

2009 6th International Symposium on Wireless Communication Systems

(ISWCS 2009)

**Siena, Italy
7 – 10 September 2009**



IEEE Catalog Number: CFP09570-PRT
ISBN: 978-1-4244-3583-8

TABLE OF CONTENTS

WSN1: WIRELESS SENSOR NETWORKS 1

Ultra-Wide Band Sensor Networks for Tracking Point Scatterers or Relays	1
<i>Luca Reggiani, Mats Rydstrom, Gianluigi Tiberi, Erik G. Strom, Agostino Monorchio</i>	
On Connectivity Analysis of Smart Antenna Capable Wireless Sensor Networks.....	6
<i>Adnan Kavak, Kerem Kucuk</i>	
Solar Powered Sensor Network Design and Experimentation	11
<i>Daniela Kruger, Carsten Buschmann, Stefan Fischer</i>	

MIMO1: MIMO 1

Joint Training Interval Length and Power Allocation Optimization for MIMO Flat Fading Channels.....	16
<i>Imed Hadj-Kacem, Noura Sellami, Inbar Fijalkow, Aline Roumy</i>	
Polarization Rotation Evaluation for Macrocell MIMO Channel.....	21
<i>Lei Jiang, Lars Thiele, Volker Jungnickel</i>	
Linear Precoding for Mutual Information Maximization in MIMO Systems	26
<i>Meritxell Lamarca</i>	
An Error Propagation Prevention Method for MIMO-OFDM RLS-DDCE-Algorithms.....	31
<i>Patric Beinschob, Matthias Lieberei, Udo Zolzer</i>	

RFID: RFID NETWORKS

A Secure and Efficient Authentication Protocol for Passive RFID Tags	36
<i>Constantinos Kolias, Vasilis Kolias, Georgios Kambourakis</i>	
Tag Movement Direction Estimation Methods in an RFID Gate System	41
<i>Yoshinori Oikawa</i>	
Possible Configurations and Geometries of Long Range HF RFID Antenna Gates	46
<i>Giuliano Benelli, Stefano Parrino, Alessandro Pozzebon</i>	

RES1: RADIO RESOURCE MANAGEMENT 1

Error Rate of Low Duty DS-IR Over Selective Channels	51
<i>Lorenzo Piazza</i>	
Power Allocation for Social Benefit Through Price-Taking Behaviour on a CDMA Reverse Link Shared by Energy-Constrained and Energy-Sufficient Data Terminals.....	56
<i>Virgilio Rodriguez, Friedrich Jondral, Rudolf Mathar</i>	
A Frame-Level Timing Acquisition Scheme of Ultra-Wideband Signals Using Multi-Templates.....	61
<i>Wei Xu, Jiaxiang Zhao, Dong Wang</i>	
Channel Partitioning and Relay Placement in Multi-Hop Cellular Networks	66
<i>Sultan F. Meko, Prasanna Chaporkar</i>	

WMN: WIRELESS MESH NETWORKS

Routing Protocols for Mesh Networks with Mobility Support	71
<i>Massimo Reineri, Claudio Casetti, Carla-Fabiana Chiasserini</i>	
Wireless Sensor Network Wormhole Avoidance Using Disturbance-Based Routing Schemes.....	76
<i>James Harbin, Paul D. Mitchell, Dave Pearce</i>	
Dynamic Association in IEEE 802.11 Based Wireless Mesh Networks.....	81
<i>Hui Wang, Wai-Choong Wong, Wee-Seng Soh, Mehul Motani</i>	

MIMO2: MIMO 2

On the Decoding of Single Delay STTC Using Filter Bank Based Multicarrier Modulation	86
<i>C. Lele, Didier Le Ruyet, R. Zakaria</i>	
Codebook Design for Communication in Spread and Nonspread Space-Time Block Codes-Based Systems	91
<i>Marko Beko, Joao Xavier, Victor Barroso</i>	
Preamble-Based SNR Estimation Algorithm for Wireless MIMO OFDM Systems	96
<i>Milan Zivkovic, Rudolf Mathar</i>	

