Shaoqian Li and Roger Shu Kwan Cheng</i>	
<b>A Data-Bearing Approach for Pilot-Aiding in Space-Time Coded MIMO Systems</b> .....	1928
<i>Chaiyod Pirak, Z. Jane Wang, K. J. Ray Liu and Somchai Jitapunkul</i>	

---

## SYNCHRONIZATION 1: OFDM

<b>A Novel Timing Synchronization Method for Distributed MIMO-OFDM System</b> .....	1933
<i>Feng Guo, Dong Li, Hongwei Yang and Liyu Cai</i>	
<b>Residual Carrier and Sampling Frequency Synchronization in Multiuser OFDM Systems</b> .....	1937
<i>L. Häring, S. Bieder and A. Czylik</i>	
<b>Timing Synchronisation for OFDM-WLANs with Time Averaging Scheme</b> .....	1942
<i>Ying Tan, Scott Leyonhjelm and Mike Faulkner</i>	
<b>Robust OFDM Timing Synchronisation</b> .....	1947
<i>C. Williams, M. A. Beach and S. McLaughlin</i>	
<b>Real-Time Phase Tracking Method for IEEE 802.11a/g/n Receiver Under Phase Noise Condition</b> .....	1951
<i>Ren Sakata, Koji Akita and Kazumi Sato</i>	

---

## ULTRA-WIDEBAND SYSTEMS 2

<b>Empirical Ultra Wide Band Path Loss Model in Office Environments</b> .....	1956
<i>Jinwon Choi, Noh-Gyoung Kang, Yu-Suk Sung and Seong-Cheol Kim</i>	
<b>UWB Channel Estimation: Design and Performance Evaluation</b> .....	1961
<i>Yuheng Huang, Amol Rajkotia and Samir Soliman</i>	
<b>Multiple Access Performance of TR-UWB System Using a Combined PPM and Differential Multi-Pulse Modulation</b> .....	1967
<i>Jakkrapong Sumethnapi and Kiyomichi Araki</i>	
<b>Multiband-OFDM UWB vs. IEEE802.11n: System Level Design Considerations</b> .....	1972
<i>Ying Chen, Jian Zhang and A. D. S. Jayalath</i>	
<b>New Preamble Design for Reduced-Complexity Timing Acquisition in UWB Systems</b> .....	1977
<i>Ki-Ho Kil, Bong-Gee Song, Sung-Yoon Jung and Dong-Jo Park</i>	

---

## MIMO 3: MULTIUSER & INTERFERENCE CANCELLATION

<b>A Minimum Mean-Square Error Criterion Based Nonlinear Joint Transmitter-Receiver Processing Algorithm for the Downlink of Multi-User MIMO Systems</b> .....	1982
<i>Jia Liu and Witold A. Krzymien</i>	
<b>The Effect of Computation and Feedback Delay on the Capacity of Multiuser MIMO Systems in a Small Outdoor Cell</b> .....	1988
<i>Matthew Webb, Mythri Hunukumbure, Mark Beach and Andrew Nix</i>	
<b>Low Complexity Soft Interference Cancellation for MIMO-Systems</b> .....	1993
<i>Steffen Bittner, Ernesto Zimmermann and Gerhard Fettweis</i>	
<b>APP Decoding of Block Codes Over Gilbert-Elliott Channels Using Generalized Weight Polynomials</b> .....	1998
<i>Wayne Griffiths, Hans-Jürgen Zepernick and Manora Caldera</i>	
<b>Adaptive Mode Selection for Multiuser MIMO Downlink Systems</b> .....	2003
<i>Yong-Up Jang, Hyuck M. Kwon and Yong H. Lee</i>	
<b>MMSE Equalizer and Chip Level Inter-Antenna Interference Canceler for HSDPA MIMO Systems</b> .....	2008
<i>Maarit Melvasalo, Pekka Jänis and Visa Koivunen</i>	



---

## OFDM - PAPR & SYNCHRONIZATION

<b>Peak to Average Power Ratio Properties of MCCDMA and SM-CDMA</b> .....	2013
<i>Maryam Sabbaghian and David Falconer</i>	
<b>Reduction of the Peak-to-Average Power Ratio for the OFDM/OQAM Modulation</b> .....	2018
<i>Alexandre Skrzypczak, Jean-Philippe Javaudin and Pierre Siohan</i>	
<b>Efficient Algorithms for PAPR Reduction in OFDM Transmitters Implemented Using Fixed-Point DSPs</b> .....	2023
<i>Brendon Schmidt, Chi Ng, Patrick Yien, Christina Harris, Ushodaya Saripalle, Andrew Price, Simon Brewer, Giuseppe Scelsi, Robert Slaviero and Jean Armstrong</i>	
<b>Synchronization and Channel Estimation in Cyclic Postfix Based OFDM System</b> .....	2028
<i>Jongkyung Kim, Sangjin Lee and Jongsoo Seo</i>	
<b>ZCZ Sequences-Based Frequency Synchronization for Interleaved OFDMA Uplink</b> .....	2033
<i>Huan Su, Jianhua Zhang and Ping Zhang</i>	
<b>Sequential Search Method with Different Thresholds for Clipped Power for OFDM Signal</b> .....	2037
<i>Jiyun Shen, Hiromasa Fujii, Takahiro Asai and Hitoshi Yoshino</i>	

---

## CROSSLAYER DESIGN 2

<b>Analysis of the Go-Back-N Protocol on Finite State Markov Fading Channels</b> .....	2042
<i>Cecilio Pimentel and Rodrigo L. Siqueira</i>	
<b>Code Design of Type-II Hybrid ARQ with Iterative Receivers Over ISI Channels</b> .....	2047
<i>Allen Chuang and Iain B. Collings</i>	
<b>Multi-User ARQ</b> .....	2052
<i>Peter Larsson and Niklas Johansson</i>	
<b>Impact of an ARQ Scheme in the MAC/LLC Layer on Upper-Layer Packet Transmissions Over a Markovian Channel</b> .....	2058
<i>Jun-Bae Seo, Nam-Hoon Park, Hyong-Woo Lee and Choong-Ho Cho</i>	
<b>MC-CDMA HARQ with Variable Spreading Factor</b> .....	2063
<i>Shinsuke Takaoka, Haris Gacanin and Fumiyuki Adachi</i>	

