# Table of Contents

Scroll to the title and select a **Blue** link to open a paper. After viewing the paper, use the bookmark “Go to Previous Document” to return to the same page in the Table of Contents.

*Acrobat Reader 8 Users: Need to select View/Go To/Previous Document from the menu bar instead of using the bookmark.*

## I. AICCSA-08 Algorithms and Bioinformatics Track

### ALG-1: Algorithms

**A Multipattern Matching Algorithm using Sampling and Bit Index** .......................................................... 1  
J. Chen, Z. Ye, and M. Tang

**An Evolutionary Gait Generator with Online Parameter Adjustment for Humanoid Robots** .......................... 9  
A. Zamiri, A. Farzad, E. Saboori, M. Rouhani, M. Naghibzadeh, and A.M. Fard

**Solving MEC Model of Haplotype Reconstruction using Information Fusion, Single Greedy and Parallel Clustering Approaches** ................................................................. 15  
E. Asgarian, M-H. Moeinzadeh, S. Sharifian-R, A. Najafi-A, A. Ramezani,  
J. Habibi, and J. Mohammadzadeh

**Methodology for Evaluating String Matching Algorithms on Multiprocessor** ........................................... 20  
B. Soewito and N. Weng

### ALG-2: Bioinformatics

**RBT-I: A Novel Approach for Solving the Multiple Sequence Alignment Problem** ................................. 28  
J. Taheri, A.Y. Zomaya, and B.B. Zhou

**A Framework for Predicting Proteins 3D Structures** ................................................................................. 37  
R. Duwairi and A. Kassawneh

**Comparison of Population based Metaheuristics for Feature Selection: Application to Microarray Data Classification** ................................................................................................. 45  
E-G. Talbi, L. Jourdan, J. García-Nieto, and E. Alba

## II. AICCSA-08 Computer Systems and Architecture Track

### CSA-1: Physical Layer Design of Computer Systems

**Transistor-Level Based Defect Tolerance for Reliable Nanoelectronics** ..................................................... 53  
A.H. El-Maleh, B.M. Al-Hashimi, and A. Melouki

**Proposing an Efficient Method to Estimate and Reduce Crosstalk after Placement in VLSI Circuits** .......... 61  
A. Mehdizadeh and M.S. Zamani

**A Low Power Crosstalk-Free Bus Encoding using Genetic Algorithm** .................................................... 69  
T.Q. Vinh and Y-C. Kim

**A Variable Step-Size FxLMS Algorithm for Feedforward Active Noise Control Systems based on a New Online Secondary Path Modelling Technique** ........................................... 74  
P. Davari and H. Hassanpour

### CSA-2: Design and Analysis of Computer Systems

**High Performance Elliptic Curve Point Operations with Pipelined GF(2m) Field Multiplier** .......................... 82  
T.F. Al-Somani and A. Amin
# Hardware based Algorithm for Conflict Diagnosis in SAT Solver

M. Safar, M. Shalan, M.W. El-Kharashi, and A. Salem

Page 89

# Performance Modeling of Partially Reconfigurable Computing Systems

F. Lotfifar and H.S. Shahhoseini

Page 94

# A Flash Translation Layer for Huge-Capacity Flash Memory Storage Systems

C-H. Wu

Page 100

## III. AICCSA-08 Databases and Data Mining Track

### DBM-1: Data Mining: Predictions and Patterns

**Intelligent Heart Disease Prediction System using Data Mining Techniques**

S. Palaniappan and R. Awang

Page 108

**DMPML – Data Mining Preparation Markup Language**

P.M. Gonçalves Jr., A.L. Arnaud, and R.S.M. Barros

Page 116

**Enumeration of Maximal Clique for Mining Spatial Co-Location Patterns**

G. Al-Naymat

Page 126

**A Methodology for Discovering Spatial Co-Location Patterns**

F.K. Deeb and L. Niepel

Page 134

### DBM-2: Document Analysis

**A Cellular Automata Approach to Detecting Concept Drift and Dealing with Noise**

M. Pourkashani and M.R. Kangavari

Page 142

**Rapid and Robust Ranking of Text Documents in a Dynamically Changing Corpus**

B-H. Park, N.F. Samatova, R. Munavalli, R. Krishnamurthy, H. Kettani, and A. Geist

