



Mobilware 2010

The Third International ICST Conference
on MOBILE WirelessMiddleWARE,
Operating Systems, and Applications

June 30-July 2
Chicago, IL USA



Wednesday June 30:
IWMMN and MAPPS Workshops

Thursday July 1-Friday July 2:
Mobilware Main Conference

Technical Sponsorship by:



Message from the Mobilware 2010 General Chairs

Paolo Bellavista & Carl K. Chang

We are happy to welcome all of you to ICST Mobilware 2010, the third International ICST Conference on Mobile Wireless Middleware, Operating Systems, and Applications. We are sure that once again this year, the Mobilware conference will provide relevant, fruitful, and enjoyable opportunities for open technical discussion, attracting international researchers from both academia and industry.

Mobilware 2010 has three main goals:

- To provide a forum for high-quality discussions on the various and innovative aspects related to the convergence of mobile wireless communications, portable devices and their platforms, middleware for runtime resource/service management, and mobile applications over heterogeneous, open, dynamic, and wide-scale deployment scenarios;
- To focus on modeling, architecture, and practical implementation issues associated with the design, deployment, and utilization of mobile devices and applications;
- To create a congenial environment for researchers' friendships and networking, in order to enable and leverage cooperation opportunities among tenants of many related sub-disciplines and from many countries.

The Mobilware series has a short history of successful editions that took place in the beautiful Innsbruck, Austria, in 2008 and in Berlin, Germany, in 2009. This year, the enthusiasm, the international stature, and the experience of the local organizers have established the 2010 conference in Chicago, a beautiful vibrant city rich with opportunities. Thanks to the organizers for their tremendous efforts and their skillful handling of the myriad organizational issues typically associated with a relatively "young" conference such as Mobilware'10.

The Co-Chairs of the Technical Program Committee did a wonderful job coordinating the review process of the papers submitted to Mobilware 2010. With the efforts of the members of the Technical Program Committee and the help of volunteers, they undertook the daunting task of rigorously selecting about half of the submitted papers to form a technically strong and well-balanced program.

The success of Mobilware'10 is due in great part to the invaluable efforts of many other volunteers. Gergely Nagy, ICST Conference Coordinator, ensured that the conference is taking place in the best possible environment, through proper budgeting and an unparalleled affinity for sensible prioritization. Carlo Giannelli, the Web and Proceedings Chair, maintained the heart of Mobilware communication to interested researchers, which was used for correspondence, advertisement, etc.

The Publicity Chairs, Andrej Krenker, Jatinder pal Singh, Janise McNair, C. Esteve Rothenberg, Ghadaa Alaa, and Michael Chen, were instrumental in making Mobilware'10 well-known to a growing community of researchers. Special thanks go to Keynote Speakers Ouri Wolfson and Archan Misra, Workshop Chair Jinchun Xia, and to all Workshop Organizers who worked to complement the Mobilware program with opportunities for technical discussion and networking.

We are also very pleased that many distinguished individuals will be speaking at the conference. Their talks will cover current topics and illustrate many important projects from both academia and business in the areas of mobile devices, supports, and applications.

An outstanding conference, however, requires more than outstanding papers, workshop, and distinguished lecturers. It is the presence of you, the attendees and participants from academia and industry, that makes this conference a special occasion. Listen to what our authors have to say and interact with them and with each other. Establish links and create bonds. A conference needs to become a community whose real success can only be measured by the effects it produces over time, by the exchange of ideas and the lasting friendship among participants. Your feedback is welcome to continuously improve the quality of the conference.

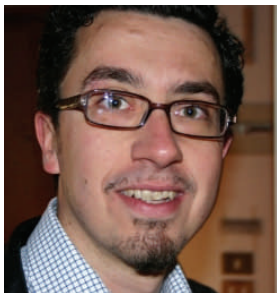
We need your help for that and we are sure you won't be disappointed!

Mobilware 2011 will return to Europe next year. We hope to see many of you there.

Additional information on the past and future conferences as well as on how to participate in the Mobilware activities is available at the permanent Web site of the conference at

<http://www.mobilware.org>.

We sincerely welcome participation from everyone to further enlarge the Mobilware community.



