

**2011 2nd International Conference on
Wireless Communication, Vehicular
Technology, Information Theory and
Aerospace & Electronic Systems
Technology**

(Wireless VITAE 2011)

**Chennai, India
28 February – 3 March 2011**



IEEE Catalog Number: CFP1169G-PRT
ISBN: 978-1-4577-0786-5

TABLE OF CONTENTS

Feasibility Study of Filtering Algorithms for Low Cost WIRELESS PHYSIOLOGICAL MONITORING SYSTEM.....	1
<i>Utpal T. Pandya, Uday B. Desai</i>	
Performance of Super-Orthogonal Space-Time Trellis Codes over Nakagami Fading Channels	7
<i>Ilesanmi B. Oluwafemi, Stanley H. Mneney</i>	
Nonlinear Suppression Scheme Employing Transmit Power Control for MIMO-OFDM Systems	12
<i>Takuto Arai, Yunhan Wang, Naokuni Kamiya, Fumiaki Maehara</i>	
Foster Creative Engineers by PBL: a Case Study of Student Satellite Project (AAUSAT3) at Aalborg University in Denmark.....	17
<i>C. Zhou, J. D. Nielsen, A. Kolmos</i>	
High Quality Voice Calls on Mobile Communication Networks: A Better User Experience	22
<i>Kishore Babu, O. S. V. Tejaswi</i>	
Cyclostationary Analysis Method of Spectrum Sensing for Cognitive Radio.....	27
<i>V. Prithiviraj, B. Sarankuma, A. Kalaiyaran, P. Praveen Chandru, N. Nandakumar Singh</i>	
Super-Quasi-Orthogonal Space-Time BPSK Trellis Coded OFDM System for Four Transmit Antennas.....	32
<i>Ilesanmi B. Oluwafemi, Stanley H. Mneney</i>	
Efficacy of Multivariate Cryptosystems for DWSN.....	37
<i>Pradheep Kumar Singaravelu, Shekhar Verma</i>	
Dynamic Spectrum Access and Cognitive Radio	41
<i>P. S. M. Tripathi, Ashok Chandra, Ambuj Kumar, K. Sridhara</i>	
Covered CDMA Multi-User Writing on Spatially Divided Image.....	46
<i>Rengarajan Amirtharajan, John Bosco Balaguru Rayappan</i>	
Statistical Re-acquisition Method for GPS Receivers on Satellites in Low Earth Orbit.....	51
<i>Alex Aa, Birklykke, Yannick Le Moullec, Ramjee Prasad, Lars Alminde</i>	
Multi Time Period Spectrum Auction.....	56
<i>K. Sridhara, P. S. M. Tripathi, Ramjee Prasad</i>	
A Simulation Analysis of Flooding Attack in MANET using NS-3.....	60
<i>Alokparna Bandyopadhyay, Satyanarayana Vuppala, Prasenjit Choudhury</i>	
Steg-OFDM blend for highly Secure multi-user Communication	65
<i>Padmapriya Praveen Kumar, Rengarajan Amirtharajan, K. Thenmozhi, John Bosco Balaguru Rayappan</i>	
A Jamming Defending Data-Forwarding Scheme for Delay Sensitive Applications in WSN	70
<i>Amrita Ghosal, Subir Halder, B. C. Roy, Mobashir, Rajesh K. Saraogi, Sipra Dasbit</i>	
A Cooperative Internet of Things (IoT) for Rural Healthcare Monitoring and Control.....	75
<i>Vandana Milind Rohokane, Neeli Rashmi Prasad, Ramjee Prasad</i>	
Defending against Worm Hole Attacks in Multicast Routing Protocols for Mobile Ad hoc Networks	81
<i>E. A. Mary Anita, V. Thulasi Bai, E. L. Kiran Raj, B. Prabhu</i>	
Design of a Wireless Adapter for Multimedia Projectors	86
<i>Avinash Pura, C. V. Raghu</i>	
Proposed Embedded Security Framework for Internet of Things (IoT)	90
<i>S. Babar, A. Stango, N. Prasad, J. Sen, R. Prasad</i>	