COG: COGNITIVE RADIO

Resource Allocation of Noncooperative Multi-Cell for Cognitive Radio Networks	101
<i>Haijian Zhang, Didier Le Ruyet, Daniel Roviras, Hong Sun</i>	
Resource Planning in Cognitive Radio Networks	106
<i>Derya Cavdar, H. Birkan Yilmaz, Tuna Tugcu, Fatih Alagoz</i>	
Preliminary Experimental Results on the Spectrum Sensing Performances for UWB-Cognitive Radios for Detecting IEEE 802.11n Systems	111
<i>Sithamparanathan Kandeepan, Gianmarco Baldini, Radoslaw Piesiewicz</i>	

RES2: RADIO RESOURCE MANAGEMENT 2

On the Effective Adaptive Modulation Polices for Non-Orthogonal Multicarrier Systems	116
<i>Adrian Kliks, Hanna Bogucka, Ivan Stupia</i>	
Achievable Rates in the SIMO-Uplink/MISO-Downlink of an FDD System with Imperfect CSI	121
<i>Mario Castaneda, Anup Chathoth, Josef A. Nossek</i>	
Effective Spectral Efficiency for Adaptive QAM with Diversity and Pilot Assisted Channel Estimation	126
<i>Laura Toni, Andrea Conti, Flavio Zabini, Oreste Andrisano</i>	
Optimization of Link Adaptation and HARQ Schemes for Multicast in High Speed Cellular Networks	131
<i>Neila El Heni, Xavier Lagrange, Patrick Maille</i>	

WSN2: WIRELESS SENSOR NETWORKS 2

An Energy Efficient Target Tracking Scheme for Distributed Wireless Sensor Networks	136
<i>Hadi Jamali Rad, Bahman Abolhassani, Mohammad Abdizadeh</i>	
Performance Evaluation of Intermittent Receiver-Driven Data Transmission on Wireless Sensor Networks	141
<i>Daichi Kominami, Masashi Sugano, Masayuki Murata, Takaaki Hatauchi, Yoshikazu Fukuyama</i>	
Analytical Model of the LPL with Wake up After Transmissions MAC Protocol for WSNs	146
<i>Cristina Cano, Boris Bellalta, Jaume Barcelo, Miquel Oliver, Anna Sfairopoulou</i>	

MIMO-QOS: MIMO – QUALITY OF SERVICE

Look-Ahead Sphere Decoding: Algorithm and Performance Evaluation	151
<i>Micaela Troglia Gamba, Guido Masera</i>	
Quasi-Convex Designs of Max-Min Linear BC Precoding with Outage QoS Constraints	156
<i>M. Botros Shenouda, L. Lampe</i>	
How Many Users Should Inform the BS About Their Channel Information?	161
<i>Umer Salim, Dirk Slock</i>	

QOS: QUALITY OF SERVICE

Autocorrelation Analysis for Reduced-Reference Mobile Video Quality Assessment	166
<i>Feng Wang, Hans-Jurgen Zepernick</i>	
A Cross-Layer Architecture for Service Differentiation in Multi-Channel Multi-Radio Wireless Mesh Networks	171
<i>Luciano Bononi, Marco Di Felice, Antonella Molinaro, Sara Pizzi</i>	

User Satisfaction Based CRRM Policy for Heterogeneous Wireless Networks	176
<i>Juan Jesus Gonzalez Delicado, Javier Gozalvez</i>	

RES3: RADIO RESOURCE MANAGEMENT 3

A Probability Based Vertical Handover Approach to Prevent Ping-Pong Effect	181
<i>Gabriele Tamea, Anna Maria Vegni, Tiziano Inzerilli, Roberto Cusani</i>	
On Two Cross-Layer Assisted Resource Allocation Schemes in Multiuser Multicarrier Systems	186
<i>Qing Bai, Josef A. Nossek</i>	
Multipolling and OFDMA Reservation Protocol for IEEE 802.11 Networks	191
<i>David Perez, Jose Luis Valenzuela, Javier Villares</i>	
Linear Modeling and Performance Evaluation of Resource Allocation and User Scheduling for LTE-Like OFDMA Networks	196
<i>Antonis G. Gotsis, Dimitris Komnakos, Philip Constantinou</i>	
A Study on the Statistical Properties of Double Hoyt Fading Channels	201
<i>Nazih Hajri, Neji Youssef, Matthias Patzold</i>	

