

2009 Third International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies

(UBICOMM 2009)

**Sliema, Malta
11-16 October 2009**



**IEEE Catalog Number: CFP0992C-PRT
ISBN: 978-1-4244-5083-1**

2009 Third International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies

UBICOMM 2009

Table of Contents

Preface
Committees
Reviewers

UBICOMM 1: User and Applications I

Investigating Radiation Hazard and Safety Aspects of Handheld Mobile	1
<i>Muzaffar Ahmed</i>	
Measuring Mobile Service Innovation	10
<i>Mari Tiainen, Heli Wigelius, and Antti Lönnqvist</i>	
Methods for Conserving Privacy in Workflow Controlled Smart Environments	16
<i>Matthias Wieland, Carsten Längerer, Frank Leymann, Oliver Siemoneit, and Christoph Hubig</i>	
Experiences from NFC Supported School Attendance Supervision for Children	22
<i>Mari Ervasti, Minna Isomursu, and Marianne Kinnula</i>	

UBICOMM 2: User and Applications II

A Context Sharing Message Broker Architecture to Enhance Interoperability in Changeable Environments	31
<i>Junichi Yamamoto, Hiroyuki Nakagawa, Ken Nakayama, Yasuyuki Tahara, and Akihiko Ohsuga</i>	
Context-Aware Service Infrastructure	40
<i>Ichiro Satoh</i>	

Orthogonal Classification of Middleware Technologies	46
<i>Noha Ibrahim</i>	
PosPush: A Highly Accurate Location-Based Information Delivery System	52
<i>Zhao Junhui and Wang Yongcai</i>	
Personalised Live Sports Event Viewing on Mobile Devices	59
<i>Zhenchen Wang, Stefan Poslad, Charalampos Z. Patrikakis, and Alan Pearmain</i>	
UBICOMM 3: User and Applications III	
Mobile-Aware Web Services	65
<i>Guadalupe Ortiz and Alfonso García de Prado</i>	
Distributed Adaptive Networked System for Strain Mapping	71
<i>Jian Liang, Maryna Lishchynska, and Kieran Delaney</i>	
Dynamic Context-Aware Service Adaptation in a Pervasive Computing System	77
<i>Moeiz Miraoui, Chakib Tadj, and Chokri Ben Amar</i>	
WSN Infrastructure in the UHF Band Applied to Ubiquitous Sensing	83
<i>Perfecto Mariño, Fernando Pérez Fontán, Miguel Ángel Domínguez, and Santiago Otero</i>	
UBICOMM 4: Ubiquitous Multimedia Systems and Processing	
Point-of-Treatment: Touchable E-nursing User Interface for Medical Emergencies	89
<i>Christian Sax and Elaine Lawrence</i>	
Browsing Audio Life-log Data Using Acoustic and Location Information	96
<i>Kiichiro Yamano and Katunobu Itou</i>	
A Reflexive Infrastructure for Context-Aware Applications	102
<i>Carlos Eduardo Tosin and Luiz Lima Jr.</i>	
UBICOMM 5: Ubiquitous Mobile Services and Protocols I	
Multipath Data Transmission for Wireless Thin Clients	108
<i>Cao Lethanhman, Hiromi Isokawa, and Takatoshi Kato</i>	
Mobile Phone-Based Displacement Estimation for Opportunistic Localisation Systems	113
<i>Inge Bylemans, Maarten Weyn, and Martin Klepal</i>	
Elements Affecting Remote Execution Decision on PeerHood Environment	119
<i>Anaël Racine and Jari Porras</i>	
People Mobility Behaviour Study in a University Campus Using WLANs	124
<i>Sandra Sendra, Miguel Garcia, Carlos Turro, and Jaime Lloret</i>	

UBICOMM 6: Ubiquitous Mobile Services and Protocols II

Wireless Identification of Traffic Signs Using a Mobile Device	130
<i>Arto Katajasalo and Jouni Ikonen</i>	
Situation-Aware Data Mining Service for Ubiquitous Environments	135
<i>Aysegul Cayci, João Bartolo Gomes, Andrea Zanda, Ernestina Menasalvas, and Santiago Eibe</i>	
Network Prediction for Adaptive Mobile Applications	141
<i>Ramya Sri Kalyanaraman, Yu Xiao, and Antti Ylä-Jääski</i>	
A QoE Management System for Ubiquitous IPTV Devices	147
<i>Miguel Garcia, Alejandro Canovas, Miguel Edo, and Jaime Lloret</i>	
Electronic Sketch Map Services for Mobile Applications	153
<i>Joo Seong Jeon and Ki Jeong Lee</i>	

UBICOMM 7: Wireless Technologies I

Uplink VoIP Delays in IEEE 802.16e Using Different ertPS Resumption Mechanisms	157
<i>Jani Lakkakorpi and Alexander Sayenko</i>	
Improving Coverage Area Quality Using Physical Topology Information in IEEE 802.16 Mesh Networks	163
<i>Shoichi Takemori, Go Hasegawa, Yoshiaki Taniguchi, and Hirotaka Nakano</i>	
Robust and Accurate Packet Detection and Frequency Offset Compensation for CSS System	169
<i>Seong-Hyun Jang, Seung-Han Baik, Yeong-Sam Kim, and Jong-Wha Chong</i>	
A Fast Bandwidth Request Scheme in IEEE 802.16e OFDMA/TDD systems	173
<i>Namsuk Lee, Sookjin Lee, and Nam Kim</i>	