Paolo Bellavista

University of Bologna, Italy

E-mail: paolo.bellavista@unibo.it

URL: <http://lia.deis.unibo.it/Staff/PaoloBellavista/>



Carl K. Chang

Iowa State University, USA

E-mail: chang@iastate.edu

URL: <http://www.cs.iastate.edu/~chang/>



Mobilware 2010

Hyatt Regency Chicago
151 East Wacker Drive
Chicago, Illinois, USA 60601
Tel: +1 312 565 1234
Fax: +1 312 239 4414

MEETING LOCATION

All meetings take place in the West Tower, Bronze Level of the Concourse at the Hyatt. On the 1st floor elevator, press “C” for concourse. Turn right outside the elevator and you should see the registration table for Mobilware 2010. Questions about how to get to the meeting rooms may be addressed to the hotel concierge in the front lobby.

Lunch will be served daily in the Columbian Room.

IWMMN Workshop:

Picasso Room

MAPPS Workshop:

Haymarket Room

Main Conference:

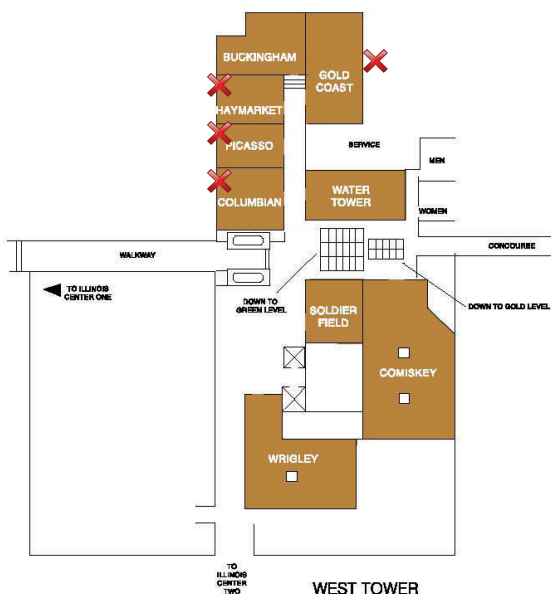
Gold Coast Room

Conference Banquet

Wednesday July 1, 2010

19:00-22:30

Columbian Room



The MOBILWARE 2010 Organizing Committee welcomes you all to Chicago for an excellent technical program, as well as keynote speeches and workshops on a diverse range of cutting-edge topics and challenges in mobile wireless applications and protocols. The conference is dedicated to providing a high profile, leading edge forum for researchers, engineers, and standards developers to discuss and present the latest in academic/ industrial results in middleware and software support for mobile services over next generation wireless networks and portable devices.

Mobilware 2010 Steering Committee:

Imrich Chlamtac (Chair), Create-Net, Italy
Paolo Bellavista, University of Bologna, Italy
Carl K. Chang, Iowa State University, USA

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C. Esteve Rothenberg, CPqD, Brazil
Ghadaa Alaa, Information Technology Institute, Egypt
Michael Chen, III Institution, Taiwan

Web and Proceedings Chair: Carlo Giannelli, University of Bologna, Italy

Conference Coordinator: Gergely Nagy, ICST

IWMMN and MAPPS Workshops (June 30, 2010)

First International Workshop on Mobile Multimedia Networking (IWMMN 2010) - Picasso Room, West Tower

9:00 **Session Opening**—Welcome from the IWMMN Chairs

9:00-10:30 **Morning Session: Wireless Multimedia Networking Practices, Applications and Experiments**
Chair: Honggang Wang

Bootstrapped Low Complexity Iterative Decoding Algorithm for Low-Density Parity-Check (LDPC) Codes

Albashir Mohamed, Maha Elsabrouty, Salwa El-Ramly

Quick Prototyping of Multifacete Interface for Healthcare Wireless Sensor Network
Rahul Dubey, Hong Liu

10:30-11:00 **Coffee Break**

11:00-12:30 **Morning Session: Wireless Multimedia Networking Practices, Applications and Experiments**
Chair: Wei Wang

An Evaluation of Mobile End Devices in Multimedia Streaming Scenarios

Michael Ransburg, Mario Jonke, Hermann Hellwagner

An Extended IGMP Protocol for Mobile IPTV Services in Mobile WiMAX

Eunjo Lee, Sungkwon Park, Joohan Lee, Phooi Yee Lau

12:30-14:00 **Lunch Break**

14:00-15:30 **Afternoon Session: Wireless Multimedia Networking Theories, Current Benchmark, and Strategy Optimization**
Chair: Wei Wang

Optimal Expected Discounted Reward of a Wireless Network with Award and Cost
Wenlong Ni, Wei Li, Demetrios Kazakos