COD1: CODING, MODULATION & EQUALIZATION 1

Ov-OFDM: A Reduced PAPR and Cyclic Prefix Free Multicarrier Transmission System	206
<i>Klaus Hueske, Jorgen Gotze</i>	
Synchronization in OFDM Systems Based on a Multi-Periodic Preamble	211
<i>Malte Schellmann</i>	
Seed Graph Expansion for Construction of Structured LDPC Codes	216
<i>Wojciech Sulek</i>	
Bounds on Network Coding and Multi-Rate Diversity Gain in Multicast Wireless Applications	221
<i>Luiz Filipe M. Vieira, Mario Gerla, Archan Misra</i>	

MANET1: MOBILE AD HOC NETWORKS 1

Cross-Layer Architecture for TCP Splitting in the Return Channel Over Satellite Networks	225
<i>Elizabeth Rendon-Morales, Jorge Mata-Diaz, Juanjo Alins, Jose L. Munoz, Oscar Esparza</i>	
Coarse Time- and Frequency Synchronization Applied in a Mobile WiMAX System	230
<i>Tero Hurnanen, Jussi Poikonen, Jarkko Paavola</i>	
A Testbed for Emulation of MANETs in Hostile Scenarios	234
<i>Marco Pratesi, Andrea Colarieti, Fortunato Santucci, Andrea Di Cola, Sebastiano Schillaci</i>	

HYBRID: HYBRID WIRELESS COMMUNICATION

Cross-Ambiguity Function of Weighted Pulse Trains with Oppermann Sequences	239
<i>Momin Jamil, Hans-Jurgen Zepernick, Mats I. Pettersson</i>	
Some Corrections and New Results from a Scheme to Improve TCP Over Wireless Networks	244
<i>Lucas D.P. Mendes, Jose M.C. Brito</i>	
Hybrid, Optical and Wireless Near-Gigabit Communications System	249
<i>L. Rakotondrainibe, Y. Kokar, G. Zaharia, G. El Zein, E. Tanguy, H. Li, B. Charbonnier</i>	

WIMAX: WIMAX

Fair Traffic Scheduling for WiMAX Systems	254
<i>Alberto Bestetti, Giovanni Giambene, Snezana Hadzic</i>	
A Joint Utility-Token Bucket Packet Scheduling Algorithm for IEEE 802.16e WiMAX Networks	259
<i>Alberto Nascimento, Atilio Gameiro, Jonathan Rodriguez</i>	
Performance Analysis of WiMax Systems in the Presence of MB-OFDM UWB Interference	264
<i>Eduardo Cano, Alberto Rabbachin, Joaquim Fortuny</i>	
On the WiMAX Robustness Against Interfering Signals in Emergency Marine Scenario	269
<i>Rosario G. Garroppo, Stefano Giordano, Davide Iacono, Alessandro Cignoni, Matteo Falzarano</i>	

SPECIAL SESSION: TRANSMISSION OF CORRELATED SOURCES IN DISTRIBUTED RADIO SYSTEMS: THEORY AND APPLICATIONS

Joint Channel Decoding with Feedback Power Control in Sensor Networks with Correlated Sources	274
<i>Andrea Abrardo, Gianluigi Ferrari, Marco Martalo, Fabio Perna</i>	
Analog Distributed Source-Channel Coding Using Sinusoids	279
<i>Johannes Karlsson, Mikael Skoglund</i>	
Practical Source-Network Decoding	283
<i>Gerhard Maierbacher, Joao Barros, Muriel Medard</i>	
Distributed Analog Linear Coding of Correlated Gaussian Sources over Multiple Access Channels	288
<i>Inaki Esnaola, Javier Garcia-Frias</i>	

