

2009 IEEE Latin-American Conference on Communications

(LATINCOM 2009)

**Medellin, Colombia
10-11 September 2009**



IEEE Catalog Number: CFP0907H-PRT
ISBN: 978-1-4244-4387-1

TABLE OF CONTENTS

SESSION 1

Impact of Channel-Spacing on the 100 Gb/s 40-km Ethernet PMD	1
<i>R. Gutierrez-Castrejon</i>	
Estimation of Free Space Optics Systems Availability Based on Meteorological Visibility.....	7
<i>Ales Prokes, Vladislav Skorpil</i>	
High-Performance Codes Selection in OCDMA Systems.....	11
<i>Jairo E. Leon, Diego F. Fino, Waldimar A. Amaya</i>	
Optimizing the Next Generation Optical Access Networks.....	17
<i>Ferney Orlando Amaya F., Ana Maria Cardenas Soto, I. Tafur Monroy</i>	

SESSION 2

An Adaptive Multi-Channel Approach for Real-Time Multimedia Wireless Sensor Networks	22
<i>Albeiro Cortes Cabezas, Nestor M. Pena T., Miguel A. Labrador</i>	
Performance Evaluation of Databases Integration in Wireless Sensor Networks.....	28
<i>Diana C. Restrepo Patino BSc., Demetrio A. Ovalle Carranza PhD., Alcides de J. Montoya Canola MSc.</i>	
Biomedical Signal Monitoring Using Wireless Sensor Networks.	34
<i>Tellez Camilo, Rodriguez Oscar, Lozano Carlos</i>	
Wireless Smart Sensors Networks, Systems, Trends and its Impact in Environmental Monitoring.....	40
<i>Luis Felipe Herrera-Quintero, Francisco Macia-Perez, Hector Ramos-Morillo, Carlos Lago-Gonzalez</i>	
Data Collection and Signal Processing for Low Power Consumption in Wireless Networks Nodes.....	46
<i>Johnny A. Aguirre, Natalia Graviria, Jose E. Aedo</i>	

SESSION 3

Metadata Construction Mechanism for Classification of Web Accessed Videos.....	51
<i>Andres R. Chaparro MSc(C), Zoila I. Ramos PhD(C)</i>	
Community Portals for Architecture-Based Middleware P2P.....	56
<i>Andre Marcelo Panhan, Eder Ignatowicz, Leonardo S. Mendes</i>	
Diskless HPC Cluster for Parallel & Grid Computing on Fedora.....	61
<i>Toro. Victoria, A. V. Nestor Waldy</i>	
A Content-Oriented Web Cache Policy	69
<i>Allan Bezerra, Cesar Melo, Dario Vieira, Yacine Ghamri-Doudane, Nelson Fonseca</i>	
Systematic Procedure for Improving Continuity and Latency on a P2P Streaming Protocol	75
<i>Maria Elisa Bertinat, Dario Padula, Franco Robledo Amoza, Pablo Romero, Daniel De Vera, Pablo Rodriguez-Bocca</i>	

SESSION 4

QoE and QoS in Wireless Mesh Networks	80
<i>Rafael Lopes Gomes, Jose Jailton Jr., Waldir Moreira Jr., Antonio Jorge Abelem</i>	
Abare: A Deployment and Management Framework for Wireless Mesh Network	86
<i>Billy Pinheiro, Vagner Nascimento, Waldir Moreira, Antonio Abelem</i>	
Cognitive Link Layer for Wireless Local Area Networks.....	92
<i>Dzmitry Kilazovich, Jorge Lima, Nelson L. S. da Fonseca, Fabrizio Granelli, Edmundo Madeira</i>	
Automatic Modulation Classification for Cognitive Radio Systems: Results for the Symbol and Waveform Domains	98
<i>Lilian C. Freitas, Claudiomir Cardoso Jr., Francisco C.B.F. Muller, Joao W.A. Costa, Aldebaro Klautau Jr.</i>	

SESSION 5

Digital Cities: Nassau and Bologna – A Study in Contrasts	104
<i>Richard Millham, Chaker Eid</i>	
Milano Digital City: Planning the Municipal Wireless Network of Milano.....	110
<i>Stefano Bregni, Maurizio Decina, Paolo Giacomazzi, Alessandro Poli</i>	
Technological Models of Municipal Wireless Networks Based on Hybrid WiFi/WiMAX Mesh Networks: A Proposal to Colombian Municipalities.....	116
<i>Andres F. Millan, Julian Hernandez, Claudia L. Zuniga, Andres Navarro, Pedro Rodriguez</i>	
Digital Cities and Open MANs: A New Communications Paradigm	122
<i>Leonardo S. Mendes, Mauricio L. Bottoli, Gean D. Breda</i>	

