

## Call for Papers

### **M-MPAC 2011**

## **Third International Workshop on Middleware for Pervasive Mobile and Embedded Computing**

<http://www.smartlab.cis.strath.ac.uk/M-MPAC/>

**A Workshop of Middleware 2011  
Lisbon, Portugal  
12-16 December 2011**

### **Workshop Scope & Themes**

Building on the success of M-MPAC 2009 and 2010 this event aims to carry on development of a research roadmap on essential middleware abstractions, platforms and applications for pervasive mobile and embedded systems.

In recent year, tablet devices and operating systems have gained a prominent spot in the limelight, while the smart phone landscape continues to change with new offerings supporting a variety of sensors, higher resolution and bigger size screens, high definition video recording and playback, and enhanced gaming. Embedded devices like televisions, TV set top boxes, and game consoles have grown beyond their original functionality to home multimedia systems supporting enhanced networking (e.g. IP TV and DNLA), and novel user interaction through 3D displays, and movement detection based controllers. The pervasiveness of such mobile and embedded devices has given rise to a variety of novel applications, such as social web applications, enhanced shopping applications/environments, ad-hoc gaming, context-aware collaborative computing, participatory sensing, etc. Access to cloud computing infrastructures further enhances the capabilities of these devices offering additional opportunities for innovative applications and uses.

Despite these successes, software development for such devices and platforms remains largely ad hoc, while interoperability among applications, devices and platforms is largely elusive. Middleware has a key role to play in overcoming these problems. However, it still unclear what are the appropriate middleware abstractions and supporting infrastructures necessary for such applications. The resource constrained nature and mobility of such devices place unique requirements for middleware and necessitate the exploration of novel programming abstractions, and supporting services, while capabilities like location and context-awareness open new avenues for radical approaches in their development.

In this context, the main workshop themes include, but are not limited to the following themes:

#### **Device platforms**

- Virtualization technologies & applications
- Distributed ensembles
- Interaction paradigms and protocols
- Emerging mobile platforms (e.g. Android, IOS)
- Virtual machines

#### **Data issues**

- Data formats and encoding
- Availability and durability of data in personal networks
- Synchronization of personal devices with other consumer electronics (e.g. cameras, iPods)
- Data portability

#### **Networking**

- Emerging wireless technologies and platforms
- Experiences or case studies with new technologies (WiMax, WiBree, LTE, etc) and devices (MIP, UMPC, wearables, etc)
- Multi-link scenarios: WiFi, Bluetooth, cellular network
- Quality of service and network selection

#### **Security and Privacy**

- Privacy preservation and identity management for device-to-device interactions
- Security architectures balancing risk and utility
- Trust management in device ensembles
- Mobile device data security

#### **Mobile Web**

- Web architectures (REST, Ajax) in pervasive computing
- Context adaptation/management in pervasive computing
- Mobile web scalability and reliability in access
- Content adaptation on mobile devices

#### **Adaptability**

- Context-awareness, location monitoring
- Resource management, cyber foraging, and energy-awareness
- Using cloud infrastructures for computing-intensive tasks and data storage
- Collaborative search
- Autonomics and self-\* properties

### Applications

- Healthcare, entertainment, games, mobile TV, smart spaces, shopping, street navigation, etc.
- Mobile phones in sensor and ad hoc networks
- Application development on mobile and embedded devices
- Programming models

### Experiences and case studies

- Lessons from deployments
- User experiences and field-trials
- Performance studies

### Submission

Submissions must not exceed 6 pages and must be formatted using the ACM proceeding style (see <http://www.acm.org/sigs/pubs/proceed/template.html>). Submission implies that at least one of the authors will register and present the paper. Please submit your paper in PDF at <http://www.cis.strath.ac.uk/external/m-mpac2011/openconf/>

Papers should present a view of the state of the art in a particular sub-problem area, identify specific middleware challenges, and suggest potential avenues for exploration by proposing models, abstractions and infrastructure components addressing these challenges. Approximately two thirds of the workshop will be devoted to the presentation and discussion of these papers, while the remaining third of the time will be devoted to the development of the research roadmap.

Papers will be reviewed by at least 3 members of the program committee. The review process will be based upon identifying the relevance and potential of the position statement to contribute to the elaboration of the roadmap and to stimulate discussion.

All accepted papers will appear in a special workshop proceedings volume in the ACM Digital Library. The publication of the best workshop submissions and the research roadmap in the style of previous events is under investigation.

### Important Dates

- \* Paper submission deadline: **15 August 2011**
- \* Notification of acceptance: **29 September 2011**
- \* Final camera ready papers due: **10 October 2011**
- \* Workshop date: **12 December 2011**

### Program Committee

*Paolo Bellavista*, Università di Bologna, Italy  
*Renato Cerqueira*, PUC-Rio, Brazil  
*Dan Chalmers*, University of Sussex, UK  
*Domenico Cotroneo*, University of Naples, Italy  
*Didier Donsez*, Université Joseph Fourier, Grenoble I, France  
*Markus Endler*, PUC-Rio, Brazil  
*Nikolaos Georgantas*, INRIA, France  
*Rene Meier*, Trinity College Dublin, Ireland  
*Sonia Ben Mokhtar*, CNRS Lyon, France  
*Sougata Mukherjea*, IBM Research, India  
*Tatsuo Nakajima*, Waseda University, Japan  
*Nitya Narasimhan*, Motorola Labs, US  
*Oriana Riva*, Microsoft Research, US  
*Luís Rodrigues*, Technical University of Lisbon, Portugal  
*Romain Rouvoy*, Université Lille 1, France  
*François Taiani*, Lancaster University, UK  
*Sotirios Terzis*, University of Strathclyde, UK (**Workshop Chair**)  
*Venu Vasudevan*, Motorola Labs, US  
*Luis Veiga*, Technical University of Lisbon, Portugal  
*Ian Wakeman*, University of Sussex, UK