Page 149

**Concept-Based Clustering of Textual Documents using SOM**

A. Amine, Z. Elberrichi, L. Bellatreche, M. Simonet, and M. Malki

Page 156

**When Serializability comes without Cost**

M. Alomari, M. Cahill, A. Fekete, and U. Röhm

Page 164

### DBM-3: Data Mining: Applications

**Mining Fault Tolerant Frequent Patterns using Pattern Growth Approach**

S. Bashir, Z. Halim, and A.R. Baig

Page 172

**Practical Inter-Stock Dependency Indicators using Time Series and Derivatives**

A. Dattasharma and P.K. Tripathi

Page 180

**Effects of Dimensionality Reduction Techniques on Time Series Similarity Measurements**

G. Al-Naymat and J. Taheri

Page 188

**Using Sensitivity of a Bayesian Network to Discover Interesting Patterns**

R. Malhas and Z. Al Aghbari

Page 196

**Detecting High-Value Individuals in Covert Networks: 7/7 London Bombing Case Study**

N. Memon, N. Harkiolakis, and D.L. Hicks

Page 206

## IV. AICCSA-08 Networking and Multimedia Track

### NET-1: Wireless Networks I

**Providing QoS Guarantees to Multiple Classes of Traffic in Wireless Sensor Networks**

M.Y. Aalsalem, J. Taheri, M. Iftikhar, and A.Y. Zomaya

Page 216
An Energy Efficient Data Reporting Scheme for Wireless Sensor Networks ................................................................. 223
F. Tashtarian, M. Tolou Honary, M. Mazinani, A.T. Haghighat, and J. Chitizadeh

Enhancing AODV Routing Protocol using Mobility Parameters in VANET ............................................................... 229
O. Abedi, M. Fathy, and J. Taghiloo

Measured Delay Distribution in a Wireless Mesh Network Test-Bed ........................................................................ 236
N. Abu Ali, E. Ekram, A. Eljasmy, and K. Shuaib

NET-2: Networks and Systems

An Evolutionary Node Architecture and Performance Optimization ................................................................. 241
L. Tao, Q. Depei, H. Yongxiang, H. Ying, and W. Rui

TCPBridge: A Software Approach to Establish Direct Communications for NAT Hosts ........................................... 247
S. Liu, H. Jin, X. Liao, H. Yao, and D. Zeng

Towards Scalable and Reliable Grid Networks ........................................................................................................... 253
O.A. Rahmeh and P. Johnson

Aspect-Oriented Formal Specification for Multimedia Systems ........................................................................ 260
L. Zhang and L. Wang

Workflow Scheduling in Computational Grids: Opportunistic vs. Planned ............................................................. 268
A. Aziz and H. El-Rewini

NET-3: Wireless Networks II

Energy Aware Routing in High Capacity Overlays in Wireless Sensor Networks ......................................................... 276
S.H. Shaikot and V. Sarangan

A New Level based Clustering Scheme for Wireless Sensor Networks ................................................................ 284
F. Tashtarian, M. Tolou Honary, M. Mazinani, A.T. Haghighat, and J. Chitizadeh

J. Yu, W. Liu, J. Song, and B. Cao

Energy Assignment in Wireless Sensor Networks with Hierarchical Cluster-Based Routing ..................................... 299
S.A.A. Fakoorian, M. Tolou, and H. Taheri

NET-4: MIMO and Power Control

Using Input/Output Queues to Increase LDPC Decoder Performance ................................................................. 304
E. Alghonaim, A. El-Maleh, and M.A. Landolsi

Capacity Analysis of MIMO System over Nakagami-m Fading Channels using Finite Mixture with Expectation Maximization Algorithm ................................................................. 309
I.Y. Abualhaol and M.M. Matalgah

Impact of Fading Wireless Channel on the Performance of Game Theoretic Power Control Algorithms for CDMA Wireless Data ........................................................................................................... 317
M. Hayajneh, C. Abdallah, and W. Ibrahim

Slow Antenna Selection and Fast Link Adaptation MIMO Systems ........................................................................ 325
K-S. Hwang, Y-C. Ko, M-S. Alouini, and W. Lee

NET-5: Wireless Networks III

SLA-Based Dynamic Resource Management in Wireless Environments ................................................................. 333
B. Tebbani, I. Aib, and G. Pujolle

Enhanced Mobile Node's Reachability through Anycasting for MIPv6 Regional Registrations .............................. 341
A. Abdel-Hamid, L. Eslim, and Y. Hanafy