---

## BIT-INTERLEAVED CODED MODULATION

<b>Real-Time Multi-Resolution Data Transmission Over Correlated Fading Channels Using Hierarchical Constellations</b> .....	2068
<i>Md. Jahangir Hossain, Mohamed-Slim Alouini and Vijay K. Bhargava</i>	
<b>Performance of MIMO-OFDM-BICM on Measured Indoor Channels</b> .....	2073
<i>Hajime Suzuki, Mark Hedley, Graham Daniels and Jinhong Yuan</i>	
<b>Symbol Based Rate Adaptation in Coded MIMO-OFDM Systems</b> .....	2078
<i>Chang Kyung Sung and Inkyu Lee</i>	
<b>Optimized Mappings for Iteratively Decoded BICM on Rayleigh Channels with IQ Interleaving</b> .....	2083
<i>Thorsten Clevorn, Susanne Godtmann and Peter Vary</i>	
<b>Adaptive Modulation and Coding for Bit Interleaved Coded Multiple Beamforming</b> .....	2088
<i>Ersin Sengul, Enis Akay and Ender Ayanoglu</i>	
<b>Bit-Interleaved Coded Modulation with Iterative Interference Suppression for Multi-Sequence Signaling Based MC-CDMA</b> .....	2093
<i>Der-Feng Tseng, Wei-Yu Lai and Keng-Chi Lu</i>	

---

## MULTIUSER TECHNIQUES

<b>Iterative Multiuser Detection for Asynchronous Multi-Sequence Signaling Based CDMA Systems</b> .....	2098
<i>Der-Feng Tseng and Keng-Chi Lu</i>	
<b>Frequency-Domain Multiuser Detection for CP-Assisted DS-CDMA Signals</b> .....	2103
<i>Paulo Silva and Rui Dinis</i>	
<b>A Novel Dynamic Subcarrier Assignment Scheme for Multiuser OFDMA Systems</b> .....	2109
<i>Marco Moretti and Michele Morelli</i>	
<b>Detection Opportunities for CDM-OFDMA</b> .....	2114
<i>Ronald Raulefs, Armin Dammann and Serkan Ayaz</i>	
<b>Dynamic Space-Frequency-Division Multiple-Access Over Frequency-Selective Slow-Fading Channels</b> .....	2119
<i>Zhan Zhang and Hidetoshi Kayama</i>	
<b>MMSE Receiver for Multiuser Interference Cancellation in Uplink OFDMA</b> .....	2125
<i>D. Sreedhar and A. Chockalingam</i>	

---

## DETECTION 2

<b>On Detection of Distributed STBC-OFDM System with Multiple Carrier Frequency Offsets</b> .....	2130
<i>Zheng Li, Wenshu Zhang and Guangxi Zhu</i>	
<b>Automatic Switch Between Static and Mobile Operation Modes in DVB-T/H Receivers</b> .....	2135
<i>Alessio Filippi, Sri Andari Husen and Stan Baggen</i>	
<b>Modulation Recognition of SDR Receivers Based on WNN</b> .....	2140
<i>Yaqin Zhao, Guanghui Ren and Zhi Zhong</i>	
<b>ML Detection with Blind Linear Prediction for Differential Space-Time Block Code Systems</b> .....	2144
<i>Seree Wanichpakdeedecha, Kazuhiko Fukawa, Hiroshi Suzuki and Satoshi Suyama</i>	

<b>Nonlinear Least Squares Lattice Algorithm for Identifying the Power Amplifier with Memory Effects</b> .....	2149
<i>Hui Li, Zhaowu Chen and Desheng Wang</i>	
<b>Performance Analysis of Maximum Likelihood Detection for MIMO Systems</b> .....	2154
<i>Myeongcheol Shin, Dong Seung Kwon and Chungyong Lee</i>	

---

### TRANSMISSION TECHNOLOGY POSTERS 3

<b>Channel Estimation and Multiuser Detection for MC-DS/CDMA Systems</b> .....	2159
<i>Bangwon Seo, Jae Young Ahn and Hyung-Myung Kim</i>	
<b>Carrier Frequency Offset Estimation with Lower Threshold Effect</b> .....	2163
<i>Meng-Hong Hsieh and Ju-Ya Chen</i>	
<b>Fractional Spaced Channel Estimation and Shortening for Joint Delayed Decision Feedback Sequence Estimation</b> .....	2167
<i>Thorben Detert, Romain Drauge, Xuehong Zhou, Hartmut Wilhelm and Wen Xu</i>	
<b>Recurrent Neural Network Based Narrowband Channel Prediction</b> .....	2173
<i>Wei Liu, Lie-Liang Yang and Lajos Hanzo</i>	
<b>Analytical SIR Analysis and Performance Evaluation of the PIC Receiver in UMTS Multi-Cell Systems</b> .....	2178
<i>Ana M. Barbancho, Isabel Barbancho and Lorenzo J. Tardón</i>	
<b>Low Complexity Successive Interference Cancellation for Per-Antenna-Coded MIMO-OFDM Schemes by Applying Parallel-SQRD</b> .....	2183
<i>Dirk Wübben and Karl-Dirk Kammeyer</i>	
<b>Successive Interference Cancellation in Clipped and Product Combining Aided FFH Multi-User Systems</b> .....	2188
<i>Sohail Ahmed, Lie-Liang Yang and Lajos Hanzo</i>	
<b>Single-Carrier Frequency-Domain Equalization for Space-Time Coded Systems Over Multipath Channels</b> .....	2193
<i>Yang Yang, Yong Huat Chew and Tjeng Thiang Tjhung</i>	
<b>Joint Carrier Recovery and Turbo Decoding Method for TDMA Burst MODEM Under Very Low SNRs</b> .....	2198
<i>Pansoo Kim, Kwonhue Choi, Yun-Jeong Song, Byoung-Hak Kim, Deock-Gil Oh and Ho-Jin Lee</i>	
<b>A Polyphase-Based Processing for All-Digital UWB Receiver Architectures</b> .....	2201
<i>Marco Di Renzo, Fabio Graziosi and Fortunato Santucci</i>	
<b>An All-Digital Clock Recovery Architecture for the BRAN Hiperaccess Uplink Receiver</b> .....	2206
<i>Pietro Savazzi, Paolo Gamba and Sergio Callegari</i>	
<b>A Novel Transmitter Identification Technique for use in Distributed 8VSB DTV System</b> .....	2211
<i>Soon-Chan Kwon, Yong-Tae Lee and Jong-Soo Seo</i>	

