

Table of Contents

I ruSMART

Role of Context in Smart Spaces

ECSTRA - Distributed Context Reasoning Framework for Pervasive Computing Systems	1
<i>Andrey Boytsov and Arkady Zaslavsky</i>	
A Framework for Context-Aware Applications for Smart Spaces	14
<i>M. Mohsin Saleemi, Natalia Díaz Rodríguez, Johan Lilius, and Iván Porres</i>	
Analysis of the Energy Conservation Aspects of a Mobile Context Broker	26
<i>Saad Liaquat Kiani, Boris Moltchanov, Michael Knappmeyer, and Nigel Baker</i>	
Complex Activity Recognition Using Context Driven Activity Theory in Home Environments	38
<i>Saguna, Arkady Zaslavsky, and Dipanjan Chakraborty</i>	

Smart Spaces Platforms and Smart-M3

Integration of Smart-M3 Applications: Blogging in Smart Conference . . .	51
<i>Dmitry G. Korzun, Ivan V. Galov, Alexey M. Kashevnik, Nikolay G. Shilov, Kirill Krinkin, and Yuri Korolev</i>	
Access Control at Triple Level: Specification and Enforcement of a Simple RDF Model to Support Concurrent Applications in Smart Environments	63
<i>Alfredo D'Elia, Jukka Honkola, Daniele Manzaroli, and Tullio Salmon Cinotti</i>	
Increasing Broker Performance in Smart-M3 Based Ridesharing System	75
<i>Alexander Smirnov, Alexey M. Kashevnik, Nikolay G. Shilov, Harri Paloheimo, Heikki Waris, and Sergey Balandin</i>	
Distributed Deadlock Handling for Resource Allocation in Smart Spaces	87
<i>Rehan Abdul Aziz, Tomi Janhunen, and Vesa Luukkala</i>	

Methods for Studying Smart Spaces

Inter-Agent Cooperative Communication Method Using TupleSpace for Guiding Users to Alternative Actions	99
<i>Nobuo Sato and Kazumasa Takami</i>	
Groups and Frequent Visitors Shaping the Space Dynamics	111
<i>Karolina Baras and Adriano Moreira</i>	
Multi-sensor Data Fusion within the Belief Functions Framework	123
<i>Bastien Pietropaoli, Michele Dominici, and Frédéric Weis</i>	
Dynamic Bayesian Networks for Sequential Quality of Experience Modelling and Measurement	135
<i>Karan Mitra, Arkady Zaslavsky, and Christer Åhlund</i>	

Smart Spaces Solutions

Management of the Products on Display Shelves Using Advanced Electronic Tags Equipped with Ad Hoc Network Communication Capability	147
<i>Kyohei Tanba, Daisuke Kasamatsu, and Kazumasa Takami</i>	
Customized Check-in Procedures	160
<i>Dmitry Namiot and Manfred Sneps-Sneppe</i>	
Architecture and Comparison of Two Different User-Centric NFC-Enabled Event Ticketing Approaches	165
<i>Serge Chaumette, Damien Dubernet, Jonathan Ouoba, Erkki Siira, and Tuomo Tuikka</i>	
Mobile Electronic Memos	178
<i>Giovanni Bartolomeo, Stefano Salsano, and Antonella Frisiello</i>	

II II NEW2AN

Wireless PHY and Power Control

Better Performance of Mobile Devices in Time Frequency Dispersive Channels Using Well-Localized Bases	188
<i>Dmitry Petrov and Timo Hämäläinen</i>	
Analysing and Improving Energy Efficiency of Distributed Slotted Aloha	197
<i>Haidi Yue, Henrik Bohnenkamp, Malte Kampschulte, and Joost-Pieter Katoen</i>	

A Joint Power and Rate Adaptation Scheme in Multicarrier DS/CDMA Communications over Rayleigh Fading Channels	209
<i>Ye Hoon Lee and Nam-Soo Kim</i>	

Ad Hoc Networks

Worst-Case Traversal Time Modelling of Ethernet Based In-Car Networks Using Real Time Calculus	219
<i>Kasper Revsbech, Henrik Schiøler, Tatiana K. Madsen, and Jimmy J. Nielsen</i>	
Infrastructure-Assisted Probabilistic Power Control for VANETs	231
<i>Dmitri Moltchanov, Jakub Jakubiak, and Yevgeni Koucheryavy</i>	
Node Mobility Modeling in Ad Hoc Networks through a Birth and Death Process	238
<i>Carlos A.V. Campos, Luis F.M. de Moraes, Eduardo M. Hargreaves, and Bruno A.A. Nunes</i>	

WSN

Lossy Data Aggregation with Network Coding in Stand-Alone Wireless Sensor Networks	251
<i>Tatiana K. Madsen</i>	
An Asynchronous Scheduler to Minimize Energy Consumption in Wireless Sensor Networks	262
<i>Luca Anchorà, Antonio Capone, and Luigi Patrono</i>	
Mobile Agents Model and Performance Analysis of a Wireless Sensor Network Target Tracking Application	274
<i>Edison Pignaton de Freitas, Bernhard Bösch, Rodrigo Schmidt Allgayer, Leonardo Steinfeld, Flávio Rech Wagner, Luigi Carro, Carlos Eduardo Pereira, and Tony Larsson</i>	
Ubiquitous Sensor Networks Traffic Models for Telemetry Applications	287
<i>Andrey Koucheryavy and Andrey Prokopiev</i>	