Self-localization based on Improved Subspace Approach in Wireless Sensor Network ........................................ 349
L. Hongbo and Z. Wei
Avoiding Virtual Link Attacks in Wireless Ad Hoc Networks ................................................................. 355
S. Djahel and F. Nait-Abdesselam

NET-6: Call Handoff and Admission Control

Network Provisioning over IP Networks with Call Admission Control Schemes ........................................ 361
S. Sharafeddine, Z. Dawy, and A. Beainy

Performance Evaluation of TCP Handoffs over Mobile IP Connections .................................................... 366
J. Ben-Othman, F. Nait-Abdesselam, L. Mokdad, and O. Ramirez

Handover and Class-Based Call Admission Control Policy for 4G-Heterogeneous Mobile Networks ............ 373
T. Bejaoui and N. Nasser

Processing-Delay Reduction During the Vertical Handoff Decision in Heterogeneous Wireless Systems ........ 381
R. Tawil, J. Demerjian, G. Pujolle, and O. Salazar

NET-7: Potpourri

Wireless Fair Queuing Algorithm for Window-Based Link Level Retransmission ....................................... 386
A-R. Elshafei and U. Baroudi

On the Performance of a Simple Packet Rate Estimator .......................................................... 392
K. Salah and F. Haidari

A Critical Assessment for RINEX Data from OS NET for GPS Accuracy Improvement .......................... 396
M. AL Nabhan, S. AL Masri, W. Balachandran, and Z. Hunaiti

Voronoi Path Planning Technique for Recovering Communication in UAVs ......................................... 403
O.M. Hammouri and M.M. Matalgah

A Scalable P2P Model for Optimizing Application Layer Multicast .................................................. 407
M. Amad and A. Meddahi

V. AICCSA-08 Parallel and Distributed Systems Track

PDS-1: Grid and Middleware Computing

A Dynamic Weighted Data Replication Strategy in Data Grids ................................................................. 414
R-S. Chang, H-P. Chang, and Y-T. Wang

Commodity Resource Pricing in Dynamic Computational Grids ............................................................. 422
K. Abdelkader, J. Broeckhove, and K. Vanmechelen

OTSX: An Extended Transaction Service in Support of FT-CORBA Standard ........................................ 430
H. Salimi and M. Sharifi

Performance Enhancement through Hybrid Replication and Genetic Algorithm Co-Scheduling in Data Grids ................................................................. 436
A. Elghirani, R. Subrata, A.Y. Zomaya, and A. Al Mazari

A New, Efficient Coordinated Checkpointing Protocol Combined with Selective Sender-based Message Logging .............................................................................. 444
Ch.D.V. Subba Rao and M.M. Naidu

PDS-2: Scheduling and Routing

Comparative Performance Evaluation of Software-Based Fault-Tolerant Routing Algorithms in
Adaptively-Routed Tori .................................................................................................................................. 448
F. Safaei, A. Khonsari, and A.H. Shantia

Dynamic Scheduling of Periodic Skippable Tasks in an Overloaded Real-Time System ........................... 456
A. Marchand and M. Chetto
Slack-Based Global Multiprocessor Scheduling of Aperiodic Tasks in Parallel Embedded Real-Time Systems ................................................................. 465
L. Lundberg and H. Lennerstad

Electing a Leader in the Local Computation Model using Mobile Agents ......................................................... 473
M.A. Haddar, A. Hadj Kacem, Y. Métivier, M. Mosbah, and M. Jmaiel

Mapping Task Graphs onto Network Processors using Genetic Algorithm ................................................. 481
N. Weng, N. Kumar, S. Dechu, and B. Soewito

VI. AICCSA-08 Pattern Recognition and Image Processing Track

PAT-1: Audio Processing and Recognition

Real-Time Implementation of an Efficient RLS Algorithm based on IIR Filter for Acoustic Echo Cancellation ................................................................. 489
J.R. Mohammed

Far-Field Continuous Speech Recognition System based on Speaker Localization and Sub-Band Beamforming ................................................................. 495
A. Asaei, M.J. Taghizadeh, and H. Sameti

A Model Order based Sinusoid Representation for Audio Signals ................................................................. 501
P.M.B. Mahale, M. Rashidi, and A. Sayadiyan

A New Robust Adaptive Beamformer for Enhancing Speech Corrupted with Colored Noise ................................................................. 508
J.R. Mohammed