Cognitive Radio: Emerging Trend of Next Generation Communication System.....	95
<i>Ashwini Dalvi, Pamu Kumar Swamy, B. B. Meshram</i>	
Mapping of Cognitive Radio As Intelligent Agent Architecture.....	100
<i>Irfan Siddavatm</i>	
Radio Spectrum Monitoring for Cognitive Radio	105
<i>P. S. M. Tripathi, Ashok Chandra</i>	
Evaluating the Impact of a PBL-course for First-year Engineering Students Learning Through PBI-projects	110
<i>Mette Mosgaard, Claus Monrad Spliid</i>	
Self-Optimized Radio Resource Management Techniques for LTE-A Local Area Deployments.....	116
<i>Claudio Stocchi, Nicola Marchetti, Neeli Rashmi Prasad</i>	
An Affine Projection Algorithm Based Transceiver Filter for MIMO Two-Way Relaying Scheme	121
<i>Arun Joy, Vijaykumar Chakka</i>	
Multiplayer Game for DDoS Attacks Resilience in Ad hoc Networks	125
<i>Antonis Michalas, Nikos Komninos, Neeli R. Prasad</i>	
A Miniaturized CPW-fed Rocket Shaped UWB Antenna for Wireless Applications	130
<i>Akkala Subbarao, S. Raghavan, P. Purna Sekhara Rao</i>	

Analysis of Serving Discipline Algorithms for Cellular Networks.....	134
<i>Kamil H. Suleiman, H. Anthony Chan, Mghele E. Dlodlo</i>	
Evolutionary Game Theory: An innovative Tool for Ad-hoc Networks Modeling Applied to Stem Cells Interaction in Bio-active Scaffolds	140
<i>A. Boni, C. Stallo, T. Rossi, M. Ruggieri, P. Di Nardo</i>	
Design and Simulation of Planar Minkowski Fractal Antennas.....	145
<i>S. Suganthi, K. S. Tharin, P. S. Sarankumar, S. Raghavan, D. Kumar</i>	
A Novel Compact CPW –fed Octagan Shaped Slot Antenna for WLAN Application.....	150
<i>P. Thiruvalar Selvan, S. Raghavan</i>	
An Analysis, Design and Precautionary Measure for Mobile Phone Accidents While Driving and Cost-Effective Fatalities	154
<i>H. Abdul Shabeer, R. S. D. Wahida Banu</i>	
HE-30 Aluminum Ruggedised EMI Enclosure for GPS based Vehicle Tracking System.....	160
<i>Shreenivas Jog, M. S. Sutaone, Vishweshwar Badawe</i>	
On the use of Aerospace Technologies to Design a Solar Thermodynamic System for Hydrogen Production.....	165
<i>C. Stall, M. De Sanctis, M. Ruggieri</i>	
A Review on Steer-By-Wire System using Fexray	170
<i>S. P. Manc, S. S. Sonavanc, P. P. Shingare</i>	
Peer Evaluation and Peer Review to Support PBL Teamwork	174
<i>E. De Graaff, G. Saunders-Smits</i>	
Problem Based Learning in Indian Engineering Education: Drivers and Challenges.....	179
<i>Vikas V. Shinde, Anette Kolmos</i>	
Simple Series From Formula of BER Performance for M-ary QAM/OFDM Signals with MRC Diversity Reception over Nonlinear Fading Channels.....	184
<i>Akihiro Yamakita, Akira Kamiyama, Yuichiro Goto, Fumiaki Maehara</i>	
Performance Degradation Due to Low Resolution ADC in IR-UWB Systems.....	189
<i>Sandeep Mukherjee, Ernestina Cianca, Mauro De Sanctis</i>	
Using Self Organizing Map in Wireless Sensor Network for Designing Energy Efficient Topologies.....	194
<i>Chiranjib Patra, Matangini Chattopadhyay, Parama Bhaumik, Anjan Guha Roy</i>	