A Spectrum Sharing Scheme in Two Cellular Wireless Networks

Yuhong Zhang, Wei Li

A Perspective on Estimation of Available Capacity in Wireless Networks

Ramesh Babu

Mobile Healthcare Infrastructure with QoS and Security

Afsheen Mughal, Mohammed Raza Kanjee, Hong Liu

15:30-16:00 **Coffee Break**

16:00-17:30 **Afternoon Session: Wireless Multimedia Networking Theories, Current Benchmark, and Strategy Optimization**
Chair: Honggang Wang

A Survey on the Cross-layer Design for Wireless Multimedia Sensor Networks
Honggang Wang, Wei Wang, Shaoen Wu, Kun Hua

A Survey on Cognitive Radio Networks
Jingfang Huang, Honggang Wang, Hong Liu

A Comprehensive P-Persistent Algorithm in Multi-channel and Multi-interface Cognitive Network
Junwei Lv, Weili Lei, Tigang Jiang

International Workshop on Mobile and Location-based Business Applications (MAPPS 2010) - Haymarket Room, West Tower

13:30-14:15 **Invited talk**
Title: Next Generation of ICT Business Applications
Speaker: Eduard Babulak (University of the South Pacific, Fiji)

14:15-15:45 **Session 1**

The Relationship Between User Location History and Interests in Products and Services
Joshua Hurwitz, David Wheatley, Young Lee

Predicted and Corrected Location Estimation of Mobile Nodes Based on the Combination of Kalman Filter and the Bayesian Decision Theory
Muhammad Alam, Mazliham Muhammad Suud, Patrice Boursier, Shahrulniza Musa, Jawahir Che Mustapha Yusuf

Enhancing Customer Privacy for Commercial Continuous Location-based Services
David Zhang, Carsten Kleiner, Jens Bertram

15:45-16:15 **Coffee Break**

16:15-17:45 **Session 2**

SociCare: Towards a Ubiquitous Context Aware Mobile Community Emergency System
Mark Bilandzic, Christian Menkens, Julian Sussmann, Daniel Kleine-Albers, Eva Bittner, Armand Golpaygani, Bernhard Mehl, Jonas Huckestein, Othmane Khelil

A Workflow Definition Language for Business Integration of Mobile Devices
Martin Werner, Claudia Linnhoff-Popien, Stephan Verclas

Adaptivity Types in Mobile User Adaptive System Framework
Ondrej Krejcar

17:45-18:30 Invited talk & discussion

Title: Why Mobile Business Applications will be one key success factor for business in the near future

Speaker: Stephan Verclas (T-Systems, Germany)

Mobilware Day 1 (July 1, 2010) - Gold Coast Room, West Tower

9:00-9:30 Session Opening

Welcome from the General and TPC Chairs

9:30-10:30 Keynote 1

Title: Computing Challenges in Intelligent Transportation Systems

Speaker: Ori Wolfson, Professor, Department of Computer Science, University of Illinois, Chicago

10:30-11:00 Coffee Break

11:00-12:30 Session 1: Novel Applications and Communication Protocols for Wireless Networks (Chair: Paolo Bellavista)

A Secure Mobile OTP Token

Fred Cheng, International Technological University and FPC Consultancy, USA

ISI and ICI Suppression for Mobile OFDM System by Using a Hybrid Two Layer Diversity Receiver

Gao Jing, Wada Tomohisa, University of the Ryukyus, Japan

Using Smartphones and Wireless Mobile Sensor Networks to Detect Car Accidents and Provide Situational Awareness to Emergency Responders

Chris Thompson, Jules White, Brian Dougherty, Adam Albright, Douglas C. Schmidt, Vanderbilt University, USA

12:30-14:00 Lunch Break

14:00-15:30 Session 2: Mobility Management and Handoff Management (Chair: Thomas Magedanz)

XtreemOS-MD: Grid Computing from Mobile Devices

Alvaro Martínez, Santiago Prieto, Noé Gallego, Ramon Nou, Jacobo Giralt, Toni Cortes, Barcelona Supercomputing Center, Spain

The Proxy-based Mobile Grid

Azade Khalaj, Hanan Lutfiyya, Mark Perry, University of Western Ontario, Canada

*Access Network Discovery and Selection in the Future Broadband
Wireless Environment*

Marius Corici, Jens Fiedler, Thomas Magedanz, Dragos Vingarzan,
Fraunhofer Institute for Open Communication Systems (FOKUS), Germany

*Internet Connectivity Sharing in Multi-path Spontaneous Networks:
Comparing and Integrating Network- and Application-Layer Approaches*
Paolo Bellavista, Carlo Giannelli, University of Bologna, Italy

