The 8th World Multi-Conference on Systemics, Cybernetics and Informatics
July 18-21, 2004 ~ Orlando, Florida, USA
Volume III
Communication and Network Systems, Technologies and Applications
Edited by
Nagib Callaos
William Lesso
Belkis Sanchez

Organized by IIIS
International Institute of Informatics and Systemics
Member of the International Federation of Systems Research: IFSR
COMMUNICATION AND NETWORK SYSTEMS, TECHNOLOGIES AND APPLICATIONS

CONTENTS

Broadband Networks: Frame Relay, SMDS, ATM, B-ISDN, AINS, etc

Almeida, Nuno T. (Portugal): "High-Speed Wireless LANs: Modeling and Simulation of Enhanced ARQ Strategies" 1

Jacquet, Frédérique; Lafarguette, Patrick; Llamas, Philippe; Misson, Michel (France): "A Multicast Approach for Exchanges between Co-Operating Mobiles in an 802.11 WLAN" 7

Ratasuk, Rapeepat; Xiao, Weimin; Ghosh, Amitava (USA): "Analysis of WLAN Throughput with H-ARQ and Link Adaptation" 13

ReFalo, Lee; Regula, Jim; Aparo, Massimo (Austria): "IAEA Data Integration and Remote Monitoring" 18

Communication and Network Systems, Technologies and Applications

Al-Khatib, Mazen (USA): "Performance Enhancement for 16 QAM Transceivers Using Sinusoidal Base-Band Signals" 22

Delgado-Frias, José G.; Guo, Ruirui (USA): "A Cache Architecture for IPv6 Lookups" 25

Fujimoto, Masaki; Ishibashi, Yutaka (Japan): "A Compensation Scheme for Network Delay Jitter of Haptic Media in Networked Virtual Environments" 30

Hudyma, Robert; Fels, Deborah I. (Canada): "Causes of Failure in IT Telecommunications Networks" 35

Mango Furnari, Mario; Pezzullo, Gennaro; Vitobello, Francesco (Italy): "The ReMuNa Network Management Framework" 39

Sekharan, Chandra N.; Dumais, Robert; Heami, Teizi; Raby, John; Radhakrishnan, Sridhar (USA): "A Knowledge Environment for Interacting Semi-Autonomous Agents for the Future Force" 44
Wang, Jian; Yu, Jinlong (China): "Derivation and Experiment on DOP for PMD Compensation"

Communication Systems and Networks

Hadjina, Nikola (Croatia): "Evaluation of the Performance Impact of the SECURCOM Encryption Device on Ethernet LANs"

Loeser, Chris; Schaefer, Robbie; Mueller, Wolfgang; Borowski, Marc (Germany): "An Adaptable Framework for Remote Tool Monitoring and Control"

Oh, Sun-Jin (South Korea): "A Scale Patching Technique for Video-On-Demand Servers"

Ratasuk, Rapeepat; Fabien, Jean-Aicard; Ghosh, Amitava; Xiao, Weimin (USA): "Power Requirement for Multimedia Broadcast/Multicast Services in UMTS"

Communication, Networking and Interconnection Technologies

Ashibani, Majdi; Shatwan, Fathi Ben (Libya): "QoS-Aware Adaptation Scheme for Video Delivery over 3G Mobile Networks"

Burrell, Anthony; Papantoni-Kazakos, P. (USA): "Non-Coherent Traffic Monitoring and Capacity Allocation for Heterogeneous Networks"

Chen, Hong; Liu, Zhao; Su, Li; Jin, Depeng; Zeng, Lieguang (China): "Design of the UTOPIA Interface of 10-Gigabit Ethernet with FPGA"


Li, Keqin (USA): "Lower Bounds for Routing and Wavelength Assignment in WDM Optical Networks"

Okuno, Michitaka; Nishi, Hiroaki (Japan): "Network-Processor Acceleration-Architecture Using Header-Learning Cache and Cache-Miss Handler"