Path Selection in Wireless Mobile Ad Hoc Network Using Fuzzy and Rough Set Theory	200
<i>P. Seethalakshmi, M. Gomathi, G. Rajendran</i>	
Increasing Performance of ODMRP by using Learning Automata	204
<i>Alireza Shams Shafiqi, Kamran Abdollahi</i>	
Automatic Vehicle Registration System for Tollbooths.....	209
<i>Kumar Rajeev Ranjan, Abhinav Sinha</i>	
A Novel High gain Monopole CPW antenna for WiMAX Applications	212
<i>V Dileep Reddy, S. Raghavan</i>	
A Modified Gossip Algorithm for Clustered Ad Hoc Networks	215
<i>Basak Oztas, Fatih Algoz</i>	
A Survey of Social Based Mobility Models for Ad hoc Networks	219
<i>Basak Oztas, Tolga Kurt, Emin Anarim</i>	
Design of LC-VCO for Low Power Narrowband Electronic Applications	224
<i>Dhrub Solanki, Rajeevan Chandel, Tafseer Alam, Atul Nishad</i>	
Analysis of Secure Fast Roaming Techniques with Coexistence of 802.1x.....	228
<i>S. Laxmaiah, T. Madhu, K. Lal Kishore</i>	
ICT: An Effective Tool for Quality of Life and Biotechnology	231
<i>C. Stallo, A. Boni, T. Rossi, M. Ruggieri, P. Dinardo, M. Lucente</i>	
IR-UWB Transceiver for Communications and Ranging beyond 60 GHz	237
<i>C. Stallo, S. Mukherjee, E. Cianca, T. Rossi, M. Ruggieri, F. Nunziante</i>	
Compact High Gain CPW- Fed Slot Antenna for WLAN/WiMAX Applications.....	243
<i>S. Karemulla, N. Gunavathi, S. Raghavan</i>	
Automated Voice based Home Navigation System for the Elderly and the Physically Challenged.....	248
<i>Rajesh Kannan Megalingam, Ramesh Nammily Nair, Sai Manoj Prakhyta</i>	
High Altitude Platform System(HAPS) and Co-existence with Fixed Satellite Service(FSS) in Frequency Range 5850-7075 MHz.....	253
<i>Masoud Mohebbi Nia, Tharek A. Rahman</i>	
RF Propagation Analysis for ZigBee Sensor Network using RSSI Measurements	259
<i>Roberto Maurizio Pellegrini, Samuela Persia, Diego Volponi, Giuseppe Marcone</i>	
Secure Neighbour Authentication In Wireless Sensor Networks	264
<i>J. Norman, P. Joseph</i>	

On Network Properties for Design of Virtual Overlays	268
<i>Rasmus H. Nielsen, Neeli R. Prasad, Ramjee Prasad, Shingo Ohmori</i>	
TV White Space Standardization and Regulation in Europe	273
<i>Markus Mueck, Dominique Noguet</i>	
A Novel Compact Antenna for Broadband MIMO	278
<i>Dinh Thanh Le, Yoshio Karasawa</i>	
CBDS: A Cooperative Bait Detection Scheme to Prevent Malicious Node for MANET Based on Hybrid Defense Architecture	283
<i>Jian-Ming Chang, Po-Chun Tsou, Han-Chieh Chao, Jiann-Liang Chen</i>	
Lossless Secure Transmission in Bluetooth Scatternet, Considering Device Mobility	288
<i>R. Debnath, B. C. Kundu, M. Pradhan, D. Pradhan</i>	
Opportunities for White Space Usage in Australia	293
<i>B. P. Freyens, M. Loney</i>	
Mutual Coupling Cancellation for Compact MIMO Antenna with 3 dB Hybrid	298
<i>Nobuo Nakajima, Tomoko Yamazaki, Wei Ni</i>	
Nanomaterials in Biomedical Applications	302
<i>Jesper Declaville Christiansen, Catalina-Gabriela Potarniche, Zina Vuluga, Aleksey Drozdov</i>	
A Farewell to Trust: An Approach to Confidentiality Control in the Cloud	307