PAT-2: Biometrics

A New Approach for Iris Localization in Iris Recognition Systems ................................................................. 516
N. Barzegar and M.S. Moin

Cooperative Criminal Face Recognition in Distributed Web Environment ................................................................. 524

Fingerprint Verification based on Core Point Neighbourhoods Minutiae ......................................................... 530
F. Benhammadi, K. Bey Baghdad, and H. Hentous

Personal Authentication based on Iris Texture Analysis ................................................................. 537
F. Benhammadi and N. Kihal

PAT-3: Supervised and unsupervised learning

A Fuzzy Similarity Approach for Automated Spam Filtering ................................................................. 544
E-S.M. El-Alfy and F.S. Al-Qunaieer

An Agent-Based Clustering Algorithm using Potential Fields ................................................................. 551
M.S. Baghshah, S.B. Shouraki, and C. Lucas

A Fuzzy Clustering Algorithm for Finding Arbitrary Shaped Clusters ................................................................. 559
M.S. Baghshah and S.B. Shouraki

Supervised Texture Classification using Several Features Extraction Techniques based on ANN and SVM ................................................................. 567
M.W. Ashour, M.F. Hussin, and K.M. Mahar

Semantic-Based Image Retrieval: A Fuzzy Modeling Approach ................................................................. 575
A. Lakdashti, M.S. Moin, and K. Badie

PAT-4: Recognition using Wavelets and Probability Distributions

Writer Identification using Edge-Based Directional Probability Distribution Features for Arabic Words ................................................................. 582
S. Al-Ma’adeed, E. Mohammed, D. Al Kassis, and F. Al-Muslih
Redundant Watermarking using Wavelet Packets ................................................................. 591
M.R. Soheili

A Video-Based Image Processing System for the Automatic Implementation of the Eye
Involuntary Reflexes Measurements Involved in the Drug Recognition Expert (DRE) ........... 599
F. Meunier and D. Laperrière

Numerical Recognition using Curvelet Transform ............................................................... 606
F.M. Kazemi, J. Izadian, R. Moravejian, and E.M. Kazemi

PAT-5: Enhancement and Segmentation

ALSD: An Algorithm for Noise Erasure and Structural Information Recovery for Surfaces
with Structural Discontinuities .............................................................................................. 613
A. Saha and S. Garg

A Similarity-Window based Background Estimation Approach ............................................. 623
E. Shahrian, H. Karshenas, and M. Fathy

Active Contours Initialization for Ultrasound Carotid Artery Images ................................. 629
S.G. Moursi and M.R. El-Sakka

Core Point Detection using Improved Segmentation and Orientation ................................... 637
M.U. Akram, A. Tariq, S. Nasir, and A. Khanam

VII. AICCSA-08 Security and Information Assurance Track

SIA-1: Computer Security

Privacy Preserving ID3 using Gini Index over Horizontally Partitioned Data .......................... 645
S. Samet and A. Miri

Formal Digital License Language with OTS/CafeOBJ Method ............................................ 652
J. Xiang, D. Bjørner, and K. Futatsugi

A Novel Flow-Sensitive Type and Effect Analysis for Securing C Code ............................... 661
S. Tlili and M. Debbabi

Privacy and the Market for Private Data: A Negotiation Model to Capitalize on Private Data .... 669
A. Yassine and S. Shirmohammadi

Extracting Kerberos Passwords through RC4-HMAC Encryption Type Analysis ................. 679
A. Alazzawae, A. Alazzawae, A. Nawaz, and D. Wijesekera

SIA-2: Network Security

Optimizing Fuzzy K-Means for Network Anomaly Detection using PSO .............................. 686
R. Ensaifi, S. Dehghanzadeh, and M-R. Akbarzadeh -T

A New RSA Vulnerability using Continued Fractions ......................................................... 694
D.I. Nassr, H.M. Bahig, A. Bhery, and S.S. Daoud

Managing Access and Flow Control Requirements in Distributed Workflows .................... 702
S. Ayed, N. Cuppens-Boulahia, and F. Cuppens

Performance Analysis of Identity Management in the Session Initiation Protocol (SIP) ........ 711
Y. Rebahi, J.J. Pallares, N.T. Minh, S. Ehlerl, G. Kovacs, and D. Sisalem