---

### BEAMFORMING

<b>Experimental Evaluation of Eigenvector Beamforming Method with 8X4 MIMO-OFDM Testbed</b> .....	2216
<i>Riichi Kudo, Kentaro Nishimori, Yasushi Takatori and Koichi Tsunekawa</i>	
<b>Combining Eigen-Beamforming and Cyclic Delay Diversity for Correlated MISO Channels with Block-Iterative GDFE Receiver</b> .....	2221
<i>Wing Seng Leon, Ying-Chang Liang, Yonghong Zeng and Changlong Xu</i>	
<b>Efficient Feedback of the Channel Information for Closedloop Beamforming in WLAN</b> .....	2226
<i>Joonsuk Kim and Carlos Aldana</i>	
<b>Minimax Problems and Directional Derivatives for MIMO Channels</b> .....	2231
<i>Anke Feiten and Rudolf Mathar</i>	
<b>Adaptive Minimum Symbol Error Rate Beamforming Assisted Receiver for Quadrature Amplitude Modulated Systems</b> .....	2236
<i>S. Chen, H.-Q. Du and L. Hanzo</i>	
<b>Efficient Receive Antenna Selection Algorithms and Framework for Transmit Zero-Forcing Beamforming</b> .....	2241
<i>Boon Chin Lim, Christian Schlegel and Witold A. Krzymien</i>	

---

### SYNCHRONIZATION 2

<b>Initial and Post-Initial Acquisition in the Serial Search Based Noncoherent Multiple Transmit/Receive Antenna Aided DS-CDMA Downlink</b> .....	2246
<i>SeungHwan Won and Lajos Hanzo</i>	
<b>Inter-Symbol Interference Aware Frame Synchronization</b> .....	2251
<i>Raffaella Pedone, Marco Villanti and Giovanni E. Corazza</i>	
<b>Sign Bit Chip Correlation MMSE Receiver with Multipath Interference Correlative Timing for DS-CDMA Systems</b> .....	2256
<i>Tsuyoshi Hasegawa and Masahiko Shimizu</i>	
<b>Comparison of DCSK Receiver and Enhanced DCSK Receiver with Synchronization Error</b> .....	2261
<i>Yungil Kim, Jaehwan Kim, Jae-Hyon Kim and Joonhyuk Kang</i>	
<b>Adding Up for Frame Synchronization</b> .....	2266
<i>Marco Villanti, Matteo Iubatti, Alessandro Vanelli-Coralli and Giovanni E. Corazza</i>	

---

### IMPLEMENTATION 2

<b>An Low Complexity Hardware Implementation of MIMO Detector with Application to WLAN</b> .....	2271
<i>Chanho Yoon, Eunyoung Choi, Jungbo Son, Sok-Kyu Lee and Taehyun Jeon</i>	
<b>Efficient Polynomial Interpolation Filters with Symmetric Coefficients</b> .....	2276
<i>Joon Tae Kim</i>	

<b>Ultra Low-Power Digital Demodulators for Short Range Applications</b> .....	2280
<i>Mehmet R. Yuce and Ahmet Tekin</i>	
<b>Indoor Experiments of an E-SDM Testbed with Channel Prediction</b> .....	2285
<i>Toshihiko Nishimura, Yasuo Hata, Takeo Ohgane and Yasutaka Ogawa</i>	
<b>Joint Adaptive Compensation for Amplifier Nonlinearity and Quadrature Modulation Errors</b> .....	2290
<i>Young-Doo Kim, Eui-Rim Jeong, Taegyun Noh and Yong H. Lee</i>	
<b>Coded MIMO Using Interblock Memory</b> .....	2294
<i>Chung-Li Wang, Chia-Jung Yeh, Yen-Kai Chen and Mao-Chao Lin</i>	

---

## SPACE-TIME CODING 2

<b>Multi-Chip Differential Space-Time Block Coding for DS-CDMA</b> .....	2299
<i>Shun K. Cheung and Robert Schober</i>	
<b>A New Block-Wise Adaptive Bit and Power Allocation Algorithm in V-BLAST System</b> .....	2304
<i>Jun Ma and Wuyang Zhou</i>	
<b>Low Complexity Maximum-Likelihood Decoder for VBLAST-STBC Scheme in MIMO Wireless Communication Systems</b> .....	2309
<i>Van-Su Pham, Minh-Tuan Le, Linh Mai and Giwan Yoon</i>	
<b>Performance Analysis of the Differential Space-Time Modulation in Time-Varying Rayleigh Fading Channels</b> .....	2314
<i>Van Khanh Nguyen</i>	
<b>Uplink Capacity of Cellular Systems Using Space-Time Block Codes with Power Control</b> .....	2319
<i>Zhuo Wu and Alister G. Burr</i>	
<b>Rate 2 Quasi-Orthogonal Space Time Block Codes Using Parallel Interference Cancellation</b> .....	2324
<i>Nicholas S. J. Pau, Desmond P. Taylor and Philippa A. Martin</i>	

---

## EQUALIZATION 1

<b>Novel Techniques to Minimize the Error Propagation of Decision Feedback Equalizer in 8VSB DTV System</b> .....	2329
<i>JongSeob Baek, SungWoo Park and Jong-Soo Seo</i>	
<b>Blind IIR Channel Equalization Based on Second-Order Statistics</b> .....	2334
<i>Fangjiong Chen, Sam Kwong, Wenfei Nie, Gang Wei and Fei Ji</i>	
<b>Inter-Symbol Interference Suppression Scheme Using Periodic Signal Waveform for Fixed-Rate COFDM Systems</b> .....	2339
<i>Fumiaki Maehara, Satoshi Goto and Fumio Takahata</i>	
<b>Chip-Level Channel Equalization with Rake-Like Structures for Multicode Downlink WCDMA Communications</b> .....	2344
<i>Lahouari Fathi, Geneviève Jourdain and Marylin Arndt</i>	
<b>Iterative Equalization and Source Decoding for Vector Quantized Sources</b> .....	2349
<i>Lie-Liang Yang, Jin Wang, Rob Maunder and Lajos Hanzo</i>	
<b>Improved Scheme for Energy Spreading Transform Based Equalization</b> .....	2354
<i>Taewon Hwang and Ye Li</i>	

