Mobile Interaction with the Real World

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ABSTRACT

The main goal of the workshop is to discuss approaches that use a mobile device (e.g. mobile phone, smartphone, PDA) for interactions with objects in the real world. Relevant topics include (but are not limited to) mobile interaction with the real world; mobile devices as user interfaces for terminals and vending machines; and Frameworks, middleware and APIs for the development of applications that take mobile interactions with the real world into account. The workshop combines technical presentations with the presentation of prototypes and focussed discussions to drive interaction between participants.

Categories and Subject Descriptors

H.5.2 [Interfaces and Presentation]**:** User Interfaces - Interaction styles; I.3.6 [Computer Graphics]: Methodology and Techniques - Interaction techniques

General Terms

Performance, Design, Experimentation, Human Factors.

Keywords

Mobile interaction, mobile device, smart objects, real world, user interface generation.

1. THEME

Mobile devices have become a pervasive part of our everyday lives. People have mobile phones, smartphones and PDAs which they take with them almost everywhere. So far these mobile devices have been mostly used for interactions between the user, her mobile device and the services (phone calls, writing short messages and organizer functionalities) she uses.

In the last years we saw inceased interest in using the mobile device for interactions with other people (mobile gaming) and places (location based mobile services, mobile guides). But so far there has been no forum which concentrates on mobile interactions with real world objects. Examples for this are for instances the usage of RFID/NFC equipped mobile devices for interactions with smart objects such as advertisement posters or vending machines; the usage of mobile devices as a universal remote control or the usage of mobile devices for direct interactions (e.g. based on image recognition) with objects in a

museum. When looking at this research area the following questions occur:

- How can these real world services or objects be described (WSDL, UPnP, Java interfaces, XML, task descriptions, etc.)?
- Which kind of interactions with the real world are possible?
- How should systems and services for these kinds of mobile interactions be designed?
- What should these user interfaces look like?
- Can these interfaces be automatically generated?
- Should these real world services be defined in a standardized way (e.g. with semantic web services)?

The main goal of the workshop is to develop an understanding of how mobile devices can be used when interacting with the real world. We will provide a forum to share information, results, and ideas on current research in this area.

Furthermore we aim to develop new ideas on how mobile phones can be exploited for new forms of interaction with the environment. We will bring together researchers and practitioners who are concerned with design, development, and implementation of new applications and services using personal mobile devices as user interfaces.

2. TOPICS

Possible topics for the workshop include (but are not limited to):

- Mobile interaction with real world objects and smart objects
- Using mobile devices as user interfaces for terminals and vending machines
- Frameworks, middleware, architectures and APIs for the development of applications that take mobile interactions with the real world into account.
- Guidelines for mobile interactions with the real world
- Automatic user interface generation for real world interactions
- Semantic web within mobile applications and interactions
- Multimodal interaction taking mobile devices into account
- Usage of sensors of mobile devices (camera, microphone, GPS, etc.) for pervasive applications
- Interaction metaphors for pervasive applications and services

- Augmented, virtual and mixed reality on mobile phones and PDAs (tracking, markers, visualisation)

- Portable media players (e.g. iPod Video) and personal servers as mobile interaction devices

- Interactive context-aware services on mobile devices

- User experience, user studies

- Applications and scenarios

3. ORGANIZERS

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4. WORKSHOP FORMAT

The workshop will feature presentations of research results, ongoing work, ideas, concepts, and critical questions related to the use of mobile devices as user interfaces in the real world. Every presentation will be followed by a corresponding discussion. We invite the presenters to show their demonstrators during their presentation and in the breaks.

5. PUBLICATION

The Workshop provides printed and online proceedings. Furthermore the workshop will be registered in the Computer Science Library of the University of Trier (dblp.uni-trier.de). Further information about - Mobile Interaction with the Real World is available on the workshop web page at http://www.hcilab.org/events/mirw2006/.