J. Fu, H. Xiong, Z. Li, and H. Zhang
VIII. AICCSA-08 Software Systems and Applications Track

SSA-1: Software Design and Testing Methodologies

Efficient Computation of State Space over Approximation of Preemptive Real Time Systems ................................................. 726
A. Abdelli and D. Yahiatene

Test of Preemptive Real-Time Systems ................................................................. 734
N. Adjir, P. de Saqui-Sannes, and K.M. Rahmouni

Towards a Mobile Architecture Description Language ........................................ 743
C. Bouanaka and F. Belala

Integrating Software Development Security Activities with Agile Methodologies .................................................. 749
H. Keramati and S-H. Mirian-Hosseinabadi

SSA-2: Web Services

Comprehensive Support for Management of Enterprise Applications ................................................................. 755
J. Bruhn, C. Niklaus, T. Vogel, and G. Wirtz

Assessing Quality of Web based Systems ............................................................... 763
K.M. Khan

Exceptions in a Web Services Environment ............................................................ 770
Z. Maamar and D. Benslimane

Design Metrics for Web Application Maintainability Measurement .......................................................... 778
E. Ghosheh, S. Black, and J. Qaddour

SSA-3: Software Systems Modeling

A Recursive Colored Petri Nets Semantics for AUML as Base of Test Case Generation ................................................. 785
Y. Kissoum and Z. Sahnoun

A Modular State Exploration and Compatibility Checking of UML Dynamic Diagrams ............................................. 793
Y. Hammal

Modeling Variability in the Component and Connector View of Architecture using UML ...................................... 801
M. Razavian and R. Khosravi

A Context Model based on UML and XML Schema Representations .......................................................... 810
S.K. Mostéfaoui

Short Papers

SP-1: Short Papers I

Efficient Hierarchical Diff-EDF Schedulability for QoS Packet Networks ................................................................. 815
M. Saleh, Z. Othman, and M. Saleh

Modelling Information Generation in Event-Driven Sensor Networks ........................................................ 820
G. Balasubramanian and S. Chakrabarti

Error Rate Performance for Coherent Modulation Techniques with Switched and Examine Diversity Combining over Weibull Fading Channels ................................................. 824
A.M. Magableh and M.M. Matalgah

A Recursive Load Balancing Technique for VoIP-Dedicated WLANs ................................................................. 830
G. Sawma, I. Aib, K. Barbar, and G. Pujolle

Text Classification: A Preferred Tool for Audio File Classification ........................................................ 834
L. Rompré, I. Biskri, and F. Meunier
A Phishing Sites Blacklist Generator .......................................................... 840
M. Sharifi and S.H. Siadati

Steganography in SMS by Sudoku Puzzle .................................................. 844
M.H. Shirali-Shahreza and M. Shirali-Shahreza

Detecting Flooding Attacks Against IP Multimedia Subsystem (IMS) Networks .................................................. 848
Y. Rebahi, M. Sher, T. Magedanz

A Connectionist System Approach for Learning Logic Programs .......................................................... 852
M.H. Mashinchi and S.M.Hj. Shamsuddin

SPVA: A Novel Digital Signal Processor Architecture for Software Defined Radio ........................................ 856
X. Fang, D. Wang, and S. Chen

An Efficient High Performance Scalar Multiplication Method with Resistance against Timing Attacks .......... 860
T.F. Al-Somani and A. Amin

SP-2: Short Papers II

Committee Machines and Quadratic B-Spline Wavelet for the P300 Speller Paradigm ........................................ 866
Z. Seyyedsalehi, A.M. Nasrabadi, and V. Abootalebi

Enhanced Document Clustering using Fusion of Multi-Scale Wavelet Decomposition .................................... 870
M.F. Hussin, I. El Rube, and M.S. Kamel

Wavelets: An Efficient Tool for Lung Sounds Analysis .......................................................... 875
F. Ayari, A.T. Alouani, and M. Ksouri

Compression of the Images of Ancient Arab Manuscript Documents based on Segmentation .................. 879
W. Elloumi, M. Chakroun, M. Charfi, and M.A. Alimi

On Hybrid-Fuzzy Classifier Design: An Empirical Modeling Scenario for Corrosion Detection in Gas Pipelines .................................................. 884
U. Qidwai and M. Maqbool

Time-Frequency Analysis of the Arabian Flute (Nay) Tone Applied to Automatic Music Transcription .......... 891
M.A. Al-Taee, M.S. Al-Rawi, and F.M. Al-Ghawanmeh