---

## ULTRA-WIDEBAND SYSTEMS 3

<b>Diagonally Loaded Linear MMSE Equalization for UWB Multipath Channel Under Limited Training Sample Support</b> .....	2359
<i>Zhiwei Lin, A. B. Premkumar, A. S. Madhukumar and Francois Chin</i>	
<b>Sparsity-Driven Multiple Access Ultra-Wideband Signal Detection</b> .....	2364
<i>Wei Li and T. Aaron Gulliver</i>	
<b>Interference Resistant Adaptive Threshold Acquisition Algorithm for DS-UWB Systems</b> .....	2368
<i>Jun Chen and Zheng Zhou</i>	
<b>Maximum Likelihood Frequency Offset Estimation &amp; Cramer Rao Bound for Ultra-Wideband (UWB) Multi-Band OFDM Systems</b> .....	2373
<i>Chin Wee Yak, Zhongding Lei and Tjeng Thiang Tjhung</i>	
<b>Singular Value Decomposition-Based Algorithm for IEEE 802.11a Interference Suppression in DS-UWB and TH-PAM UWB Systems</b> .....	2378
<i>Shaoyi Xu, Zhiquan Bai, Qinghai Yang and Kyung Sup Kwak</i>	

---

## LOW-DENSITY PARITY CHECK CODING

<b>Low-Density Parity-Check Coded Distributed Space-Time Cooperative System</b> .....	2383
<i>Bo Dong, Lin Xie, Peiliang Qiu and Qinru Qiu</i>	
<b>On the Performance of LDPC Codes with Differential Detection Over Rayleigh Fading Channels</b> .....	2388
<i>Hiroshi Tatsunami, Koji Ishibashi and Hideki Ochiai</i>	
<b>Fast Convergence Algorithm for LDPC Codes</b> .....	2393
<i>Frank Kienle, T. Lehnigk-Emden and Norbert Wehn</i>	
<b>Generalized Low-Density Parity-Check Coding Aided Multilevel Codes</b> .....	2398
<i>R. Y. S. Tee, F. C. Kuo and L. Hanzo</i>	
<b>High Performance Simplified LDPC Decoder without Knowledge of Multi-Path Rayleigh Channel</b> .....	2403
<i>Tsuguo Maru</i>	

<b>Random Coding Union Bounds for LDPC Coded MIMO Systems</b> .....	2408
<i>Jingqiao Zhang and Heung-No Lee</i>	

---

## EQUALIZATION 2

<b>Chip Level Equalization for DS-CDMA Systems Using Iterative Pilot Signals Enhancement</b> .....	2413
<i>Wing Seng Leon and Ying-Chang Liang</i>	
<b>Frequency-Domain Pre-Equalization for Single-Carrier Space-Division Multiple-Access Downlink Transmissions</b> .....	2418
<i>Michele Morelli, Man-On Pun and C.-C. Jay Kuo</i>	
<b>Fast Algorithm for Decision Feedback Equalization in Multiple Input Multiple Output Channel</b> .....	2423
<i>Wenjie Jiang, Yusuke Asai, Takeshi Onizawa and Satoru Aikawa</i>	
<b>Evaluation of New NLMS and RLS Chip Equalizers Using Tentative Decision Data for HSDPA Systems</b> .....	2429
<i>Daisuke Ogawa, Takashi Dateki and Hideto Furukawa</i>	
<b>A Criterion for Adaptive Rake/Equalizer Configuration of Mobile Receivers</b> .....	2434
<i>Eric Hardouin and Jean-Marie Chaufray</i>	
<b>Channel Equalization in HSDPA Receivers: Trade-Off Between Performance and Complexity with a Variable Oversampling</b> .....	2439
<i>Marcus Schämamm, Martin Bückler, Sebastian Hessel and Ulrich Langmann</i>	

---

## HYBRID ARQ

<b>Payload Length and Rate Adaptation for Throughput Optimization in Wireless LANs</b> .....	2444
<i>Sayantana Choudhury and Jerry D. Gibson</i>	
<b>A Scheduling Scheme Under a Ratio Constraint for the Multiuser MIMO Systems</b> .....	2449
<i>Jiwon Kang, Hakju Lee, Chungyong Lee and Young Yong Kim</i>	
<b>Call Admission Control with Adaptive Active Link Protection for Wireless Systems</b> .....	2454
<i>Choong Ming Chin, Moh Lim Sim and Sverrir Olafsson</i>	
<b>Time Slot Allocation Based on Region and Time Partitioning for Dynamic TDD-OFDM Systems</b> .....	2459
<i>Hee-Jeong Chung, Mee-Ran Kim, Nak-Myeong Kim and Sangboh Yun</i>	
<b>Enhanced Rate Adaptive Resource Allocation Scheme in Downlink OFDMA System</b> .....	2464
<i>Junhong Hui and Yongxing Zhou</i>	
<b>Adaptive Frame Switching for UMTS UL-EDCH - Ping-Pong Avoidance</b> .....	2469
<i>Shupeng Li, FangChen Cheng, Yifei Yuan and Teck Hu</i>	

