2011 4th IFIP International Conference on New Technologies, Mobility and Security

(NTMS 2011)

Paris, France
7 – 10 February 2011
TABLE OF CONTENTS

Digital Fountains + P2P for Future IPTV Platforms: A Test-bed Evaluation .................................................. 1
G. Marfia, M. Roccuti, A. Cattaneo, A. Sentinelli, A. Vitali, L. Celetto, M. Gerla

Message Denial and Alteration on IEEE 802.15.4 Low-Power Radio Networks .......................................... 6
Colin P. O'Flynn

High Power Efficiency and Low Nonlinear Distortion for Wireless Visible Light Communication .................. 11
Sang-Bum Ryu, Jae-Hoon Choi, Junyeong Bok, Haikyu Lee, Haung-Gyoon Ryu

Inductive Intrusion Detection in Flow-Based Network Data using One-Class Support Vector Machines .......... 16
Philipp Winter, Eckehard Hermann, Markus Zeilinger

Cooperative Mobility Management in Multihomed End-to-End Communications ....................................... 21
Xiaofei Zhang, Thi Mai Trang Nguyen, Guy Pujolle

An Optimal Guard-intervals Based Mechanism for Key Generation from Multipath Wireless Channels ............ 26
Youssef El Haif Shedadah, Dieter Hogrefe

Dynamic Spectrum Hole Management in Cognitive Radio ........................................................................ 31
Ines Aissa, Mourir Frikha, Sami Tabbane

Active ISP Involvement in Content-Centric Future Internet ........................................................................ 35
Salekhi Islam, Jean-Charles Gregoire

Providing Resistance against Server Information Leakage in RFID Systems .............................................. 40
Suleyman Kardas, Tubitak Uekae, Albert Levy, Burak Murat

A Mobility Management Solution for Simultaneous Mobility with mSCTP ............................................. 47
Kaibo Zhou, Gang Liu, Yong Yao, Adrian Popescu

Improvements to Inter System Handover in the EPC Environment .............................................................. 52
S. Frei, W. Fuhrmann, A. Rinkel, B. V. Ghita

Secure Instant Messaging Protocol for Centralized Communication Group .............................................. 57
Mohamed Hamdy Eldigawly, Khaled Alghathbar, Muhammad Khurram Khan, Hassan Elkamchouchi

Secure Delivery of Equipment Identity from Vendor to Operator ................................................................. 61
Konstantin Shemyak, Jussi Kosonen

Assessing the Impact of Signaling on the QoE of Push-based P2P-TV Diffusion Algorithms .......................... 66
Dario Rossi, Paolo Veglia

MMOR: A Mapping Method for Ontology Registration to Improve XMDR .............................................. 71
Jeong-Dong Kim, Jiseong Son, Doow-Kwon Baik

Performance Evaluation of Storage-Independent Model for SPARQL-to-SQL Translation Algorithms .......... 76
Jiseong Son, Jeong-Dong Kim, Doo-Kwon Baik

Performance of Localization Algorithm under Corrupted Measurement Data and Lopsided Sensor Arrangement .................................................................................................................. 80
Hiroyuki Hatano, Tomoharu Mitauni, Kazuya Sugiyama, Yoshitaka Kawahara

3GPP IMS-based Inter-Device Collaboration ................................................................................................. 84
Syed Hussain, Shin-Ichi Isebe, Kanis Mahdi, Lampyeong Kim, Arnaud Vedrine, Andreas Kunz, Antoine Mouquet, Rajat Ghat, Mario Modella

Sinks Mobility Strategy in IPv6-based WSNs for Network Lifetime Improvement ........................................ 90
Leila Ben Tassad, Bernard Tournancheau

Comparisons of Home Area Network Connection Alternatives for Multifamily Dwelling Units ................... 95
Jun Wang, Victor C. M. Leung

M2ANET: a Mobile Medium Ad Hoc Network ............................................................................................... 100
John Dedourek, Przemyslaw Pochec

QoS and Admission Probability Study for a SIP-based Central Managed IP Telephony System .................. 104
Jose Saldana, Jenifer Narua, Julian Fernandez-Navajas, Jose Ruiz-Mas, Eduardo Viruete Navarro, Jose I. Aznar

The Flexible Bus Systems Using Zigbee as a Communication Medium ....................................................... 110
Raz Iqbal, Yukinatsu Kenichi, Tatsuya Ichikawa

QMoEs: A Bandwidth Estimation and Monitoring Tool for QoE-Driven Broadband Networks .................. 115
Jose I. Aznar, Eduardo Viruete Navarro, Julian Fernandez-Navajas, Jose Ruiz-Mas, Jose Salandra, Jenifer Murillo

Proposal and Evaluation of a Dynamic Resource Allocation Method based on the Load of VMs on IaaS .......................................................... 119
Atsuo Inomata, Talski Morikawa, Minoru Ikebe, Yoshihiro Okamoto, Satoru Noguchi, Kazutoshi Fujikawa, Hideki Sunahara, Mizanur Rahman
HTTP Acceleration Over High Latency Links ................................................. 125
Paul Davern, Noor Nashid, Ahmed Zahran, Cormac J. Sreenan