DEV5-WSN: A Discrete Event Approach for Wireless Sensor Network Simulation ..................................... 895

Delegation Model for Object-Oriented Systems .......................................................... 899
H. Mcheick, H. Mili, E. Dallaire, and R. Mcheik

An Evaluation Method for Aspectual Modeling of Distributed Software Architectures .................................. 903
H. Bagheri, V. Montaghami, G. Safi, and S-H. Mirian-Hosseinabadi

Intelligent Virtual Archiving for Accessing News Article Repositories .................................................. 909
W.K. Lebda, N. Fetais, S. Al Hussaini, S. Ismail, and Q. Malluhi

Poster Papers

Posters 1: Learning and Identification

Intelligent Diabetes Assistant: Using Machine Learning to Help Manage Diabetes ........................................ 913
D.L. Duke, C. Thorpe, M. Mahmoud, and M. Zirie

New Technique in the use of Tangent Vectors for a Robust Handwritten Digit Recognition .......................... 915
H. Nemmour and Y. Chibani

Networks of Evolutionary Processors with a Self-Organizing Learning .................................................. 917
N.G. Blas, L.F. Mingo, and J. Castellanos

SIGMA – A Malaysian Signatures' Database .......................................................... 919
S.M.S. Ahmad, A. Shakil, A.R. Ahmad, M. Agil, M. Balbed, and R.Md. Anwar
Improved Image Segmentation Method based on Optimized Threshold using Genetic Algorithm ........................................... 921
X. Zhao, M-E. Lee, and S-H. Kim

Writer Indentification of Arabic Handwriting Documents using Grapheme Features ........................................... 923
S. Al-Ma'adeed, A-A. Al-Kurbi, A. Al-Muslih, R. Al-Qahtani, and H. Al-Kubisi

MASCE: A Multi-Agent System for Collaborative E-Learning ........................................................................... 925
H. Mahdi and S.S. Attia

Arabic Spotted Words Recognition System based on HMM Approach to Control a Didactic Manipulator ............................................................................................................................... 927
M. Fezari, A. Hamza, and M. Bedda

Forensic Handwritten Document Management System ......................................................................................... 929
S. Al-Ma'adeed, F. Amire, S.K. Hamza, and W. Al-lebda

Posters 2: Networks and Modeling

Estimation of Clock Parameters and Performance Benchmarks for Synchronization in Wireless Sensor Networks ........................................................................................................................................................................... 931
Q.M. Chaudhari and E. Serpedin

Suitability of Context Models for Service-Oriented Environments ............................................................................. 933
S.K. Mostéfaoui

A System for Automatic Gathering and Intelligent Analyses of Doha Traffic Data ........................................... 935
N. Alnaimi, N. Barhoum, A. Nasser, A. Swidan and Q. Malluhi

Segmentation of Medical Image based on Mean Shift and Deterministic Annealing EM Algorithm ..................... 937

Hierarchical Replication Techniques to Ensure Checkpoint Storage Reliability in Grid Environment ..................... 939
F. Bouabache, T. Herault, G. Fedak, and F. Cappello

A Fair Scheduling Algorithm for Video Transmission over Wireless Packet Networks ............................................. 941
M. Hassan, T. Landolsi, and M. Tarhuni

How can Path Diversity Help Transmission Protocols in the Achievement of a Better Connection QoS? ......... 943
F. Melakessou, U. Sorger, and Z. Suchanecki

Tutorials-Based System to Assist Qatari Children with Special Needs ........................................................................... 945
J.M. Alja'am, H. Alsuwaidi, N. Alkuwari, and H. Aldosari

Workshop Papers

WISe-1: Network Architecture and Quality of Service

An MPLS-DiffServ Experimental Core Network Infrastructure for E2E QoS Content Delivery ........................................... 947
N. Zotos, G. Xilouris, E. Pallis, and A. Kourtis

Differentiated Services Provision in a Converged DVB/IP Networking Environment ........................................... 952
E. Markakis, A. Sideris, E. Pallis, and V. Zacharopoulos

SLNP Usage for QoS Negotiation in Heterogeneous Environments ........................................................................... 958
N. Mbarek, F. Krief, and D. Négru

QoS Monitoring Framework for End-to-End Service Management in Wired and Wireless Networks ............. 964
M. Sidibé and A. Mehaoua