---

## TURBO/ITERATIVE TECHNIQUES

<b>A Differential Turbo Detection Aided Sphere Packing Modulated Space-Time Coding Scheme</b> .....	2474
<i>Osamah Alamri, Nan Wu and Lajos Hanzo</i>	
<b>How to Obtain Good Performance by Iterative and Diversity Techniques for Uplink MC-CDMA Systems</b> .....	2479
<i>Y. Yuan-Wu, M. Sarkiss and Ye Li</i>	
<b>An Iterative Detection Aided Unequal Error Protection Wavelet Video Scheme Using Irregular Convolutional Codes</b> .....	2484
<i>A. Q. Pham, J. Wang, L. L. Yang and L. Hanzo</i>	
<b>Rate-Compatible Shortened Turbo Product Codes</b> .....	2489
<i>Dongning Feng, Jinhong Yuan and Karine Amis</i>	
<b>Three-Dimensional EXIT Chart Analysis of Iterative Detection Aided Coded Modulation Schemes</b> .....	2494
<i>R. Y. S. Tee, S. X. Ng and L. Hanzo</i>	
<b>A Parallel Processing Approach for Fast Iterative Decoding of Orthogonal Convolutional Codes</b> .....	2499
<i>Yu-Cheng He, David Haccoun and Christian Cardinal</i>	

---

## INTERFERENCE CANCELLATION

<b>Iterative Joint PIC and 2D MMSE-FDE for Turbo-Coded HARQ with SC-MIMO Multiplexing</b> .....	2503
<i>Akinori Nakajima and Fumiyuki Adachi</i>	
<b>A Two-Stage Iterative Successive Detection Algorithm for V-BLAST Code</b> .....	2508
<i>Zhangsheng Xu and Jinkang Zhu</i>	
<b>Analysis of Reverse Link Capacity for Cellular CDMA Systems Employing Group Successive Interference Cancellation</b> .....	2513
<i>Anna-Marie Silvester, Robert Schober and P. Takis Mathiopoulos</i>	
<b>An Intercarrier Interference Suppression Technique Using Time-Domain Windowing for OFDM Systems</b> .....	2518
<i>Chin-Liang Wang, Yu-Chih Huang and Po-Chung Shen</i>	
<b>Frequency-Domain Soft Interference Cancellation for Multicode CDMA Transmissions</b> .....	2523
<i>Koichi Ishihara, Kazuaki Takeda and Fumiyuki Adachi</i>	
<b>A Low Complexity ICI Cancellation Method for High Mobility OFDM Systems</b> .....	2528
<i>Kwanghoon Kim and Hyuncheol Park</i>	

---

## DETECTION 3

<b>Non-Recursive CPM Signal Generation and Reception with Application to SC/FDE Combined with MIMO</b> .....	2533
<i>T. Buzid, S. Reinhardt, M. Huemer and I. Martoyo</i>	
<b>Suboptimal Maximum Likelihood Detection Using Gradient-Based Algorithm for MIMO Channels</b> .....	2538
<i>Theet Htun Khine, Kazuhiko Fukawa and Hiroshi Suzuki</i>	

<b>A Burst Noise Cancellation Scheme for Single Carrier Block Transmission with Cyclic Prefix</b> .....	2543
<i>Kazunori Hayashi and Hideaki Sakai</i>	
<b>On Reliability Metrics for Soft-Input Decoding in Presence of Channel Estimation Errors</b> .....	2548
<i>Mustapha Benjillali and Leszek Szczecinski</i>	
<b>A New Geometric View of the First-Order Marcum Q-Function and Some Simple Tight Erfc-Bounds</b> .....	2553
<i>Pooi Yuen Kam and Rong Li</i>	
<b>Soft Detection with Linear Precoding for Spatial Multiplexing Systems</b> .....	2558
<i>Yong Li and Jaekyun Moon</i>	

---

**TRANSMISSION TECHNOLOGY POSTERS 4;  
SATELLITE SYSTEMS & NETWORKS POSTERS**

<b>Cooperative Relaying Based on Alamouti Diversity Under Aggregate Relay Power Constraints</b> .....	2563
<i>Hu Rong, Zhang Zhang and Peter Larsson</i>	
<b>Power Allocation and Feedback Reduction for MIMO-OFDMA Opportunistic Beamforming</b> .....	2568
<i>Issam Toufik and Marios Kountouris</i>	
<b>Sufficient Conditions for Convergent Power Dynamics in Ad Hoc Networks</b> .....	2573
<i>Sverrir Olafsson</i>	
<b>Generalized Performance Analysis of Adaptive PSAM-Based Transmit-Beamforming for Wireless MIMO systems</b> .....	2578
<i>Amine Maaref and Sonia Aissa</i>	
<b>Precoder Design for DSTM Based on Statistical Information of the Fading Channels</b> .....	2583
<i>Van Khanh Nguyen</i>	

---

**RECENT ADVANCES IN SATELLITE SYSTEMS AND NETWORKS**

<b>Proposal of QAM-OFDM System with IDAR Method for Non-Linear Satellite Channel</b> .....	2587
<i>Pisit Boonsrimuang, Katsuhiro Naito, Kazuo Mori, Tawil Paungma and Hideo Kobayashi</i>	
<b>OFDM Channel Estimation with Timing Offset for Satellite Plus Terrestrial Multipath Channels</b> .....	2592
<i>Yeon-Su Kang, Do-Seob Ahn and Ho-Jin Lee</i>	
<b>Capacity Enhancement for Integrated HAPS-Terrestrial CDMA System</b> .....	2597
<i>Jeng-Ji Huang, Wei-Ting Wang and Huei-Wen Ferng</i>	
<b>An Efficient Handover Scheme for Multimedia Application Using LEO/MEO Double-Layer Satellite Network</b> .....	2602
<i>Bingcai Chen, Naitong Zhang and Boxun Nie</i>	
<b>PEPsal: A Performance Enhancing Proxy Designed for TCP Satellite Connections</b> .....	2607
<i>Carlo Caini, Rosario Firrincieli and Daniele Lacamera</i>	
<b>Adaptive GPS Acquisition Technique in Weak Signal Environment</b> .....	2612
<i>Ming-Yu Chuang and Kai-Ten Feng</i>	

---

**TRANSMISSION TECHNOLOGY POSTERS 4;  
SATELLITE SYSTEMS & NETWORKS POSTERS**

<b>Iterative Phase Offset Estimation for Mobile Broadband Satellite Internet Systems</b> .....	2617
<i>Joong-Gon Ryu, Jun Heo, Pansoo Kim and Ho-Jin Lee</i>	
<b>System Architecture for C Band Mobile Satcom Application</b> .....	2621
<i>G. Liu, M. J. Rajanik, X. Shan, W. Low, C. K. Lee and B. Li</i>	
<b>Performance Evaluation for a Closed Loop Power Control Using an Efficient Channel Estimation in SAT-CDMA</b> .....	2625
<i>Byoung-Gi Kim, Cheol-Sung Kim and Do-Seob Ahn</i>	