MANET2: MOBILE AD HOC NETWORKS 2

A User-Centric Mobility Framework for Multimedia Interactive Applications	293
<i>Raffaele Bolla, Riccardo Rapuzzi, Matteo Repetto</i>	
Optimising Transmission Path Selection in SCTP Based Wireless Networking	298
<i>Martin Hynes, Liam Kilmartin</i>	
On the Effectiveness of IEEE 802.11e Implementations in Real Hardware	303
<i>Raffaele Bolla, Riccardo Rapuzzi, Matteo Repetto</i>	

COD2: CODING, MODULATION & EQUALIZATION 2

Joint Power Allocation and Interference Mitigation Techniques for Cooperative Spread Spectrum Systems with Multiple Relays	308
<i>R.C. de Lamare</i>	
A Distributed Opportunistic Scheduling Scheme for Wireless Network Coding	313
<i>Athanasios Gkelias, Kin K. Leung</i>	
Multilayer Space-Time Error Correcting Codes	318
<i>Mohamad Sayed Hassan, Karine Amis</i>	
Sampling Jitter Estimation and Mitigation in Direct RF Sub-Sampling Receiver Architecture	323
<i>Ville Syrjala, Mikko Valkama</i>	

ARCH1: NETWORK ARCHITECTURE AND SERVICES 1

Meteorology Using Microwaves Links: A Comparative Study	328
<i>R. Ruiz Blazquez, Emmanuelle Vivier, Balwant Godara</i>	
An Adaptive Location Management Scheme for Mobile Broadband Cellular Systems	333
<i>Maria Canales, Jose Ramon Gallego, Angela Hernandez-Solana, Antonio Valdovinos</i>	
Multi-Criteria Dynamic Access Selection in Heterogeneous Wireless Networks	338
<i>Ikram Smaoui, Faouzi Zarai, Ridha Bouallegue, Lotfi Kamoun</i>	

POSTER 1

Adaptive Linear Interference Suppression Based on Block Conjugate Gradient Method in Frequency Domain for DS-UWB Systems	343
<i>Sheng Li, R.C. de Lamare</i>	
Perceptual-based Quality Assessment of Error Protection Schemes for Wireless JPEG2000	348
<i>Muhammad Imran Iqbal, Hans-Jurgen Zepernick, Ulrich Engelke</i>	
Multi-Level Threshold Opportunistic Transmission in MU-MIMO Downlink with Reduced Feedback	353
<i>Zhao Li, Jiawei Yang, Junliang Yao</i>	
A Resource Management Strategy for Interconnected WLAN and UMTS Networks Based on User Mobility, Call Renegotiation, and Call Reallocation	358
<i>Hermes Irineu Del Monego, Jose Manuel Oliveira, Manuel Ricardo</i>	
Novel Results on Adaptive UMTS Outer Block Interleaving Using SOVA Turbo Decoder	363
<i>Costas Chaikalis, Nicholas S. Samaras</i>	
Pitfalls in Energy Consumption Evaluation Studies	368
<i>Kostas Pentikousis</i>	