<i>Martin Gilje Jaatun, Asmund Ahlmann Nyre, Stian Alapnes, Gansen Zhao</i>	
Simplified Configuration of Fading Emulator System for MIMO-OTA Testing	312
<i>Akira Kosako, Masahiro Shinozawa, Yoshio Karasawa</i>	
A Convergent Framework for QoS-Driven Social Media Content Delivery over Mobile Networks	317
<i>S. Mohan, N. Agarwal</i>	
Advances in Wireless Network Coding for IMT-Advanced & Beyond	324
<i>Afif Osseiran, Ming Xiao, Slimane Ben Slimane, Mikael Skoglund, Jawad Manssour</i>	
An Adaptive Neural Network Guided Random Block Length Based Cryptosystem for Online Wireless Communication (ANNRBLCC)	330
<i>J. K. Mandal, Arindam Sarkar</i>	
Discrete Fourier Transform based Multimedia Colour Image Authentication for Wireless Communication (DFTMCIAWC)	335
<i>Nabin Ghoshal, J. K. Mandal</i>	
Compressed Sensing in Spatial MIMO Channels	340
<i>Wei Lu, Yingzhuang Liu, Desheng Wang</i>	
Interference Management in Self-Organized Femtocell Networks: the BeFEMTO approach	345
<i>Mehdi Bennis, Lorenza Giupponi, Emilio Mino Diaz, Massinissa Lalam, Masood Maqbool, Emilio Calvanese Strinati, Antonio De Domenico, Matti Latva-Aho</i>	
Implementation of RSA Security Protocol for Sensor Network Security: Design and Network Lifetime Analysis	351
<i>Avijit Sahanaa, Iti Saha Misrab</i>	
Coverage Evaluation of 4 by 4 MIMO Base Station Antenna	356
<i>Y. Inoue, K. Cho</i>	
Towards Role Mining with Restricted User-Role Assignment	361
<i>M. Hingankar, S. Sural</i>	
A Novel Security Scheme for Wireless Adhoc Network	366
<i>Abhijit Das, Soumya Sankar Basu, Atal Chaudhuri</i>	
Advances in D2D Communications: Energy Efficient Service and Device Discovery Radio	370
<i>K. Doppler, C. B. Ribeiro, J. Knecht</i>	
LTE and HSPA for Fixed Wireless Broadband	376
<i>Anders Furuskär, Jing Rao, Mats Blomgren, Per Skillermark</i>	
TVWS regulation and QoS/MOS requirements	381
<i>Dominique Noguet, Rohit Datta, Per Hjalmar Lehne, Matthieu Gautier, Gerhard Fettweis</i>	
Securing Critical Infrastructure: A Semantically Enhanced Sensor Based Approach	386
<i>Mohammad M. R. Chowdhury, Josef Noll</i>	
Framework for Energy Efficiency Analysis of Wireless Networks (Invited Paper)	391
<i>Gunther Auer, Vito Giannini, Magnus Olsson, Manuel J. Gonzalez, Claude Dessel</i>	
Impairment Modeling for Joint Transmission CoMP	396
<i>Konstantinos Manolakis, Lars Thiele, Christian Oberli, Thomas Haustein, Volker Jungnickel</i>	
Energy aware data aggregation in Wireless Sensor Networks	401
<i>Jose Luis Zechinelli-Martini, Paolo Buccioli, Genoveva Vargas-Solar</i>	
FPGA based FFT Algorithm Implementation in WiMAX Communications System	406
<i>K. Harikrishna, T. Rama Rao</i>	

Microstrip-to-Substrate Integrated Waveguide Aperture Couplers	412
<i>Vladimir A. Labay, T. Rama Rao</i>	
Infoshare: Content, Design and System Independent Multimedia Signage Architecture	416
<i>Anusha Withana, Miyuru Dayaratna, Masa Inakage, Kazunori Sugiura</i>	