---

**ANTENNAS**

<b>A UWB Antenna for Impulse Radio</b> .....	2630
<i>A. A. Lestari, A. G. Yarovoy, L. P. Ligthart and E. T. Rahardjo</i>	
<b>Resonant Frequency and Impedance Determination for Backscattered Signals in CSC System</b> .....	2635
<i>Alexandre Tramoni, Claude Tetelin, Alexandre Malherbe and Jerome Conraux</i>	
<b>Transmit Antenna Selection for UHF MIMO Linking</b> .....	2640
<i>Marjan Baghaie A., Ian McLoughlin, Philippa A. Martin, Kishore Mehrotra and Desmond P. Taylor</i>	
<b>Design of a Planar UWB Antenna with Signal Rejection Capability in a Narrow Sub-Band</b> .....	2645
<i>A. M. Abbosh, M. E. Bialkowski, M. V. Jacob and J. Mazierska</i>	
<b>Design of a DTV On-Glass Planar Antenna Based on Fractal Features</b> .....	2649
<i>Chi-Fang Huang and Wu-Shun Wu</i>	
<b>A Planar Dualband Antenna for 2.4 GHz and UWB Laptop Applications</b> .....	2652
<i>Zhi Ning Chen, Duixian Liu and Brian Gaucher</i>	

---

**PROPAGATION 1**

<b>Time-Spatial Path Modeling with Multi-Scattering Attenuation Factors for Wideband Mobile Propagation</b> .....	2656
<i>Teruya Fujii and Hideki Omote</i>	

<b>Verification of 3D Ray-tracing with Non-Directional and Directional Measurements in Urban Macrocellular Environments</b> .....	2661
<i>Thomas Fügen, Jürgen Maurer, Thorsten Kayser and Werner Wiesbeck</i>	
<b>Time of Arrival Statistics in Cellular Environments</b> .....	2666
<i>Mohammed T. Simsim, Noor M. Khan, Rodica Ramer and Predrag B. Rapajic</i>	
<b>Channel Estimation for Non-Line-of-Sight WiMax Communication System</b> .....	2671
<i>Jen-Ming Wu and Wen-Bin Lin</i>	
<b>An Adaptive Positioning Scheme Based on Radio Propagation Modeling for Indoor WLANs</b> .....	2676
<i>Chin-Liang Wang and Yih-Shyh Chiou</i>	
<b>Impact of Building Database Accuracy on Predictions with Wave Propagation Models in Urban Scenarios</b> .....	2681
<i>Alexander Aschrafi, Philipp Wertz, Michael Layh, F. M. Landstorfer, Gerd Wölfle and René Wahl</i>	

---

## ANTENNA ARRAYS

<b>New Calibration Matrix Calculation Method for Removing the Effect of Mutual Coupling for Uniform Linear Arrays</b> .....	2686
<i>Tadatomo Sato and Ryuji Kohno</i>	
<b>Joint Interference Suppression and Symbol Detection in Slow FH/MFSK Systems with an Antenna Array</b> .....	2691
<i>Chi Chung Ko, Hung Nguyen-Le and Lei Huang</i>	
<b>Design of Non-Uniform Circular Phased Arrays Using Genetic Algorithms to Reduce the Maximum Side Lobe During Scanning</b> .....	2696
<i>Marco A. Panduro, Aldo L. Méndez, Gerardo Romero and René F. Domínguez</i>	
<b>A Concatenated Reduced-Rank Processing Scheme for MC-CDMA Systems with an Antenna Array</b> .....	2701
<i>Chih-Yuan Chiu and Yung-Fang Chen</i>	
<b>Experimental Antenna Array Calibration with Adaptive Linear Neuron (ADALINE) Network</b> .....	2706
<i>Hugo Bertrand, Dominic Grenier and Sébastien Roy</i>	
<b>Performance Analysis of Optimum Combining in Spherically Invariant Process Wireless Fading Channels</b> .....	2712
<i>C. Chayawan, S. Hemrungle and S. Tantarata</i>	

---

## PROPAGATION 2

<b>Carrier Frequency Effects on Path Loss</b> .....	2717
<i>Mathias Riback, Jonas Medbo, Jan-Erik Berg, Fredrik Harrysson and Henrik Asplund</i>	
<b>Spatial Characterization of 60 GHz Indoor Channels by Fast Gaussian Beam Tracking Method and Comparison with Measurements</b> .....	2722
<i>Rida Tahri, S. Collonge, G. Zaharia and G. El Zein</i>	
<b>Frequency Selectivity of 60-GHz LOS and NLOS Indoor Radio Channels</b> .....	2727
<i>Haibing Yang, Peter F. M. Smulders and Matti H. A. J. Herben</i>	
<b>UWB Spatial-Frequency Channel Characterization</b> .....	2732
<i>Wen Zhang, Thushara D. Abhayapala and Jian Zhang</i>	

---

## MULTIPLE ANTENNAS & MIMO 1

<b>Dual Antenna Terminals in an Indoor Scenario</b> .....	2737
<i>Fredrik Harrysson, Henrik Asplund, Mathias Riback and Anders Derneryd</i>	
<b>The Performance Analysis of Diversity Technologies for Mobile Ad Hoc Communications Between Moving Cars</b> .....	2742
<i>Deok-Hwan Lee, Jae-Min Shin, Hak-Lim Ko, Jeong-Gil Ko and Hyun Seo Oh</i>	
<b>Field Trial Results of 4-Way Receive Diversity in a Live GSM Network</b> .....	2747
<i>Magnus Olsson, Bo Hagerman, Mathias Riback, Michael Hesse and Branko Niksic</i>	
<b>Impact of Receiver Inter-Chain Coupling on BER Performance of Space-Time Coded MIMO Systems</b> .....	2752
<i>Christiane Kuhnert, Stephan Schulteis, Andreas Hangauer and Werner Wiesbeck</i>	
<b>Propagation Parameter Tracking Using Variable State Dimension Kalman Filter</b> .....	2757
<i>Jussi Salmi, Andreas Richter, Mihai Enescu, Pertti Vainikainen and Visa Koivunen</i>	

