

IASTED

International Conference on Networks and Communication Systems 2006

March 29-31, 2006
Chiang Mai, Thailand

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

ISBN: 978-1-60423-580-7

Some format issues inherent in the e-media version may also appear in this print version.

IASTED

International Conference
on Networks and
Communication Systems
2006

TABLE OF CONTENTS

AD-HOC AND SENSOR NETWORKS

Comparison of On-Demand Mobile Ad Hoc Network Routing Protocols Under On/Off Source Traffic Effect	1
<i>J.-H. Au-Yong</i>	
Implementation of a Quadrant-based Directional Routing Protocol (Q-DIR) in Wireless Mobile Ad Hoc Network	6
<i>L.A. Latiff, A. Ali, C.-C. Ooi, N. Faisal</i>	
Doppler Location Algorithm for Mobile Ad Hoc Networks	12
<i>T.G. Basavaraju, C. Puttamadappa, M.A. Goutam, S.K. Sarkar, B. Ramesh</i>	
Repair and ACK Suppression in Congested Multicast MANETs	18
<i>K. Sithitavorn, B. Qiu</i>	
Assurance-Aware Self-Organization of Sensor Network	24
<i>C. Boonthum, I. Levinstein, S. Olariu, L. Wang, Q. Xu</i>	
A Cluster based Energy Aware Routing Protocol for Sensor Networks	30
<i>G. Lee, J. Kong, O. Byeon</i>	
Security Protocols for Wireless Sensor Networks Based on Tiny Diffusion and Elliptic Curves	35
<i>J. Abraham, K.S. Ramanatha</i>	
OLSR Scaling with Hierarchical Routing and Dynamic Tree Clustering	41
<i>E. Baccelli</i>	
A Self-Stabilizing Distributed Algorithm for 5-Spanner	47
<i>H. Kakugawa, T. Masuzawa</i>	
A Multimedia Conferencing on a Mobile Ad-Hoc Network Over Vehicles	53
<i>W. Han, T. Kim, J. Lee, D. Hyun, J. Um, J. Ryu, J. Lim, J. Jang</i>	
Synchronous Multi-Training in Sensor Networks	60
<i>R. Ishak, S. Olariu, S. Salleh</i>	

ALGORITHMS AND DESIGN

New Full-Response Q2 PSK Signal Format	65
<i>C.-D. Chung, W.-L. Lin</i>	
Performance of Scheduling Algorithms in High Speed Downlink Packet Access	68
<i>J.U. John, S. Pillay</i>	
A Near Optimum Detector for Block Data Transmission System	74
<i>F. Ghani</i>	
Maximum Increment based Subcarrier Allocation for Multi-User OFDM Systems	79
<i>T.-K. Tseng, T.-H. Lee</i>	

Enhanced Split-Layer Protocol with H.264 based Error Concealment Technique	85
<i>T. de Souza-Daw, N.K. Chilamkurti, B. Soh</i>	
A New Robust Decentralized DMX Algorithm	91
<i>M. Challenger, P. Bayat, M.R. Meybodi</i>	
ICA-based Multiuser Detection in MC-CDMA Systems	99
<i>V.D. Thanh, P.Q. Thai</i>	
Opportunistic Power Control with Interference Cancellation for CDMA Systems	105
<i>C.W. Sung</i>	
Routing Information Control System for Use of AWG-based Customer-Owned Optical IP Networks	109
<i>O. Koyama, S. Hironaka, K. Nishikawa, Y. Katsuyama</i>	
An Adaptive Soft Handover Scheme using Fuzzy Load Balancing for WCDMA Systems	114
<i>K. Yang, B. Qiu, L.S. Dooley</i>	
Virtual Hardware for 3rd Generation Medium Access Control Protocol	120
<i>M. Unhawiwat, S. Sae-Wong, S. Kamolphiwong</i>	
MAC Protocol with WDM/TDMA Scheme for AWG-based WDM-PON	125
<i>K.-E. Han, S.-H. Lee, W. Yu, C.-K. Kang, S.-H. Shim, Y.-C. Kim</i>	
 PERFORMANCE AND QUALITY OF SERVICE	
The Case for a Conservative and Adaptive QoS Provisioning Scheme for Multimedia Wireless Network	131
<i>K.N. Choong, Y.C. Yee, A.L.Y. Low, S.L. Ng, S.F. Chien</i>	
Comparative Study of Adaptive Quality of Service Mechanisms in Wireless LAN's	137
<i>D. Singh, S. Hoh, S.L. Ng, A.L.Y. Low, F.L. Lim, M. Singaram</i>	
Bandwidth Broker and Pricing in Multinode Network	143
<i>J. Siltanen, I. Kannisto, J. Joutsensalo, T. Hämäläinen</i>	
The Palindrome Scheduler Scheme Provides Enhanced Service Efficiency of Real and Non Real-Time Streams	149
<i>J. Tsiligaridis, R. Acharya</i>	
Neural Network based Mobility Prediction for Handoff Management in Wireless MPLS Network	156
<i>B.S. Ghahfarokhi, N. Movahedinia</i>	
Does Instant Messaging Usage Impact Students' Performance in Kuwait?	162
<i>K. Rouibah, H. Hamdy</i>	
The Capability of Bluetooth for Real-Time Transmission in Automation	168
<i>A. Vedral, J.F. Wollert, A. Buda, R. Altrock</i>	
Performance Analysis of Intercarrier Interference Reduction Algorithms for OFDM Communication Systems in Multipath Fading Channels	176
<i>B.A. Shah, M.A. Masnadi Shirazi, A.R. Zolghadrasli</i>	
Bit-Plane Watermarking with Increasing Coding Efficiency for Video Authentication and Verification in MPEG-4 FGS	182
<i>W.-C. Hsiao, P.-Y. Chen, C.-C. Wang</i>	