Requirement Considerations for Ubiquitous Integration of Cooperating Objects .................. 130
Stamatis Karnouskos, Vladimir Villasenor-Herrera, Muhammad Haroon, Marcus Handte, Pedro Jose Marron

Information-Centric Multiaccess P2P Networks .................................................. 135
Olli Mämmelä, Kostas Pentikousis, Petteri Mannesrato

Distributed Resource Allocation Mechanism for SOA Service Level Agreements .................. 139
Kostas Katsialis, Lamdros Tassilas, Yannis Viniotis

TCP Over Low-power and Lossy Networks: Tuning the Segment Size to Minimize Energy Consumption .......................................................... 145
Ahmed Ayadi, Patrick Maille, David Ros

Cross-layer Secrecy Design on TCP/IP and 802.11 for Energy Saving .......................... 150
Fuliana A. Urbano, Gomila J. L. Ferrer, Capella M. Payeras, Campos M. Hinares, Roter H. Huguet

Coverage-Aware Node-Disjoint Multipath Selection in Wireless Multimedia Sensor Networks .............................................. 155
Daniel G. Costa, Luiz Affonso Guedes

High Performance Implementation of Snow3G Algorithm in Memory Limited Environments 160
Vaidyanathan Jairaj, Jaakka Pohjonen, Konstantin Shemyak

TCP over 6LoWPAN for Industrial Applications: An Experimental Study ....................... 164
Tiancong Zheng, Ahmed Ayadi, Xiaoran Jiang

The Effect of Unwanted Internet Traffic on Cellular Phone Energy Consumption ............ 168
Ismo Paustinin, Jukka K. Nurminen

How resistants are SBoxes to Power Analysis Attacks? ......................................... 173
Keen Hong Boey, Maire O’Neil, Roger Woods

Deeploc: Discrete Indoor People Location Application ........................................... 179
Sergio Luzan, Juan Suarez-Moreno, Andres Cabrera-Losoya, Fernando Cerdan

eTNet: A Smart Card Network Architecture for Flexible Electronic Commerce Services ........ 184
Takeshi Yashiro, M. Fahim Ferdous Khan, So Ito, Masahiro Besohe, Shinsuke Kobayashi, Tonomori Usaka, Noboru Koizuka, Ken Sakamura

A Taxonomy of Wireless Sensor Networks with QoS ........................................... 189
Vasco Pereira, Jorge Sá Silva, Jorge Granjal, Ricardo Silva, Edmundo Monteiro, Qiang Pan

Mobility Assisted Routing in Mobile Ad Hoc Networks .......................................... 193
Kazi Atiqur Rahman, Kemal E. Tepe

Performance of the Controlled Randomness Protocol on .NET Compact Framework Embedded Systems .......................................................... 198
Kyriakos G. Stefanidis, Artemios G. Voyiatis, Dimitrios N. Serpanos

OST-Tree: An Access Method for Obfuscating Spatio-Temporal Data in Location Based Services ..................................................... 203
Quoc Cuong To, Tran Khanh Dang, Josef Kung

Extended Handover Keying and Modified IEEE 802.21 Resource Query Approach for Improving Vertical Handoff Performance .......................... 208
Ahmed H. Zahran, Cormac J. Sreenan

Beamforming with Partial Channel Knowledge ...................................................... 215
Shimi Shilo, Anthony J. Weiss, Amir Averbuch

A Scheme of H.264/SVC Video Broadcasting Over IEEE 802.11 WLAN ....................... 220
Young-Hwan Kim, Hae-Ryeon Park, Jung-Bong Suk

Services Composition based on Next-Generation Service Overlay Networks Architecture .......................................................... 225
Christian Makaya, Ben Falchuk, Dona Chea, F. Joe Lin, Subir Das, Manabu Ito, Satoshi Komorita, Tsunezaka Chiba

Extending Beacon-Enabled IEEE 802.15.4 to achieve Efficient Energy Savings: Simulation-Based Performance Analysis .............................. 231
Mounib Kanafer, Mounine Guennoun, Husein T. Moufah

A Self-stabilizing Algorithm for Stable Clustering in Mobile Ad-hoc Networks ............. 236
Junpei Kuroiwa, Yukiko Yamauchi, WeiHua Sun, Minoru Ito

An Algorithm for Restraining the OVSF Codes Shortage in HSDPA ..................................................... 243
Jahangir Dadkhah Chimeh, Seyed Mahmoud Mousavinjed, Aziz Mahmodi

Rong Xie, Fei Tong, Won-Hyuk Yang, Young-Chon Kim

Adaptive Fuzzy-MAC for Power Reduction in Wireless Sensor Networks .................... 252
Erwing R. Sanchez, Bartolomeo Montrucchio, Laura M. Murillo, Maurizio Rebadengo