Performance Analysis of IP Multimedia Subsystem (IMS) Signaling in Heterogeneous Access Networks	422
<i>Shyam S. Wagle, Minesh Ade, Nikolaos Doulamis, M. Ghazanfar Ullah</i>	
Collaboration of P4P and IMS: Solution to P2P Challenges	427
<i>M. Ade, N. Doulamis, S. S. Wagle, M. G. Ullah</i>	
TeleHealth: Healthcare Technologies and TeleHealth Emergency (THE) System	432
<i>M. Ade, N. Doulamis, S. S. Wagle, M. G. Ullah</i>	
An Optimal Energy Efficient Cooperative Retransmission MAC Scheme in Wireless Networks	436
<i>Xin He, Frank Y. Li</i>	
A System-level Power Saving Approach for Cellular Networks with Microcells/Picocells	441
<i>Ziaul Haq Abbas, Frank Y. Li</i>	
Neuro-Fuzzy Controlled Induction Generator System	446
<i>S. N. Sabreen, M. Malleswaran</i>	
Personal Virtual Multimedia Library (PVML) in a Converged Network	451
<i>Karthikeyan Balaji Dhanapal, Arun Agrahara Somasundara, Sanjoy Paul</i>	
Regulartory Aspects and Opportunities of TV White Spaces in India	459
<i>P. Balamuralidhar</i>	
Security and Privacy in the Cloud A Long-Term View	463
<i>Vladimir A. Oleshchuk, Geir M. Køien</i>	
Towards a Mobile Solution for Predicting Illness in Type 1 Diabetes Mellitus Development of a Prediction Model for Detecting Risk of Illness in Type 1 Diabetes Prior to Symptom Onset	468
<i>Jonas N Lauritzena, Eirik Årsandb, Klaske Van Vuurdenc, Johan Gustav Bellikaa, Ole K Hejlesen, Gunnar Hartvigsena</i>	
Telerehabilitation Across Sectors: the Experiences of Chronic Obstructive Pulmonary Disease (COPD) Patients and Healthcare Professionals	473
<i>Birthe Dinesen, Ove Grann, Carl Nielsen, Ole Hejlesen, Egon Toft</i>	
Context-aware Reconfigurable Interoperability for Vertical Handover in Wireless Communications	477
<i>Mihai Gavrilescu, Valentin Andrei, Eduard C. Popovici, Tiberius P. Begani, Razvan Nastase, Octavian Fratu, Simona V. Halunga</i>	
Considerations over Implementing IEEE 802.21 on a Device Powered by a Mobile Operating System	482
<i>Valentin Andrei, Eduard C. Popovici, Octavian Fratu, Simona V. Halunga, Mihai Gavrilescu</i>	
IEEE Dynamic Spectrum Access Networks (DYSPAN) Standards Committee	487
<i>H. Harada, Y. D. Alemseged, O. Holland</i>	
Delivery of Ehealth and Einclusion Services for Elderly People with Mild Dementia	492
<i>Sofoklis Kyriazakos, Neeli Prasad</i>	
Cooperative Transmission Range Extension for Duty Cycle-Limited Wireless Sensor Networks	496
<i>Jin Woo Jung, Wensi Wang, Mary Ann Ingram</i>	
Demonstration of RIWCoS Platform for Future Heterogeneous Networks	501
<i>P. Latkoski, O. Ognenoski, V. Rakovic, V. Atanasovski, L. Gavrilovska</i>	
An Enabler of Interoperability in Heterogeneous Wireless Networks	506
<i>Oana-Elena Barbu, Octavian Fratu</i>	
Interoperability Procedures Between Access Technologies Using IEEE 802.21	511
<i>Alexandru Vulpe, Serban-Georgica Obreja, Octavian Fratu</i>	
Learning Effectiveness of Science Experiments through Cloud Multimedia Tutorials	516
<i>H-W Wang, J-S Ji, T-P Dong, C-M Chen, J-H Chang</i>	
How to Find an Optimal Threshold for SSB Algorithm	522