MODELLING AND SIMULATION

Performance Analysis of Large-Scale Wireless Sensor Network Architecture with Multi-Cluster Configuration	188
<i>M. Sugano, Y. Kiri, M. Murata</i>	
Small Scale 3G Wireless Experimental System Simulation and Construction in China's Urban Environment with a Market Analysis	194
<i>G. Ren, B. Chen, J. Xu, W. Yang</i>	
Local DTW Coefficients and Pitch Feature for Back-Propagation NN Digits Recognition	201
<i>R. Sudirman, S.-H. Salleh, S. Salleh</i>	
A Preliminary Theoretical Analysis on Non-Data-Aided Decision-Directed Feedforward Symbol Timing Estimation	207
<i>W.K. Wong</i>	
A Model of Evaluation of Adaptive Backpressure in Network of Queue	212
<i>S. Lekcharoen, C. Chaochanchaikul, C. Jittawiriyankoon</i>	
A Model of Evaluation of Adaptive Fuzzy Backpressure in Backoff Schemes for VDSL Network	218
<i>S. Lekcharoen, C. Chaochanchaikul, C. Jittawiriyankoon</i>	
An Optimization-based Design Algorithm for CATV Networks	223
<i>K.W. Peng, Y.S. Lin, J.F. Kwang</i>	
Transmitting H.264 Video Traffic over SPLIT Protocol - A Simulation Study	229
<i>N.K. Chilamkurti, B. Soh</i>	
FCFS Priority-based: An Adaptive Approach in Scheduling Real-Time Network Traffic	235
<i>M. Saleh, Z. Othman, S. Shamala</i>	

MOBILE SYSTEMS

An Agent-based Passenger Support System over Heterogeneous Wireless Infrastructures in an Airport Environment	240
<i>Y. Wang, A. Ma</i>	
Algorithmic Issues in Mobile Infrastructure-based Communications	245
<i>C. Boonthum, I. Levinstein, E. Olariu, A.Y. Zomaya</i>	
A Novel Positioning Technique for Cellular Ad Hoc Networks	251
<i>R. Cheung, G. Yao</i>	
A Generalized Algorithm to Generate Cyclic Redundancy Check Algorithm under Memory Constraint Conditions	258
<i>J.S. Prasad</i>	
A Robust Middleware Architecture for Mobile Communication Security	262
<i>T. Chen, H. Mao, F. Chen, H. Dai, W. Hu</i>	
A Micro-Mobility Management Scheme with Load Balancing	268
<i>Z. Li, J. Wang, Q. Zhou</i>	
An Optimized Host-Control Scheme for Smooth Handovers	273
<i>Z. Li, J. Wang, Q. Zhou</i>	
Contents Service Supporting Both the Wired and Wireless Internet	278
<i>S.J. Lee, N. Yoo, C.S. Son, N.Y. Park, I.M. Hwang, S.Y. Yang, W.J. Kim</i>	

Fading Analysis of Vegetation Density Effects on Path Loss for 1.8 GHz Cellular Mobile with Low Base Station Antenna Height	283
<i>S. Phaiboon, K. Pitithammawong, T. Chulajata, S. Somkuampanit</i>	

Direct Conversion Software Radio Solution to System Interoperability Problems	287
<i>O. Panfilov, R. Hickling, T. Turgeon, M. Yagi</i>	

SECURITY AND DIGITAL RIGHTS MANAGEMENT

Survey of Cyber-Security and a Fundamental of Geometric Common Key Agreement in MANETs	293
<i>S.-J. Wang, S. Chen, J.-H. Huang</i>	

Fairness in Certified Electronic Mail	298
<i>O. Cailloux, N. González-Deleito, O. Markowitch</i>	

A Proposal of Voice Stream Authentication Method with Fixed Length Signature for IP Telephony	304
<i>R. Uda, Y. Matsushita</i>	