Wireless Alarming and Routing Protocol for Earthquake Early Warning Systems ............ 257
Jens Nachttigall, Jens-Peter Redlich

Well-Conditioned Sensor Placement for Range-Only Localization ............................... 263
Kamal Shadi, Hooman Lal Dehghani, Iman Gholampour
A Path Selection Criterion for Advance Resource Reservation
Eraldo Silveira, Jean-Marie Farines, Michel Diaz

Statistical Analysis of Self-similar Session Initiation Protocol (SIP) Messages for Anomaly Detection
Neda Hantehzadeh, Anil Mehta, Vijay K. Gurbani, Lalit Gupta, Tin Kam Ho, Gayan Wilathgamuwa

Pre-allocation of DHCP Leases: a Cross-layer Approach
Andre Zaquette, Carlos Frade

Neighbour Discovery for Transmit Power Adjustment in IEEE 802.15.4 using RSSI
Wilawan Rukpakavong, Iain Phillips, Lin Guan

An Efficient Paging Scheme for Terminal Mobility using Personal Mobility Management Information in Interworked Fixed and Mobile Networks
Yun Won Chung

Femtocell Traffic Offload Scheme for Core Networks
Jaehoon Roh, Yong Gyoo Lee, Yungja Ji, Taehyo Ahn

An Efficient Clustering Scheme for Sensor Networks Based on Intra-cluster Connectivity
Jiehui Chen, Mariam B. Salim, Mitsui Matsumoto

Energy Efficient Data Restoring After Power-Downs for Wireless Sensor Networks Nodes with Energy Scavenging
Konstantin Mikhailov, Jouni Tervonen

On the Security of Two Fuzzy Identity-Based Signature Schemes
Syh-Yuan Tan, Shue-Hua Heng, Bok-Min Gai

Ensuring Low Cost Authentication with Privacy Preservation in Federated IMS Environments
K. Bekara, Y. Ben Mustapha, S. Bouzefrane, K. Garri, M. Laurent, P. Thonel

A Semi-Markovian Individual Model of Users for P2P Video Streaming Applications
Grégory Bonnei, Ihsan Ullah, Guillaume Doyen, Lionel Fillatre, Dominique Gaitt, Igor Nikiforov

A Batch Authentication Protocol for V2G Communications
Huaqun Guo, Yongdong Wu, Hongmei Chen, Moada Ma

BitTorrent’s Mainline DHT Security Assessment
Juan Pablo Timpanaro, Thibault Cholez, Isabelle Chrisment, Olivier Fesot

mobSim – A Network Mobility Simulation Tool for Very Large-Scale Scenarios
Pedro Vale Pinheiro, Fernanda Boavida

The Problem Of NIDS Evasion In Mobile Networks
Michele Colajanni, Luca Dal Zotto, Mirco Marchetti, Michele Messori

Replication Schemes in Unattended Wireless Sensor Networks
Domenico Vitali, Angelo Spagnardi, Luigi V. Mancini

Performance Analysis of Node Cooperation with Network Coding in Wireless Sensor Networks
Hani Attar, Dejan Vukobratovic, Lina Stankovic, Vladimir Stankovic

Robust Blind and Secure Biometric Watermarking Based on Partial Multi-Map Chaotic Encryption
Mohamed S. El-Mahallawy, Esam A. Hogras, Ahmed Zein Eldin, Mohamed Waleed Pakhr

Augmenting a Webmail Application with Cryptographic Puzzles to Deflect Spam
Maris Cristina, Bogdan Groza

Interference Modeling and Relay Selection Issue for Amplify-and-Forward IR-UWB Sensor Networks
Jie Jia Chen, L. Clavier, Yong Xi, Alister Burr, N. Rolland, P. A. Rolland

Ontology Based Interoperation for Securely Shared Services: Security Concept Matching for Authorization Policy Interoperability
Ioana Ciuciu, Gang Zhao, David W Chadwick, Quentin Reul, Robert Meersman, Cristian Vasquez, Mark Hibbert, Sandra Winfield, Thomas Kirkham

Anonymization in Intelligent Surveillance Systems
Hauke Vogt, Christoph Bier, Jurgen Bayerer

Managing Access Control in Delay/Disruption Tolerant Networking (DTN) Environment
Enyenihi Johnson, Hatiham Cruickshank, Zhi Li Sun

Selective Reprogramming in Sensor Networks
Daniela Kruger, Dennis Pfisterer, Carsten Buschmann

RMC-MAC: A Reactive Multi-Channel MAC Protocol for Opportunistic Spectrum Access
Sonia Fouariti, Soumaya Hamouda, Sami Tabbane

A Hybrid Stateless QoS Approach for Wireless Mobile Ad hoc Networks
Lyys Khouchi, Ali El Masri, Dominique Gaiti

PM2PLS: Integrating Proxy Mobile IPv6 and MPLS in Wireless Access Networks
Carlos A. Astudillo, Oscar J. Calderon, Jesus H. Ortiz