<i>Jian-Hong Wang, Yang-Sheng Chen, Yu-Shuang Wong, Hsing-Wen Wang, Der-Jiunn Deng</i>	
Governing Stem Cell Fate through Inert Materials	527
<i>Paolo Di Nardo, Marilena Minieri</i>	
Service Continuity Support in Self-Organizing IMS Networks	532
<i>Christian Makaya, Ashutosh Dutta, Subir Das, Dana Chee, F. Joe Lin, Satoshi Komorita, Hidetoshi Yokota</i>	
Cognitive Radio and the Frequency Resource Protocol (FRP)	537
<i>Torleiv Maseng, Magnus Skjegstad</i>	
RIWCoS: Possible Approach for the Reconfiguration of the Hybrid Wireless Access Networks	541
<i>Octavian Fratu, Anthony C. Boucouvalas, Liljana Gavrilovska, Ramjee Prasad</i>	
Mutual Information of Block-Faded MIMO Multiple Access Channels with Channel Estimation Error	546
<i>Emiliano Dall'Anese, Silvano Pupolin</i>	

Information Content in Reflected Global Navigation Satellite System Signals	551
<i>Per Hoeg, Anders Carlstrom</i>	
Towards a Layer-less Network Architecture - a Case from Wireless Sensor Networks.....	556
<i>Ram Kumar, Frank Reichert</i>	
Integrated Satellite-Terrestrial Nav/Com/Gmes System for Emergency Scenarios.....	565
<i>Enrico Del Re</i>	
Green Communications and Positioning by Integration of Adaptive and Distributed Beam-forming Technologies in Cognitive Radio Systems.....	570
<i>X. Lian, H. Nikookar, L. P. Ligthart</i>	
An Analysis of Routing Disruption Attack on Dynamic Source Routing Protocol	576
<i>J. Sen</i>	
Mitigating the Impact of High Interference Levels on Energy Consumption in Wireless Sensor Networks.....	581
<i>J. Rohde, T. S. Toftegaard</i>	
Enhancement of Cell-based Decentralized Key Management in Vehicular Communication Networks.....	586
<i>Min-Ho Park, Gi-Poong Gwon, Seung-Woo Seo</i>	
Performance Analysis of Switched Diversity over Correlated Ricean Fading Channels.....	592
<i>Milica Pejanovic-Djurisic, Maja Ilic-Dilibasic</i>	
Cooperative Spectrum Sensing: State of the Art Review	597
<i>Nuno Pratas, Neeli Rashmi Prasad, Antonio Rodrigues, Ramjee Prasad</i>	
A Novel Intrusion Detection Algorithm for Wireless Sensor Networks	603
<i>Chun-Ming Rong, Skjalg Eggen, Hong-Bing Cheng</i>	
Hybrid/Integrated Networking for NGN Services	610
<i>S. L. Kota</i>	
An Array Antenna for MIMO Systems with a Decoupling Network Using Bridge Susceptances	616
<i>Kenichi Kagoshima, Shigeki Oboe, Atsuhiko Kagaya, Kazuki Nishimura, Nobuyuki Endo</i>	
Label-free detection of Biomolecular Interaction – DNA - Antimicrobial Peptide Binding.....	620
<i>P. Fojan, K. R. Jensen, L. Gurevich</i>	
Planning Hybrid Telecom Networks for Enhanced Multimedia Services.....	625
<i>R. Shrivastava, A. Singh, A. R. Mishra</i>	
A Novel Model for Security Evaluation for Compliance.....	630
<i>Sara L. N. Hald, Jens M. Pedersen, Neeli R. Prasad, Ramjee Prasad</i>	
How Green the LTE Technology Can be? (Invited Paper)	634
<i>R. V. Raja Kumar, Jagadeesh Gurugubelli</i>	
Progress in Radioclimatological Modeling for Southern Africa	639
<i>Thomas J. O. Afullo</i>	
Author Index	