A Secure Virtual File Server with P2P Connection to a Large-Scale Network	310
<i>S. Tezuka, R. Uda, A. Inoue, Y. Matsushita</i>	

An Efficient and Reliable Security Co-Defense System	316
<i>K.-M. Yu, W. Ouyang, L.-M. Huang</i>	

Security and Performance of Group Key Agreement Protocols	321
<i>S. Zheng, D. Manz, J. Alves-Foss, Y. Chen</i>	

Development of an Automated Testbed for Testing Packet Filtering Functions	328
<i>H.S. Kim, S.H. Kuk, Y.-D. Park</i>	

Efficient Certificateless Public Key Encryption with Pairing	334
<i>Y. Shi, J. Li, J. Pan, J. Shi</i>	

The Application of Smartcard-based Iris Key Authentication Algorithm in Kerberos	340
<i>Q. Li, X. Zou, H. Lin, Z. Liu, X. Niu</i>	

Digital Signature Scheme for Flexible Usage of a MIDI File	346
<i>H. Miyata, R. Uda, Y. Matsushita</i>	

A Study on Classification Techniques for Network Intrusion Detection	352
<i>S. Kaplantzis, N. Mani</i>	

NETWORKS

Packet Drop Policies for TCP over Unspecified Bit Rate ATM Networks	358
<i>M.A. Shalan, J.N. Ayoub</i>	

Framework for Network and System Management Planning and Operation	364
<i>M.H. Knahl</i>	

Delay Guarantee, Bandwidth Allocation, and Pricing in Multinode Network	370
<i>K. Luostarinen, O. Gornikov, J. Joutsensalo, T. Hämäläinen</i>	

A Novel Approach to Reduce Call Dropping Probability in LEO Network using Gateway-Satellite Links	375
<i>P. Veeraraghavan, S. Ghosh, J. Singh</i>	

Complexity Analysis of an Efficient Heuristic for Shared Backup Tree Protection in MP?S Networks	379
<i>T.N.L. Tran, K. Steenhaut, A. Nowé, W. Colitti</i>	

Investigation of Different Wavelet Bases for LRD Traffic Prediction	385
<i>K. Mizanian, M. Vasef</i>	
Network based Filtering Architecture on a Shared Multicast Tree	390
<i>J. Singh, P. Veeraraghavan, S. Singh</i>	
Integrated Multilayer Traffic Engineering in the GMPLS based IP over Optical Networks	396
<i>W. Colitti, K. Steenhaut, A. Nowé, T.N.L. Tran</i>	
Web Server Load-Balancing using Fuzzy Neural Network	402
<i>Y.K. Liu, L.M. Cheng, L.L. Cheng</i>	
Serial Interference Cancellation for OCDMA System	407
<i>S.M. Naufal, Z.M. Azman</i>	

WIRELESS SYSTEMS

High Performance TCP Scheme over Wireless LAN with Handoff and Transmission Error	411
<i>J. Ebihara, M. Kobayashi, T. Kato, S. Itoh</i>	
Agent based Cooperation Control over Wireless LAN Networks with Semi-Smart Antennas	417
<i>Y. Wang, L. Cuthbert</i>	
A New Adaptive FEC Algorithm for Wireless LAN Networks	425
<i>C.-H. Ke, N. Chilamkurti, G. Dudaja, C.-K. Shieh</i>	
A Cluster-based Geometric Approach to WLAN Location Determination Systems	429
<i>P. Sungkhachan, P. Supnithi, P. Phasukkit, M. Sangworasil</i>	
Imperfect Counter Mode Utilization - IEEE 802.11i Wireless LAN	434
<i>M.J. Hussain, M.U. Mufti, U. Ilyas</i>	
Seamless Call Transfer Between Cellular (GSM) and Enterprise (VOWLAN) Networks	440
<i>D. Jayaram, N. Sreenivasulu</i>	
Improvement of AODV for Energy-Aware Routing Algorithm in MANET	446
<i>J.-M. Kim, J.-W. Jang, W. Lyu</i>	
Frequency Transmit Diversity Techniques for OFDM Antenna Array System over Multipath Fading Channels	451
<i>S.-S. Jeng, C.-W. Tsung, S.-J. Syue</i>	
Performance Evaluation of IEEE 802.11g with Smart Antenna System over the Multipath Channel	456
<i>S.S. Jeng, C.W. Tsung</i>	
Smart Antennas and Radio Over Fibre for Next Generation Wireless Networks	461
<i>P. Ritosa, T. Korosec, B. Batagelj, M. Vidmar</i>	
The Spread F Phenomenon of the Ionosphere in Thailand	467
<i>V. Yamvinij, N. Hemakorn, N. Leelarujji, P. Supnithi</i>	
Broadband Internet for All: WiMAX A Reality	470
<i>K.R. Santhi, G.S. Kumaran</i>	
SDMA and Wireless Access with Smart Antennas	476
<i>G.S. Tomar</i>	

AUTHOR INDEX