A Novel Spectrum Sensing Method Using Multi-Antennas Without Channel State Information	373
<i>AbdulRahman Al-Abbasi, Takeo Fujii</i>	
Performance Analysis of Outdoor Localization Systems Based on RSS Fingerprinting	378
<i>Azin Arya, Philippe Godlewski, Philippe Melle</i>	
Multimedia Session Continuity with Context-Aware Capability in IMS-Based Network.....	383
<i>Huu Thanh Nguyen, Hang Le Thi, Quynh Thu Ngo, Van Yem Vu, Xuan Dung Nguyen</i>	
MOGAMESH: A Multi-Objective Algorithm for Node Placement in Wireless Mesh Networks Based on Genetic Algorithms.....	388
<i>Giuseppe De Marco</i>	
Achievable Rate of Dual-Hop OFDM Relay System with Non-Regenerative Relay Without FFT Process	393
<i>Shuhei Haraguchi, Masato Saito, Chandra R.N. Athaudage, Minoru Okada</i>	
Low Power Medium Access Control for Body-Coupled Communication Networks	398
<i>Steven Corroy, Heribert Baldus</i>	
Joint Power Management and Beamforming for Base Stations in Cognitive Radio Systems	403
<i>Xiao Fu, Jun Wang, Shaoqian Li</i>	
A Continuous-Space Analytical Approach for Relay Node Placement in Hybrid Cellular and Ad Hoc Networks.....	408
<i>Ziaul Haq Abbas, Frank Y. Li</i>	
Vehicle-Roadside-Vehicle Relay Communication Network Employing Multiple Frequencies and Routing Function	413
<i>Yasushi Yamao, Kazuya Minato</i>	
Vertical Handover Among Broadcast Networks.....	418
<i>Gabriele Tamea, Tiziano Inzerilli, Paolo Rea, Roberto Cusani</i>	
Sigma Point Kalman Filters for Multipath Channel Estimation in CDMA Networks	423
<i>Zahid Ali, Mohammed A. Deriche, Mohamed Adnan Landolsi</i>	
Optimized Orphan Algorithm for IEEE 802.15.4 Networks.....	428
<i>Antonio-Javier Garcia-Sanchez, Felipe Garcia-Sanchez, Joan Garcia-Haro</i>	
A Robust and Redundant Key Management for Mobile Ad Hoc Networks.....	433
<i>Hisham Dahshan, James Irvine</i>	
Adaptive Resource Allocation for SDMA-OFDMA Systems with Genetic Algorithm	438
<i>Berna Ozbek, Didier Le Ruyet</i>	
Out-of-Band Distortion Analysis of Envelope Tracking Technique for Power Amplifiers	443
<i>Yasunori Suzuki, Shoichi Narahashi, Toshio Nojima</i>	

MIMO-APP: MIMO – APPLICATIONS

Energy Efficient Cooperative MIMO with Idle Nodes in Cluster Based Wireless Sensor Networks	448
<i>Li Fei, Qiang Gao, Xu Zhang</i>	
System Level Analysis of Vertical Sectorization for 3GPP LTE.....	453
<i>Osman N.C. Yilmaz, Seppo Hamalainen, Jyri Hamalainen</i>	
On Multiuser MIMO Capacity Benefits in Air-to-Ground Communication for Air Traffic Management.....	458
<i>Jawad Rasool, Geir E. Oien, Jan E. Haakegaard, Tor Andre Myrvoll</i>	

ACC1: WIRELESS ACCESS TECHNIQUES 1

Omni-Directional Characteristics over Frequency Range for UWB of Modified Planar Antenna with an Elliptical Element on the Dielectric Substrate	463
<i>Toshio Wakabayashi, Hiroyasu Matsui</i>	
A Channel Allocation Algorithm for OSA-Enabled IEEE 802.11 WLANs	468
<i>F. Novillo, M. Churchman, R. Ferrus, R. Agusti</i>	
Adaptive Set-Membership Reduced-Rank Interference Suppression for DS-UWB Systems	473
<i>Patrick Clarke, R.C. de Lamare</i>	
On IEEE EDCA 802.11n.....	478
<i>Roger Pierre Fabris Hoefel</i>	

COD3: CODING, MODULATION & EQUALIZATION 3

Loading Techniques for OFDM Systems with Nonlinear Distortion Effects	483
<i>Teresa Araujo, Rui Dinis</i>	
Distributed Interleave-Division Multiplexing Space-Time Codes for Coded Relay Networks	488
<i>Petra Weitkemper, Dirk Wubben, Karl-Dirk Kammeyer</i>	
Non-Binary Split LDPC Codes Defined Over Finite Groups	493
<i>Bilal Shams, David Declercq, Vincent Heinrich</i>	
Filter Bank Transmission Systems: Analysis with Phase Noise	498
<i>Nicola Moret, Andrea M. Tonello</i>	
Optimized Signal Mappings for BICM-ID Systems over Fast Fading MIMO Channels	502
<i>Muammar A. Alfasi, Yousef R. Shayan</i>	