---

## PROPAGATION 3

<b>Effect of Spread Spectrum Pilot on an SVD Based Adaptive Duplexer</b> .....	2762
<i>Matthew Williamson and Michael Faulkner</i>	
<b>Symbol Detection Solving the Total Least Squares Problem Under Channel Uncertainties</b> .....	2767
<i>Hyun Jong Yang and Joohwan Chun</i>	
<b>Characterizing the Mobile Radio Channel by a Conservative Dynamical System</b> .....	2772
<i>Steffen Bug, Alexey Nazarov, Kira Kastell and Rolf Jakoby</i>	
<b>Requirements for Standard Radiowave Propagation Models for Vehicular Environments</b> .....	2777
<i>David G. Michelson, James Chuang and Max Kicherer</i>	
<b>Two New Methods for the Generation of Multiple Uncorrelated Rayleigh Fading Waveforms</b> .....	2782
<i>Matthias Pätzold and Bjørn Olav Hogstad</i>	
<b>Generation of Nakagami-m Fading Channels</b> .....	2787
<i>Tsan-Ming Wu</i>	

---

**SMART ANTENNAS 1**

<b>CMA/Fractional-Delay Sequential Beamforming for Wireless Multipath Communications</b> .....	2793
<i>Salma Ait Fares, Tayeb A. Denidni, Sofiène Affes and Charles Despins</i>	
<b>On the Combination of Receive Beamforming with Alamouti Decoders</b> .....	2798
<i>Chen Sun, Makoto Taromaru and Nemaï C. Karmakar</i>	
<b>A Parametric Channel Model for Smart Antennas Incorporating Mobile Station Mobility</b> .....	2803
<i>Salman Durrani and Marek E. Bialkowski</i>	
<b>Impact of the Pilot Signal Per Beam on the Ideal Number of Beams and Capacity</b>	
<b>Gain of Switched Beam Forming for WCDMA</b> .....	2808
<i>Luis Guilherme U. Garcia, Mangesh A. Ingale, Per-Henrik Michaelsen, Klaus I. Pedersen and Preben E. Mogensen</i>	
<b>A Novel Beam-space Inter-Bit Correlation 2D Rake Receiver for DS-CDMA Communication System</b> .....	2813
<i>Chunru Wan and Anmin Kong</i>	

---

**PROPAGATION 4**

<b>Validity of the Kronecker Model for MIMO Correlated Channels</b> .....	2818
<i>Claude Oestges</i>	
<b>Model Selection and Estimation for Lognormal Sums in Pearson's Framework</b> .....	2823
<i>Q. T. Zhang and S. H. Song</i>	
<b>Least Squares Quadratic (LSQ) Approximation to Lognormal Sum Distributions</b> .....	2828
<i>Lian Zhao and Jiu Ding</i>	
<b>A Stochastic MIMO Model Utilising Spatial Dimensionality and Modes</b> .....	2833
<i>Glenn Dickins, Terence Betlehem and Leif Hanlen</i>	
<b>Average Level Crossing Rates and Average Fade Durations of Multi-Branch</b>	
<b>Selection Diversity Over Dependent Weibull Fading Channels</b> .....	2838
<i>Yawgeng A. Chau and Karl Yung-Ta Huang</i>	
<b>Shadow Fading Revisited</b> .....	2843
<i>Jari Salo, Lasse Vuokko, Hassan M. El-Sallabi and Pertti Vainikainen</i>	

---

**MULTIPLE ANTENNAS & MIMO 2**

<b>An Enhanced Space-Time Equalizer for MIMO Multi-Code CDMA Systems</b> .....	2848
<i>Byoung-Hoon Kim, Xiaoxia Zhang and Manuel Flury</i>	
<b>Measurement of Time-Varying MIMO Channel for Performance Analysis of Closed-Loop Transmission</b> .....	2854
<i>Kei Mizutani, Kei Sakaguchi, Jun-ichi Takada and Kiyomichi Araki</i>	
<b>Personal Area Networks with Line-of-Sight MIMO Operation</b> .....	2859
<i>Dries Neiryneck, Chris Williams, Andrew Nix and Mark Beach</i>	
<b>A Simple Adaptive Channel Estimation Scheme for Multiple Antenna OFDM Systems</b> .....	2863
<i>Yen-Hsien Lee, Yung-Fang Chen and Po-Ting Hwang</i>	
<b>Performance Analysis of MIMO-OFDM Systems Using Indoor Wideband MIMO</b>	
<b>Channel Measurement Data</b> .....	2868
<i>Gia Khanh Tran, Nguyen Dung Dao, Kei Sakaguchi, Kiyomichi Araki, Hiroshi Iwai, Tsutomu Sakata and Koichi Ogawa</i>	
<b>Multisuser MIMO-OFDM with Adaptive Antenna and Subcarrier Allocation</b> .....	2873
<i>Yang Hu, Changchuan Yin and Guangxin Yue</i>	

---

**PROPAGATION 5**

<b>Modelling the General Dependency Between Directions of Arrival and Departure</b>	
<b>for an Indoor MIMO Channel</b> .....	2878
<i>C. M. Tan, C. M. Chin, M. L. Sim and M. A. Beach</i>	
<b>Wave Propagation Inside and Around Vehicles in Dynamic Time Variant Scenarios</b> .....	2883
<i>René Wahl, Michael Layh and Thomas F. Eibert</i>	
<b>Effect of Bandwidth and Antenna Directivity on the Range Estimation Accuracy</b>	
<b>in a Multipath Environment</b> .....	2887
<i>Zunnoor Tarique, Wasim Q. Malik and David J. Edwards</i>	
<b>A Space-Time Channel Simulator Using Angular Power Distributions</b> .....	2891
<i>Terence Betlehem and Thushara Abhayapala</i>	
<b>Comparison and Evaluation of ITU-R Recommendation P.1546 Versions</b> .....	2896
<i>Erik Östlin, Hajime Suzuki and Hans-Jürgen Zepernick</i>	
<b>Path Loss Models for Air-to-Ground Radio Channels in Urban Environments</b> .....	2901
<i>Qixing Feng, Joe McGeehan, Eustace K. Tameh and Andrew R. Nix</i>	