15:30-16:00 Coffee Break

**16:00-17:30 Session 3: Human-computer Interface for Mobile Devices
(Chair: Honggang Wang)**

Prototyping Convergence Services on Broadband Networks
Alice Motanga, Andreas Bachmann, Thomas Magedanz, Fraunhofer Institute for
Open Communication Systems (FOKUS), Germany

Adaptive Online Deployment for Resource Constrained Mobile Smart Clients
Tim Verbelen, Raf Hens, Tim Stevens, Filip De Turck, Bart Dhoedt, Ghent University –
IBBT, Belgium

Addressing Challenges with Augmented Reality Applications on Smartphones
J. Benjamin Gotow, Krzysztof Zienkiewicz, Jules White, Douglas C. Schmidt,
Vanderbilt University, USA

Location Cognition for Wireless Systems: Classification with Confidence
Stefan Aust, Tetsuya Ito, NEC Communication Systems, Japan; Peter Davis,
Telecognix Corporation, Japan

19:30-22:30 Conference Banquet: Location TBA

Mobilware Day 2 (July 2, 2010) - Gold Coast Room, West Tower

**9:00-9:30 (optional) Internal/public meeting of the Mobilware+Workshops
Organizing Committees**

9:30-10:30 Keynote 2
Title: Event Processing on Mobile Phones: Mobile 3.0?
Speaker: Archan Misra, Senior Scientist, Telcordia Technologies

10:30-11:00 Coffee Break

11:00-12:30 Session 4: Mobile intelligent Middleware (Chair: Ying Cai)

*Towards an Elastic Application Model for Augmenting Computing Capabilities
of Mobile Platforms*
Xinwen Zhang, Sangoh Jeong, Anugeetha Kunjithapatham, Simon Gibbs, Samsung
Information Systems America, USA

A Self-Organizing Approach for Building and Maintaining Knowledge Networks
Gabriella Castelli, Marco Mamei, Franco Zambonelli, University of Modena and Reggio Emilia, Italy

Dynamic Adaptive Middleware Services for Service Selection in Mobile Ad-hoc Networks
Rogerio Garcia Dutra, Moacyr Martucci Jr., University of Sao Paulo, Brazil

12:30-14:00 Lunch Break

14:00-15:30 Session 5: Location-aware and Context-aware Networking and Computing (Chair: Chris Thompson)

An Object-Oriented Model in Support of Context-Aware Mobile Applications
Felix Dobslaw, Aron Larsson, Theo Kanter, Jamie Walters, Mid Sweden University, Sweden

A Context Aware Interruption Management System for Mobile Devices
Sina Zulkernain, Praveen Madiraju, Sheikh Iqbal Ahamed, Marquette University, USA

Applying Behavioral Detection on Android-based Devices
Asaf Shabtai, Yuval Elovici, Ben-Gurion University, Israel

Context-enhanced Web Service Invocations in Mobile Business Processes
Heinz-Josef Eikerling, University of Applied Sciences Osnabrueck, Germany

15:30-16:00 Coffee Break

16:00-17:00 Session 6: Short Papers (Chair: Paolo Bellavista)

Power Aware with the Survivable Routing Algorithm for Mobile Ad hoc Networks
Golla Varaprasad, B.M.S. College of Engineering, India

Testing and Evaluating of Predictive Data Push Technology Framework for Mobile Devices
Ondrej Krejcar, VSB Technical University of Ostrava, Czech Republic

Service Space Portability Validation Modeling the Vehicular Context
Mihaly Borzsei, Nokia Research Center, Finland

Experiences from Developing a Context Management System Applied to Mobility
Baptiste Gaultier, Jean-Marie Bonnin, TELECOM Bretagne, France

17:00-17:30 Closing Remarks, Announcement of Best Papers invited to Associated Journals, and Open Discussion about Mobilware'11

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ICST views the advancement of ICT as the axis of the next technological and societal revolution and it aims to create a global, grass-roots organisation of research communities in diverse technical and geographical areas representing the academic, research, regulatory and business sectors.

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Open platforms, such as AGORA, which embraces participative membership, objectivity of evaluation, transparency of recognition and accelerated quality through participation. In addition, AGORA provides a platform for implementing the principles of direct democratic providing representation of all ICST members in the society's activities and decisions, without committees and intermediaries. AGORA provides a way to assess the quality of member participation based on results not seniority.

ICST's WEB based Reputation Index – UCount, which is determined in part by using AGORA's participative concept. ICST provides direct unbiased recognition of your accomplishments and transparent, community objectivity;

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To find more information about ICST and details about becoming a member, please visit the organization website at
icst.org