SESSION 6

Topology Maintenance: Extending the Lifetime of Wireless Sensor Networks.....	130
<i>Pedro M. Wightman, Miguel A. Labrador</i>	
Overview of a System AMR Based in Computational Vision and Wireless Sensor Network.....	136
<i>Jorge R. B. Garay, Sergio T. Kofiji, Tadayoshi Tiba</i>	
Implementation of an RFID Based Module for the Emulation of Drug Prescription in a Medical Training Mannequin	141
<i>Arrighi Quintero Loreana, Fonseca Hidalgo Daniel Eduardo, Ramirez Echeverry John Jairo</i>	
Design and Implementation of a Technological Solution Using Passive RFID Tags to Control Theft of Outboard Motors of Small Fishing Boats	147
<i>J. Helguero, G. Astudillo, R. Estrada</i>	

SESSION 7

Multistep Ahead Prediction of Long-Range Dependent Teletraffic	152
<i>Alexandre Barbosa de Lima, Jose Roberto de Almeida Amazonas</i>	
Monitoring of a Virtual Infrastructure Testbed	158
<i>Edgar Magana, Antonio Astorga, Joan Serrat, Rafael Valle</i>	
Active Measurement and Time-Domain Characterization of IP Packet Jitter.....	164
<i>Stefano Bregni, Andrea Baruffaldi, Achille Pattavina</i>	
The Bottlenecked Virtual Network Problem in Bandwidth Allocation for Network Virtualization	170
<i>Juan Felipe Botero, Xavier Hesselbach</i>	

SESSION 8

Functionality, Reliability and Adaptability Improvements to the OSSIM Information Security Console	175
<i>Juan Manuel Madrid, Luis Eduardo Munera, Carlos Andrey Montoya, Juan David Osorio, Luis Ernesto Cardenas, Rodrigo Bedoya, Cristian Latorre</i>	
Weaknesses and Strengths Analysis over Networkbased Intrusion Detection and Prevention Systems	181
<i>Edward Guillen, Daniel Padilla, Yudy Colorado</i>	
A Survivability Framework for the NGMN : Inspirations from the Human Immune System	186
<i>Fazirulhisyam Hashim, Kumudu S. Munasinghe, Abbas Jamalipour</i>	

SESSION 9

Internet Configurable Distributed Domotic Network	191
<i>Schiavon Maria, Isabel, Crepaldo Daniel Alberto</i>	
System for Processing and Simulation of Brain Signals	195
<i>Duque Grajales J.E., Munera Perafan A., Trujillo Cano D., Urrego Higuita D.A., Hernandez Valdivieso A.M.</i>	
Low-Cost GSM Telephony in the Amazon Region Based on Open-Source / Open-Hardware Projects	201
<i>Marcel Cabral, Igor Almeida, Carlos Melo, Aldebaro Klautau</i>	

SESSION 10

Integration Model of Mobile Intelligent Agents within Wireless Sensor Networks	207
<i>Alberto Piedrahita Ospina BSc., Alcides Montoya Canola MSc., Demetrio Ovalle Carranza PhD.</i>	
BluePartner: Application to Promote Human Relationships through Mobile Devices.....	213
<i>Francisco Reyna, Sukey Nakasima, Arnoldo Diaz, Carlos T. Calafate</i>	
Planning a Mobile DVB-T Network for Colombia	219
<i>Jaime Lopez, David Gomez-Barquero, Carlos Garcia, Narcis Cardona</i>	
Vertical Handoff Algorithms with QoS Guarantee for 4G Networks	225
<i>Leandro Bento Sena Marques, Shusaburo Motoyama</i>	

SESSION 11

Guaranteeing Service Availability in SLAs; A Study of the Risk Associated with Contract Period and Failure Process.....	231
<i>Andres J. Gonzalez, Bjarne E. Helvik</i>	
Exact Statistics of a Complex Markov Chain Through State Reduction: A Satellite On-Board Switching Example	237
<i>Marco A. Alzate</i>	
Extended Interoperability Models for Timed System Robustness Testing.....	244
<i>Fatima Mattiello-Francisco, Eliane Martins, Andre Corsetti, Ana Rosa Cavalli, Edgar Yano</i>	
Optimization of Value-Network through Clusters Consolidation	250
<i>Sami J. Habib</i>	

SESSION 12

A Blind Equalization Method for Multipath Rician Fading Channels	256
<i>Iman Moazzen, Ali Mohammad Doost-Hoseini, Mohammad Javad Omidi</i>	
Design and Test of Nonlinear Class-E and Class-F RF Power Amplifiers.....	263
<i>Jose Ricardo Casallas, Nestor Pena Traslavina</i>	
Multiuser Detector for Synchronous DS-CDMA Frequency-Selective Fading Channels Using Linear Matrix Inequalities	268
<i>Gonzalo Olmedo Cifuentes, Victor Proano, Celso de Almeida</i>	