---

**ANTENNAS AND PROPAGATION POSTERS**

<b>On Spectral Efficiency in Spatially Clustered MIMO Radio Channels</b> .....	2906
<i>Juha Ylitalo</i>	
<b>Path Loss Prediction Formula for Urban and Suburban Areas for 4G Systems</b> .....	2911
<i>Koshiro Kitao and Shinichi Ichitsubo</i>	
<b>Wideband Spatial Channel Model for MIMO Systems at 5 GHz in Indoor and Outdoor Environments</b> .....	2916
<i>Hassan El-Sallabi, Daniel S. Baum, Per Zetterberg, Pekka Kyösti, Terhi Rautiainen and Christian Schneider</i>	

<b>Measured Capacity Evaluation of Indoor Office MIMO Systems Using Receive Antenna Selection</b> .....	2922
<i>Yuuta Nakaya, Atsushi Honda, Ichirou Ida, Shinsuke Hara and Yasuyuki Oishi</i>	
<b>Transmit Antenna Selection for Linear Dispersion Codes Based on Linear Receiver</b> .....	2927
<i>Dan Deng, Ming Zhao and Jinkang Zhu</i>	
<b>Propagation Characteristics of Distributed Transmission with Two Synchronized Transmitters</b> .....	2932
<i>Shigang Tang, Changyong Pan, Ke Gong and Zhixing Yang</i>	
<b>A Novel MIMO-STBC Scheme for Inter-Vehicle Communications at Intersection</b> .....	2937
<i>Kenji Ito, Nobuo Itoh, Katsushi Sanda and Yoshio Karasawa</i>	
<b>A Dual Least-Square Approach of Tuning Optimal Propagation Model for Existing 3G Radio Network</b> .....	2942
<i>Y. H. Chen and K. L. Hsieh</i>	
<b>Study for Various Array Antenna Assisted Doppler Spread Compensator with MRC Diversity of ISDB-T Receiver</b> .....	2947
<i>Young Cheol Yu, Minoru Okada and Heiichi Yamamoto</i>	
<b>Effect of Mobile Motion on the Temporal Characteristics of the Channel</b> .....	2952
<i>Mohammed T. Simsim, Noor M. Khan, Rodica Ramer and Predrag B. Rapajic</i>	

---

## SMART ANTENNAS 2

<b>Direction of Arrival Detection System for Radio Surveillance: Frequency Spectrum Analysis of CDMA and Jamming Waves</b> .....	2957
<i>Koichi Ichige, Mitsuharu Imai, Hiroyuki Arai, Masayuki Nakano and Masafumi Hirono</i>	
<b>System Performance of Fixed Beams with S-CPICH as a Phase Reference in WCDMA</b> .....	2962
<i>Afif Osseiran, Andrew Logothetis and Maurizio Molteni</i>	
<b>A Matrix Channel Model for Transmit and Receive Smart Antennas Systems</b> .....	2967
<i>Emanuela Falletti and Fabrizio Sellone</i>	
<b>A Novel Blind Space-Time Multiuser Detector for DS-CDMA Communication System</b> .....	2972
<i>Chunru Wan and Anmin Kong</i>	
<b>Joint DOA-Frequency Offset Estimation and Data Detection in Uplink MIMO-OFDM Networks with SDMA Techniques</b> .....	2977
<i>Kuo-Hsiung Wu, Wen-Hsien Fang and Jiunn-Tsair Chen</i>	

---

## CHANNEL ESTIMATION 3

<b>A Portable Real-Time Lane Departure Warning System Based on Embedded Calculating Technique</b> .....	2982
<i>Pei-Yung Hsiao and Chun-Wei Yeh</i>	
<b>Communications Based Positive Train Control Systems Architecture in the USA</b> .....	2987
<i>Mark Hartong, Rajni Goel and Duminda Wijesekera</i>	
<b>Hybrid Navigation Guidance for Intelligent Mobiles</b> .....	2992
<i>R. Vázquez-Martín, E. J. Pérez, C. Urdiales, J. C. del Toro and F. Sandoval</i>	
<b>On the Effectiveness of a GPRS Based Intelligent Transportation System in a Realistic Scenario</b> .....	2997
<i>Barbara M. Masini, Luca Zuliani and Oreste Andrisano</i>	
<b>Simulation of Thermopile IR-Sensors for Automotive Safety Applications</b> .....	3002
<i>Dirk Linzmeier, Andreas Köestler, Moheb Mekhaïel and Klaus C. J. Dietmayer</i>	
<b>A Sensor Fusion Approach to Estimate Clamp Force in Brake-by-Wire Systems</b> .....	3007
<i>S. Saric, A. Bab-Hadiashar and R. Hoseinnezhad</i>	

---

## MOBILE APPLICATIONS & SECURITY POSTERS; TRANSPORTATION SYSTEMS POSTERS

<b>Intelligent Vehicle Mobility Modeling Based on a Sub-Optimal Path Finding Method</b> .....	3012
<i>Amir Reza Momen, Ali Sheikh Hassani, Alireza Mirzaee and Paeiz Azmi</i>	
<b>Affordable X-by-Wire Technology Based on an Innovative, Scalable E/E Platform-Concept</b> .....	3016
<i>M. Armbruster, E. Zimmer, M. Lehmann, R. Reichel, E. Sieglin, G. Spiegelberg and A. Sulzmann</i>	
<b>Power Compensator Using Lithium-Ion Battery for DC Railway and Its Simulation by EMTP</b> .....	3021
<i>Naoto Nagaoka, Haruki Oue, Masayuki Sadakiyo, Nobutaka Mori, Akihiro Ametani, Shigeki Umeda and Jun Ishii</i>	
<b>Improvements in Railway Communication via GSM-R</b> .....	3026
<i>Kira Kastell, Steffen Bug, Alexey Nazarov and Rolf Jakoby</i>	