WSN3: WIRELESS SENSOR NETWORKS 3

Performance Monitoring and Control in Contention-Based Wireless Sensor Networks	507
<i>Thomas Lindh, Ibrahim Orhan</i>	
Application-Specific Node Clustering of IR-UWB Sensor Networks with Two Classes of Nodes	512
<i>Daniel Bielefeld, Gernot Fabeck, Rudolf Mathar</i>	
An Optimal Network Dimensioning and Initial Energy Assignment Minimizing the Monetary Cost of a Heterogeneous WSN	517
<i>Cuneyt Sevgi, Altan Kocycigit</i>	
On the Steady State in Multiuser Multiband IR-UWB Without NBI Detection	522
<i>Hessam Moussavinik, Sang-Seon Byun, Ilanko Balasingham</i>	

POSTER 2

Channel Equalization in Narrowband Mobile Peer-to-Peer Networks Using Superimposed Pilots	526
<i>Jukka Talvitie, Toni Levanen, Markku Renfors</i>	
A Study of Cooperative Communication with Consideration of Power Loss Caused by Relay Abortion	531
<i>Mayumi Suzuki, Osamu Takyu, Yohtaro Umeda</i>	
Cooperative Space-Time Codes with Opportunistic Network Coding with Increasing Numbers of Nodes	536
<i>Gordhan Das Menghwar, Asif Ali Shah, Christoph F. Mecklenbrauker</i>	
Optimizing System Capacity and Application Delays in WiMAX Networks	540
<i>Iwan Adhichandra, Rosario G. Garroppo, Stefano Giordano</i>	
Empirical Analysis of UMTS Propagation Channel (2127.6 MHz) for Case of Stationary Receiver	545
<i>Irena Jankovic, Aleksandar Neskovic, Natasa Neskovic, George Paunovic</i>	
Fully Software OFDM Modulation in Vehicular, Highly Time-Variant Channels --- An Implemented Technology and its Results	550
<i>Vincenzo Pellegrini, Marco Luise</i>	
Comparative Study of Fade Margins with Hard and Soft Handoff in CDMA Based Microcellular Systems	555
<i>Jose Ernesto Rojas-Lima</i>	
Dynamic On-Body Channel and its ARQ Error Control	560
<i>Bin Zhen, Takahiro Aoyagi, Ryuji Kohno</i>	
Adaptive Location Division Multiple Access for Reliable Safety Message Dissemination in VANETs	565
<i>Yong Hoon Choi, Raj Rajkumar, Priyantha Mudalige, Fan Bai</i>	
Long Life Monitoring of Historical Monuments via Wireless Sensors Network	570
<i>D. Abruzzese, M. Angelaccio, B. Buttarazzi, R. Giuliano, L. Miccoli, A. Vari</i>	
Design of Adaptive Multi-Branch SIC Receivers for MIMO Spatial Multiplexing Systems	575
<i>Rui Fa, R.C. de Lamare</i>	
Reducing the Signalling Overhead for Wireless VoIP Transmission Using Weighted Prioritisation	580
<i>Milos Tesanovic, Tim Mouldsley, Matthew Baker</i>	
Evaluation of Wireless Channel Quality for an Ad Hoc Network in the Sky, SKYMESH	585
<i>Tomoaki Umeki, Hiraku Okada, Kenichi Mase</i>	
UMTS900 Deployment with Different Call Handling Strategies	590
<i>Muhammad Usman Sheikh, Jukka Lempinen</i>	
Digital Cinema Delivery Using Frequency Multiplexed DVB-T Signals	595
<i>Giuseppe Baruffa, Paolo Micanti, Fabrizio Frescura, Saverio Cacopardi</i>	