SESSION 13

Robust Voice Activity Detection Algorithm Using Spectrum Estimation and Dynamic Thresholding.....	272
<i>Efrain Zenteno, Manuel Sotomayor</i>	
Novel Hybrid ARQ Scheme Using LDPC Codes and Partial Retransmissions	277
<i>Andre Gustavo Degraf Uchoa, Richard Demo Souza, Marcelo Eduardo Pellenz</i>	
Fair Single Code and Multi Code Assignment Schemes for OVSF Based Networks	283
<i>Davinder S. Saini, Neeru Sharma, Lakshay Sharma, Ashu Sharma</i>	
Blind Channel Estimation for Power-Line Communications by a PSO-Inspired Algorithm.....	288
<i>Gerardo A. Laguna-Sanchez, Ricardo Barron-Fernandez</i>	

SESSION 14

Performance Analysis of Application-Level Routing Algorithms for Supporting Multipoint Interaction Synchronization	294
<i>Shan Jiang, Qinghua Zheng, Wei Chen, Jin Cao</i>	
Multicast Based Dual Amplify and Forward Relay Scheme for 2-Hop Networks.....	300
<i>Muhammad Adnan, Haoqiu She, Yafeng Wang, Dacheng Yang, Wei Xiang</i>	
Application of ANOVA Method for Evaluation of Routing Protocols in Wireless Mesh Networks	305
<i>Alexander Leal, Natalia Gaviria</i>	

SESSION 15

Application of an Ant Colony Metaphor for Network Address Management in MANETs	311
<i>Alvaro Pachon, Juan Manuel Madrid</i>	
A Comparative Analysis of AODV Route Recovery Mechanisms in Wireless Ad Hoc Networks	317
<i>Nadilma Cintra Valenca Nunes Pereira, Renato Mariz de Moraes</i>	
Wavelet Correlation TOA Estimation with Dynamic Threshold Setting for IR-UWB Localization System.....	323
<i>Marcelo J. Segura, Vicente A. Mut, Hector D. Patino</i>	

SESSION 16

Earth Observation Satellite Performance Using Convolutional Coding Techniques.....	329
<i>Ivan Ramirez Ayala Ph.D. Eng., Cesar San Martin Salas Ph.D. Eng.</i>	
Adaptive Repetition Coding as a Pseudorandom Issue for WiMedia UWB-Payload Protection.....	335
<i>A. R. Gomes e Silva, H. M. de Oliveira</i>	
Hybrid Single Code and Multi Code Design to Reduce Complexity in OVSF Codes Based Wireless Networks.....	339
<i>Neeru Sharma, Davinder S. Saini, Aakash Dave</i>	

SESSION 17

Analysis of Performance Degradation in Radio-Over- Fiber Systems Based on IEEE 802.16 Protocol	344
<i>Pedro Henrique Gomes, Nelson L. S. da Fonseca, Omar C. Branquinho</i>	
Algorithm for Synthesis of 3dB-Bandwidth Tchebyscheff Bandpass DBR Filters.....	350
<i>Aaron Vaisman, Juan C. Bohorquez, Omar Nova, Ibrahim Massy, Nestor M. Pena</i>	
Experimental and Electromagnetic Simulation Investigation of an Ultrawideband CPW-Fed Disc Monopole Antenna Used Through-Wall Detection and Localization of Targets	353
<i>Hector Dave Orrillo Ascama, Carlos R. P. Dionisio, Sergio Takeo Kofuji</i>	
Study of the Channel of Communication with Plasma Using the Corona Effect for PLT.....	359
<i>Samuel Angel Jaramillo Florez</i>	

SESSION 18

Generation of Bandpass Gaussian Noise with Applications to Complete Built in Self Test in Wireless Communications Receivers.....	365
<i>Yair Linn</i>	
A Novel SNR Estimation Algorithm for MB OFDM Ultra Wide Band Communications	371
<i>Melisa Barrera, Leonardo Betancur, Andres Navarro</i>	
Heating within Spheres of Different Size Irradiated by an Electromagnetic Plane Wave	377
<i>Ernesto Aguilera, Nestor M. Pena, Juan Carlos Bohorquez</i>	
A Statistical Channel Model for on Body Area Networks in Ultra Wide Band Communications.....	381
<i>Leonardo Betancur, Narcis Cardona, Andres Navarro, Lara Traver</i>	
Author Index	