WISe-2: Multimedia and Wireless Services

Measuring Quality of Experience for MPEG-21-Based Cross-Layer Multimedia Content Adaptation ..................... 969
C. Timmerer, V.H. Ortega, J.M. González, and A. León

P2P-Based Mobile IPTV: Challenges and Opportunities .......................................................................................... 975
M. Mushtaq and T. Ahmed
Multimedia Terminal Architecture: An Inter-Operable Approach ......................................................... 981
B. Shao, M. Mattavelli, M.T. Andrade, S. Keller, G. Ciobanu, and P. Carvalho

Optimizing Resources Utilization in Heterogeneous Wireless Networks ................................................ 987
A. Djouama, M. Abdennebi, and S. Tohme

WISE-3: Algorithms, Protocols and Tools

Adaptive Cross-Layer Fragmentation for QoS-Based Wireless IPTV Services ........................................... 993
I. Djama, T. Ahmed, and D. Négru

Frame-Level Dynamic Bandwidth Provisioning for QoS-Enabled Broadband Wireless Networks .................. 999
B. Al-Manthari, N. Abu Ali, N. Nasser, and H. Hassanein

Ant Colony-Based Many-to-One Sensory Data Routing in Wireless Sensor Networks .................................. 1005
R.G. Aghaei, ASM M. Rahman, A. Rahman, W. Guéaieb, and A. El Saddik

Multimedia Caching Integration for Efficient Content Delivery over Heterogeneous Networks .................. 1011
M. Mushtaq and T. Ahmed

The ENTHRONE 2 Metadata Management Tool (MATool) (WISE 2008 MATool Demonstration) ............... 1013
A. Lugmayr

WISE-4: Panel Discussion

End-to-End QoS through Integrated Management of Content, Networks and Terminals:
The ENTHRONE Project ............................................................................................................................... 1019
O. Négru

SCAS-1: Workshop on: Safety Computer Architecture and Systems

Improve Industrial Process Plant Safety and Availability via Reliability Engineering ................................... 1021
M. Houtermans, M. Al-Ghumgham, and T. Vande Capelle

Functional Safety IEC 61508 / IEC 61511 – The Impact to Certification and the User .............................. 1027
G. Gall

Development Guidelines for Dependable Real-Time Embedded Systems .................................................. 1032
M. Short

Redundant Optical Data Transmission using Semiconductor Lasers ............................................................ 1040
H.D. Wacker, J. Börcsök, and H. Hillmer


Implementation of a 1oo2-RISC-Architecture on FPGA for Safety Systems ............................................. 1046
J. Börcsök, A. Hayek, and M. Umar

Different Approaches for Probability of Common Cause Failure on Demand Calculations for
Safety Integrity Systems ............................................................................................................................... 1052
J. Börcsök and P. Holub

Matlab® / Simulink® Generated Source Code for Safety Related Systems ................................................. 1058
M.H. Schwarz, H. Sheng, A. Sheleh, and J. Börcsök

RRMesh–1: Planning and Infrastructure

A Heterogeneous Network Architecture based Gnutella for Mobile Emergency Preparedness Applications ....... 1064
A. Boukerche, A. Zarrad, and R. Araujo

WiMAX Mesh Networks for Underserved Areas ......................................................................................... 1070
E. Sedyoeya, Z. Hunaiti, M. Al Nabhan, and W. Balachandran

Analysis of the Latency-Lifetime Tradeoff in Wireless Sensor Networks ................................................... 1076
F. Bouabdallah, N. Bouabdallah, and R. Boutaba
RRMesh–2: RRM Functionalities

Enhancement of IEEE 802.11 DCF Backoff Algorithm under Heavy Traffic .................................................. 1082
I. Elarbaoui and H.H. Refai

Cumulative Intelligence Gathering for Smart Vehicles .................................................................................. 1088
S. Cheng, L. Stanković, V. Stanković, and H. Refai

Preventing Admission Failures of Bandwidth Reservation in Wireless Mesh Networks .............................. 1094
A. Herms and G. Lukas

Performance Study of Wireless Mesh Networks Routing Metrics .............................................................. 1100
S. Waharte, B. Ishibashi, R. Boutaba, and D. Meddour

Paper added to SSA I

A UML Rule-Based Approach for Describing and Checking Dynamic Software Architectures .................. 1107
M.N. Miladi, M. Hadj Kacem, A. Boukhris, M. Jmaiel, and K. Drira