Cell Outage Management in LTE Networks	600
<i>M. Amirijoo, L. Jorgueski, T. Kurner, R. Litjens, M. Neuland, L.C. Schmelz, U. Turke</i>	
Precoded Multiuser Distributed MIMO OFDM Systems	605
<i>Reza Holakouei, Adao Silva, Atilio Gameiro</i>	
Performance Analysis of Binary DPSK Modulation Schemes Over Hoyt Fading Channels.....	609
<i>Nazih Hajri, Neji Youssef, Matthias Patzold</i>	

MIMO3: MIMO 3

Multistage MIMO Receivers Based on Multi-Branch Interference Cancellation for MIMO-CDMA Systems	614
<i>Yunlong Cai, R.C. de Lamare</i>	
Schnorr-Euchner Sphere Decoder with Statistical Pruning for MIMO Systems.....	619
<i>Junil Ahn, Heung-No Lee, Kiseon Kim</i>	
High-Rate Full-Diversity Space-Time Block Codes with Linear Receivers	624
<i>Ertugrul Basar, Umit Aygolu</i>	
A Novel Algorithm to Improve the Blind Receiver for Convolutional MIMO Systems	629
<i>Iman Habibi, Mohammad Ali Masnadi-Shirazi, Pegah Habibi-Ardekani</i>	
Multiple Antenna Relay-Assisted Schemes for the Uplink OFDM Based Systems	633
<i>Andreia Moco, Hugo Lima, Adao Silva, Atilio Gameiro</i>	

ACC2: WIRELESS ACCESS TECHNIQUES 2

Optimum Joint Detection Using Soft Decision Combined with Maximum Gradient Search.....	638
<i>Khalid Al Murrani</i>	
A Load Adaptive Subcarrier and Bit Allocation Algorithm for Non-Real Time Services in an OFDMA System.....	642
<i>Hossam Fattah, Hussein Alnuweiri</i>	
Full Interference Model in Wireless Sensor Network Simulation	647
<i>Hengguang Li, Paul D. Mitchell</i>	
Multi-Code SS-CSMA/CA for Cluster-Tree Wireless Ad Hoc Networks	652
<i>Naoto Kobatake, Satoru Takagishi, Yasushi Yamao</i>	
Simple, Zero-Feedback, Collaborative Beamforming for Emergency Radio	657
<i>Aggelos Bletsas, Andy Lippman, John N. Sahalos</i>	

COD 4: CODING, MODULATION & EQUALIZATION 4

A Tree-Search Algorithm for ML Decoding in Underdetermined MIMO Systems.....	662
<i>Gianmarco Romano, Francesco Palmieri, Pierluigi Salvo Rossi, Davide Mattera</i>	
Performance Analysis of Rotated PSK Over Nakagami-m Fading Channels	667
<i>Ahmet Yilmaz, Oguz Kucur</i>	
An Efficient Decoding Algorithm for Tailbiting Codes on Wireless Channels.....	672
<i>Jorge Ortin, Paloma Garcia, Fernando Gutierrez, Antonio Valdovinos</i>	
Efficient SER Measurement Method for OFDM Receivers with Nonlinear Distortion.....	677
<i>Lilia Smaoui, Amine Mezghani, Leonardo G. Baltar, Heinz Mellein, Josef A. Nossek</i>	
Symbol MAP Detection Aided with First Channel Estimate for TDMA Systems Over a Frequency Selective Channel	682
<i>Ines Kammoun, Mohamed Siala, Noura Sellami, Aline Roumy</i>	

ARCH2: NETWORK ARCHITECTURE AND SERVICES 2

Novel Cross-Layer Decoding Design for 'WBC Over DVB-H' Link Layer.....	687
<i>Zhanlin Ji, Ivan Ganchev, Mairtin O'Droma</i>	
Attractive Pricing Mechanism for Connection Sharing and Coverage Extension of Wireless Networks	691
<i>Pasquale Pace, Mariangela Mole, Gianluca Alois</i>	
Single Channel All Digital Direction Finding System	696
<i>Van Yem Vu, Huu Thanh Nguyen</i>	
Effects of Relay Position and Power Allocation in Space-Time Coded Cooperative Wireless Systems.....	700
<i>Luca Zuari, Andrea Conti, Velio Tralli</i>	
Author Index	