Special Topics

Evaluation of RTSJ-Based Distributed Control System	295
<i>Ivan Müller, André Cavalcante, Edison Pignaton de Freitas, Rodrigo Schmidt Allgayer, Carlos Eduardo Pereira, and Tony Larsson</i>	

Test Scenarios for EMS Operation in Hybrid PON System	304
<i>Kyu Ouk Lee, Sang Soo Lee, and Jong Hyun Lee</i>	
A Characterization of Mobility Management in User-Centric Networks	314
<i>Andréa Nascimento, Rute Sofia, Tiago Condeixa, and Susana Sargento</i>	
Network Attack Detection at Flow Level	326
<i>Aleksey A. Gallsev and Andrei M. Sukhov</i>	
An Intelligent Routing Protocol for Delay Tolerant Networks Using Genetic Algorithm	335
<i>Saeid Akhavan Bitaghsir and Faramarz Hendessi</i>	
Simulation + Fundamental Analysis I	
Analysis of the Distribution of the Statistic of a Test for Discriminating Correlated Processes	348
<i>M.E. Sousa-Vieira</i>	
Approximating Performance Measures of a Triple Play Loss Network Model	360
<i>Irina A. Gudkova and Konstantin E. Samouylov</i>	
An Analytical Model for Streaming over TCP	370
<i>Jinyao Yan, Wolfgang Mühlbauer, and Bernhard Plattner</i>	
Traffic Modeling and Measurement	
Characterising University WLANs within Eduroam Context	382
<i>Marangaze Munhepe Mulhanga, Solange Rito Lima, and Paulo Carvalho</i>	
Internet Traffic Source Based on Hidden Markov Model	395
<i>Joanna Domańska, Adam Domański, and Tadeusz Czachórski</i>	
Simulation + Fundamental Analysis II	
New Synchronization Method for the Parallel Simulations of Wireless Networks	405
<i>Stawomir Nowak, Mateusz Nowak, and Paweł Foremski</i>	
Steady State Analysis of Three Node Client Relay System with Limited-Size Queues	416
<i>Olga Galinina, Sergey Andreev, Alexey Anisimov, and Alexandra Lokhanova</i>	

Discrete Markov Chain Model for Analyzing Probability Measures of P2P Streaming Network	428
<i>Aminu Adamu, Yuliya Gaidamaka, and Andrey Samuylov</i>	

Network Performance and QoS

A Mathematical Framework for the Multidimensional QoS in Cognitive Radio Networks	440
<i>Jerzy Martyna</i>	
Hybrid Inter-Domain QoS Routing with Crankback Mechanisms	450
<i>Ahmed Frihka, Samer Lahoud, and Bernard Cousin</i>	
Limited Values of Network Performance and Network Productivity Estimation Approach for Services with Required QoS. Service Benchmarking	463
<i>Denis Andreev, Konstantin Savin, Victor Shalaginov, Viya Zharikova, and Sergey Ilin</i>	

Cooperative

A Cooperative Network Monitoring Overlay	475
<i>Vasco Castro, Paulo Carvalho, and Solange Rito Lima</i>	
Decision of Transmit Relays and Transmit Power of Double Opportunistic Transmit Cooperative Relaying System in Rayleigh Fading Channels	487
<i>Nam-Soo Kim and Ye Hoon Lee</i>	

P2P

GROUP: A Gossip Based Building Community Protocol	496
<i>Ranieri Baraglia, Patrizio Dazzi, Matteo Mordacchini, Laura Ricci, and Luca Alessi</i>	
A Study on Upload Capacity Utilization with Minimum Delay in Peer-to-Peer Streaming	508
<i>Geun-Hyung Kim</i>	

Overlay Networks and Content

Content Localization for Non-overlay Content-Aware Networks	520
<i>Piotr Pecka, Mateusz Nowak, and Sławomir Nowak</i>	
On Modelling of Fair Throughput Allocation in Overlay Multicast Networks	529
<i>Michał Kucharzak and Krzysztof Walkowiak</i>	

Applications and Services

Improving IPTV On-Demand Transmission Scheme over WiMax	541
<i>Boris Goldstein and Gerges Mansour</i>	
Event-Driven Content Management System for Smart Meeting Room . . .	550
<i>Victor Yu. Budkov, Alexander L. Ronzhin, S.V. Glazkov, and An.L. Ronzhin</i>	
A Semantic Model for Enhancing Network Services Management and Auditing	561
<i>Carlos Rodrigues, Paulo Carvalho, Luis M. Álvarez-Sabucedo, and Solange Rito Lima</i>	
Behavior of Network Applications during Seamless 3G/WLAN Handover	575
<i>Nickolay Amelichev, Mikhail Krinkin, and Kirill Krinkin</i>	

API and Software

Building Programming Abstractions for Wireless Sensor Networks Using Watershed Segmentation	587
<i>Mohammad Hammoudeh and Tariq A.A. Alsbou'i</i>	
Complexity Analysis of Adaptive Binary Arithmetic Coding Software Implementations	598
<i>Evgeny Belyaev, Anton Veselov, Andrey Turlikov, and Liu Kai</i>	

Video

Video Multicasting in an Autonomic Future Internet with Essentially-Perfect Throughput and QoS Guarantees	608
<i>Ted H. Szymanski</i>	
Splitting and Merging for Bandwidth Exploitation in SVC-Based Streaming Networks	620
<i>Tsang-Ling Sheu and Yi-Chuen Hsieh</i>	

Author Index	633
-------------------------------	------------