

Use In Context: Between adaptivity and adaptation in context-based interactions

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Introduction

Context-based systems slowly emerge from research settings to usage practice. Consequently, next to questions dealing with the technological feasibility, questions dealing with the manageability and transparency of context-based services from a user perspective come to the fore. In particular, ubiquitous computing applications help bridging between virtual and real-world context dimensions (with regard to both, virtual and real context sensors and virtual and real context actuators). The resulting system often remains intransparent to its users, it is not immediately accessible recurring on conventionalized behavioural practices.

In order to better support users, context-based systems have to consider the dynamically changing user requirements. To achieve this goal, it is necessary to collect studies on use-related problems in context-based interactions. Furthermore, it is important to identify implications regarding the technological design of interfaces as well as regarding soft- and hardware architectures. Special attention has to be given to the modeling of formal context descriptions and implementation of the various application scenarios as well as to the associated possibilities of manual (adaptability) or automatic (adaptivity) in-use-adjustment. A further special area of interest within a user-oriented perspective is the understanding of problem dynamics in scenarios with multiple-context systems and technologies, and problem dynamics of emergence or evolution of context-based systems. In particular, the following questions have to be addressed and answered for a better understanding and design of context-based systems:

- What practical experiences – positive as well as negative – have been made with regard to the usage of context-based systems in real organizational settings?
- What experiences have been made with adaptation mechanisms (automatic as well as interactive) of such systems in these settings?

- How can relations between context descriptions/models, context sensors and context-based services become describable in a way that they can be inform end users? What framing conditions apply for interfaces that aim to achieve this?
- What experiences have been collected with ontologies and folksonomies? How can systems be designed more practice-oriented?
- How can context architectures be effectively designed for sustainable usages (Context evolution, context adaptation, traceability for end-users)?
- How do architectures look like that are appropriate for the realization of context-adaptive systems that remain modifiable in-use?
- What services have to be provided by such a context-adaptive system?
- What interfaces are needed for a context-dependent adaptation of the system behavior?

The contributions to this workshop address the above questions from different perspectives. Jörg Roth discusses a probabilistic approach for reasoning about continuous context variables. Dirk Veiel, Jörg M. Haake, and Stephan Lukosch introduce a context model and an architecture for context-adaptive cooperative workspaces. Steffen Lohmann and Jürgen Ziegler present a context-sensitive approach for identifying user requirements and illustrate this process for the development and use of web-based systems. Matthias Betz, Benedikt Ley, Volkmar Pipek, and Volker Wulf discuss how RFID technology can be used to tag physical objects and to use these tags as a source for context awareness. Finally, Anna Glukhova, Ralf Klamma, and Matthias Jarke address how to explicitly represent the community context of ongoing change processes and how to adapt the information system design and engineering process to the changing community context.

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