Son, Mi-Hyun *; Lee, Seong-Soo *; Popov, Oleg V. ** (* South Korea, ** Russian Federation): "Wireless Receiver Architecture Using Time Division IQ Channels"
Su, Wei; Luo, Xueshan; Zhang, Yaohong; Xiu, Shenglong (China): "Research on Simulation Based Communication Network Design Technology and Support Environment"

Tu, Huan-Yu (USA): "A Routing Algorithm for Group-Fault Communication Systems"

Yang, Ming-Chien; Li, Tseng-Kuei; Tan, Jimmy J. M.; Hsu, Lih-Hsing (Taiwan): "Cycle-Embedding Problem on Faulty Twisted Cubes"

Computers and Communications

Aznar, Fidel; Mora, Francisco; Pujol, Mar; Rizo, Ramón; Sempere, Mireia Luisa; Suau, Pablo (Spain): "Broadcasting of Image Sequences by Internet for the Telecontrol of a Mobile Robot"

Lee, Nam-Kyung; Ryu, Jun-Gyu; Jeong, Hoon; Oh, Deock-Gil; Lee, Ho-Jin (South Korea): "Performance Enhancing Mechanisms for Supporting Real-Time Services on Two Way Satellite DVB-RCS System Environments"

Yang, Jianguo *; Wang, Zhaoan *; Wei, Xinzhou **; Goykadosh, Aron **; Li, Lihong **; Li, Qingfeng *; Lo, Yong (* China, ** USA): "An Investigation of the Randomness Using the Randomness Rate"

Flow Control and Congestion Control

De la Rosa, Eugenio; Hartman, John H.; Hurst, Terril (USA): "Effects of Cross-Traffic Congestion on Web Caching Networks"

Kanbara, Takeshi; Ishibashi, Yutaka; Tasaka, Shuji (Japan): "Haptic Media Synchronization Control with Dead-Reckoning in Networked Virtual Environments"

Li, Shengjun; Shen, Ruimin (China): "Threshold-Based and Priority Adaptive Session-Based Admission Control"

Network Applications

Gao, Chuanshan; Wang, Zhi; Peng, Gegang (China): "A Simple Service Broking Middleware for Peer-To-Peer Applications"

Jin, MingYe; Wang, MingHui; Zhang, ZhiJiang (China): "Multi-Domain Layered Softswitch-Based NGN Network Architecture"
Matsuoka, Katsunori (Japan): "Smart House Understanding Human Behaviors: Who Did What, Where, and When"  
181

Peng, Yu-Kun; Zhang, Yao-Xue; Guo, Guan-Fei (China): "Remote Access Optimization for Network Application Loading"  
186

Shorfuzzaman, Mohammad; Karim, Lutful (Canada): "Introducing Network Processors in Content-Based Routing Design"  
192

Sirirangsi, Pakavadi (Thailand): "E-Activities Via Wireless Network: A Case at Coffee Restaurants in Bangkok, Thailand"  
197

Stork, Milan; Hrusak, Josef; Mayer, Daniel (Czech Republic): "Filter Banks Based on Continuous-Time Asymptotic Filters"  
203

Subhani, Muhammad Farrukh (Pakistan): "Multimedia Wireless Communication"  
209

Wilhelm, Thomas; Beyer, Andreas; Hollunder, Jens (Germany): "Patterns in Weighted Networks"  
217

Network Architectures, Topologies and Protocols

Ahuja, Sanjay P.; Eggen, Roger; Chaudhry, Shalaka (USA): "On the Performance Evaluation of a Campus LAN"  
222

Chen, Yong; Hu, Aiqun (China): "An Algorithm for Terminal-Pair Reliability in Communication Networks with Unreliable Nodes"  
228

Cheng, Winnie; Wei Tan, Kelvin Tuan (USA): "A New Perspective on the Development of Open-Source IP"  
234

