Mobile and Ubiquitous Systems: What are the open issues?

Mario Pichler
Software Competence Center Hagenberg (SCCH)
Austria
Background – Two Projects

OXYGEN
Ubiquitous Business

HYDROGEN
Bringing together people, information, and things
Oxygen – Ubiquitous Business

Vision

- Stay in touch with everyone and everything, from wherever you are
- Information access will be available everywhere – will be ubiquitous

Why?

- Immediate access to ideas, goods and services will be of greater value than permanent and ponderous possession
- The formular of the coming age:

ACCESS, ACCESS, ACCESS

(J. Rifkin – The Age of Access, 2001)
Oxygen Results – Building Blocks of Ubiquitous Business

- Ubiquitous Business
  - Natural Interfaces
  - Mobility
  - Networked Infrastructure
  - Intelligent Environments

Usability
- Extended Functionality
- Basic Functionality
Hydrogen – Project Vision

Bringing together People, Information and Things
Goals & Approach

Investigation and evaluation of middleware for:

- Supporting social interaction among people
- Mobile ad hoc cooperation among team members
- Taking into account the very dynamic execution context of applications running on mobile devices

Development of experimental prototypes

- Mobile meeting agenda
- Location aware reminder
Mobile Meeting Agenda
Components: iPAQs and Laptop
Thomas Hofer

Context Framework
Context Sharing

Network (LAN, WLAN, ...)

- Re-Use of context information on more than one device
Hagenberg Location Aware Reminder

- Image of HagenbergMap 4 iPAQ application showing your position and the task to buy some flowers for my wife.

- Image of a Compaq iPAQ pocket PC displaying the reminder task from the HagenbergMap 4 application.
Further Work

Planning PhD thesis

- Question: What are the open issues?
  - Spontaneous interaction and interoperation in mobile and ubiquitous systems
  - Mobile peer-to-peer systems
  - Mobile ad hoc collaboration

I hope that this Summer School will help me defining my research topic
Thanks for your attention!

Mario Pichler
Software Competence Center Hagenberg GmbH
Hauptstraße 99
A-4232 Hagenberg
Tel. +43 7236 3343-898
Fax +43 7236 3343-888
mario.pichler@scch.at
www.scch.at