UBICOMM 8: Wireless Technologies II

RAKE Receiving Methods for IEEE 802.15.4a CSS System	179
<i>Jindoo Jeong, Seonghyun Jang, and Jongwha Chong</i>	
A Reconfiguration Approach Using Ontologies to Save Energy on WSNs	182
<i>Kalil Araujo Bispo, Luiz Henrique Albuquerque de Freitas, Nelson Souto Rosa, Paulo Roberto Freire Cunha, and Cláudia Maria Fernandes de Araújo Ribeiro</i>	
Congestion Control for Multimedia Flows in Multihop Wireless Networks: Case of Chain Topology	188
<i>Abir Ben Ali, Ilhem Lengliz, and Farouk Kamoun</i>	

UBICOMM 9: Ubiquitous Networks I

Secure Wireless Multimedia Sensor Networks: A Survey	194
<i>Luigi Alfredo Grieco, Gennaro Boggia, Sabrina Sicari, and Pietro Colombo</i>	

A Stable Backup Routing Protocol Based on Link Lifetime in Mobile Ad Hoc Networks	202
<i>Wenjing Yang, Xinyu Yang, and Shunsen Yang</i>	
Tiny Function-Linking for Energy-Efficient Reprogramming in Wireless Sensor Networks	208
<i>Seung-Ku Kim, Jae-Ho Lee, Kyeong Hur, and Doo-Seop Eom</i>	
A Composition Algorithm of Appliances for Flexible Integrated Service on Home Network Systems	214
<i>Junsoo Kim, Junya Nakata, Takashi Okada, and Yasuo Tan</i>	
Two-Layered Wireless Sensor Networks for Warehouses and Supermarkets	220
<i>Zhi Zhang, Zhibo Pang, Jun Chen, Qiang Chen, Hannu Tenhunen, Li-Rong Zheng, and Xiaolang Yan</i>	

UBICOMM 10: Ubiquitous Networks II

End-to-End Delay Guarantee for TDMA-Based Ad Hoc Networks with RT-DSR Protocol	225
<i>Jihen Bokri, Sofiane Ouni, and Farouk Kamoun</i>	
A New Commissioning and Deployment Method for Wireless Sensor Networks	232
<i>Bong Wan Kim and Seong-Soon Joo</i>	
Effect of Transmission Rates on the Performance of Ant-Based Routing Algorithms for MANETs	238
<i>Myungjun Oh, Ngo Huu Dung, and Miae Woo</i>	
GPS-Free Localization Schemes for Underwater Wireless Sensor Networks	244
<i>Bo Dong and Ahmed M. Mahdy</i>	
Management of Overlay Networks: A Survey	249
<i>Jianguo Ding, Ilangko Balasingham, and Pascal Bouvry</i>	

UBICOMM 11: Ubiquitous Software and Security

A Security Conscious Service Discovery Framework in Pervasive Computing Environments	256
<i>Mahdi Sharifi, Sayed Gholam Hassan Tabatabaei, Homa Movahednejad, Azizah Abdul Manaf, and Suhaimi Ibrahim</i>	
Modelling Location-Aware Access Control Constraints for Mobile Workflows with UML Activity Diagrams	263
<i>Michael Decker</i>	
GamePod: Persistent Gaming Sessions on Pocketable Storage Devices	269
<i>Shaya Potter, Ricardo Baratto, Oren Laadan, and Jason Nieh</i>	
Evaluating Trust-Based Access Control for Social Interaction	277
<i>Lang Jia, Michael Collins, and Paddy Nixon</i>	

A Recommendation Agent for Mobile Phone Users Using Bayesian Behavior Prediction	283
<i>Yongjun Kim and Sung-Bae Cho</i>	

UBICOMM 12: Collaborative Ubiquitous Systems I

A Framework in Ubiquitous Computing Environment for Providing Intelligent Responses	289
<i>Teddy Mantoro, Chris W. Johnson, and Media A. Ayu</i>	
Smart Spaces for Ubiquitously Smart Buildings	295
<i>Kary Främling, Ian Oliver, Jukka Honkola, and Jan Nyman</i>	
Architecture of Collaboration Platform for Ubiquitous Home Devices	301
<i>Hojin Park, Eui-Hyun Paik, and Nam Kim</i>	

UBICOMM 13: Collaborative Ubiquitous Systems II

The Place and Value of SOA in Building 2.0-Generation Enterprise Unified vs. Ubiquitous Communication and Collaboration Platform	305
<i>Natalia Kryvinska, Lukas Auer, and Christine Strauss</i>	
Policy-Based Hybrid Approach to Service Provisioning in Federations of Personal Networks	311
<i>Malohat Ibrohimovna and Sonia Heemstra de Groot</i>	
Distributed Architecture of a Professional Social Network on Top of M3 Smart Space Solution Made in PCs and Mobile Devices Friendly Manner	318
<i>Sergey Balandin, Ian Oliver, and Sergey Boldyrev</i>	

UBICOMM 14: WIP

A Model-Driven Approach for Building Ubiquitous Applications	324
<i>Philippe Le Parc, Amara Touil, and Jean Vareille</i>	
UbiPILL—A Medicine Dose Controller of Ubiquitous Home Environment	329
<i>Leo Ilkko and Jori Karppinen</i>	
BlueS: Indexing Support for Data Exchange in Ubiquitous Environments	334
<i>Andre Peters and Andreas Heuer</i>	
Location Privacy Through Users' Collaboration: A Distributed Pseudonymizer	338
<i>Pablo A. Pérez-Martínez, Agusti Solanas, and Antoni Martínez-Ballesté</i>	

Author Index