Hu, Jiuchuan; Zhang, Hongke; Zhang, Sidong (China): "Distance Vector Protocol QoS Routing Based on Service Resource Provision Balance between Applications and Networks"  
238

Kim, Byoung Chul; Cho, Song Yean; Park, Yong Seok; Kang, Byung Chang (South Korea): "Reducing the Size of the Forwarding Table in a Clustered Router Architecture"  
244

Luntovskyy, Andriy; Gütter, Dietbert; Panchenko, Andriy; Pfeifer, Gert; Schill, Alexander (Germany): "CANDY: Integrated Environment for Network Design"  
252

Ramakrishna Rao, D. T. V. (India): "Faster Checksumming for Tunneling"  
258
Vashi, Mehul B.; Francia, Guillermo A.; Phuong, Le; Kilaru, Aditya (USA): "The Design and Analysis of a Dynamic Hybrid Ad-Hoc Wireless Routing Algorithm"

**Network Management Theory, Methodologies, Technologies and Systems**

Bunke, Horst *; Dickinson, Peter J. **; Kraetzl, Miro ** (* Switzerland, ** Australia): "Matching Sequences of Graphs with Applications in Computer Network Analysis"

Cheng, Hua; Shao, Zhiqing; Fang, Yiquan (China): "Wavelet Packet Based Hurst Parameter Estimation"

Małowidzki, Marek (Poland): "XML-Based Configuration Repository for a Mobile Broadband Network"

Mahadevan, Venkatesh; Braun, Robin; Chaczko, Zenon (Australia): "An Exploratory Study on the Role of Performance Evaluation in Future Telecollaboration Environments"

Ok, Ki-Sang; Ha, Jeong-Ho; Choi, Shin-Ho; Ahn, Chi-Hong (South Korea): "The Design of Service Management System Using Policy-Based Network Management"

Rubio, Javier *; Baliosian, Javier *; Serrat, Joan *; Angeles, Alfonso ** (* Spain, ** Mexico): "A Policy-Based Alarm Management Strategy for IP/MPLS over Transport Networks"

Tamarapalli, Venkatesh; Srinivasan, S. H. (India): "Protection Mechanisms in Multi-Domain Survivable WDM Networks"

Teixeira, Marcio Andrey; Barbar, Jamil Salem (Brazil): "Improving End-System Performance and Management with the Use of the SNMP"

Zhang, Dongli *; Xing, Guangming ** (* Canada, ** USA): "A CORBA-Based Framework for Traffic Monitor in Heterogeneous Network Environment"

**Network Security and Security Technologies**

Ahn, Youngjun; Wee, Kyubum; Hong, Manpyo (South Korea): "A Path Identification Mechanism for Effective Filtering against DDoS Attacks"

Choi, Daeseon; Jin, Seunghun; Yoon, Hyunsoo (South Korea): "Reputation Based Self-Organized Public Key Management for Mobile Ad Hoc Network"

Elleithy, Khaled M.; Blagovic, Drazen; Cheng, Wang; Sideleau, Paul (USA): "Implementation and Comparison of Denial of Service Attack Techniques"
Fujita, Naoyuki (Japan): "Some Protection Methods for SYN Flood DoS Attacks and "TP-Reset""

Gu, Ruei-Ting; Chung, Kuo-Huang; Huang, Ing-Jer (Taiwan): "The Implementation and Performance/Cost/Power Analysis of the Network Security Accelerator on SoC Applications"

Kim, Do-Woo; Han, Jong-Wook; Ju, Hong-Il; Lee, YunKyung (South Korea): "A Study on Security Requirements in Digital Home Environment"

Kim, Taesung; Roh, Jong Hyuk; Choi, Daeseon; Cho, Yeongsub; Jin, Seunghun (South Korea): "Single Sign-On and Access Control for Network Security Service"

Kim, Sinjae; Wee, Kyubum; Hong, Manpyo (South Korea): "Defending against Distributed Denial of Service Attacks with Bating Puzzle Auction"

Kim, Cheol-Seong; Kim, Jong-Wook; Yun, Dong-Sik; Ahn, Chen-Hong (South Korea): "A Next Generation OSS Framework Using Web Service and Workflow Technologies"

Lee, Hyunju; Lee, Hyungjoon; Hong, Manpyo (South Korea): "DDoS Defense Using Pi"

Lee, Yong-Hwan; Roh, Byoeng-Hee; Yoo, S. W. (South Korea): "Traffic Characterization and Control of Network Attacks with Spoofed IP Addresses on the Internet Backbone Links"

Nur, Mohammad M. *; Syed, Mahbubur R. *; Bignall, Robert J. ** (* USA, ** Australia): "IP Traceback Techniques for Intrusion Tracking"

Sato, Tomoaki; Miyamori, Daisuke; Sakuma, Rena; Fukase, Masa-Aki (Japan): "Unauthorized Port Access Detection in the H-HIDS"

Su, Heng; Ju, Jiun-Bin (China): "Evaluating Credibility of Shared Messages among Cooperative Intrusion Detection Systems"

Yoon, Eun-Jun; Ryu, Eun-Kyung; Yoo, Kee-Young (South Korea): "Weakness and Solution of Deniable Authentication Protocol Based on Diffie-Hellman Algorithm"

Tele-Communication Systems, Technologies and Applications

Akl, Robert; Parvez, Asad (USA): "Impact of Interference Model on Capacity in CDMA Cellular Networks"
Alcocer-Ochoa, Alberto; Parra-Michel, Ramón; Kontorovitch, Valerí Ya. (Mexico): "MIMO Communication Channel Characterization Using Orthogonalizations"

Gyires, Tibor (USA): "Quality of Service Provisioning in Integrated 3G Wireless and Wireless LANs with Multimedia Traffic"

Harno, Jarmo (Finland): "Business Scenario Analyses for Different Kind of Telecom Market Players in the Advent of 3G Technologies"

Hong, Daniel Won-Kyu; Hong, Choong Seon; Young-II, Kim; Kim, Jong-Wook; Kim, SungBo; Kim, Cheol-Seong; Park, Jae-Woo; Yun, Dongsik; Ahn, Che-Hong (South Korea): "A Workflow-Based Service Delivery Architecture for Providing MPLS VPN Service"

Kora, Sudhir; Ham, Chan; Phillips, Ronald (USA): "An Innovative Parking Management System Using Wireless Sensor Networks"

Mahadevan, Venkatesh; Braun, Robin; Chaczko, Zenon (Australia): "An Advanced QoS Index Framework for a Next Generation Internet Application"

Nguyen, Luc T. (USA): "Automatic and Selective Rerouting as a Congestion Control Mechanism for IP/MPLS Networks"

Rupp, Stephan; Lopez Aladros, Rodolfo; Banet, Franz-Josef; Siegmund, Gerd (Germany): "Flexible Universal Networks - A New Approach to Telecommunication Services"

Sarker, Jahangir H.; Jäntti, Riku (Finland): "On the Connectivity Modeling of Wireless Ad Hoc Networks"

Soon, Chin Boo; Gutiérrez, Jairo A. (New Zealand): "Mobile Commerce over Wireless Local Area Networks"

Soujeri, Ebrahim Ali; Bilgekul, Hüseyin (Cyprus): "Multi-User Detection of CDMA Signals Using Hysteretic Hopfield Neural Networks"

Soy, Mustafa; Bodendorf, Freimut (Germany): "Bridging the Gap between Peer-To-Peer and Client-Server Environments - A Hybrid Communication Management Approach for Virtual Project Teams"

Yun-Yong, Zhang; Zhi-Jiang, Zhang; Yun-Jie, Liu (China): "Research of Middleware Technology for Next Generation Network"