

## **SAiMotion** Situation Awareness in Motion



### **Project description**

Continuous mobile information and communication systems require innovative user interfaces and context-adapted modeling for the selection and presentation of information. „Situation Awareness in Motion“ (SAiMotion) aims to develop situation-driven and needs-adapted information and interaction on ultra portable computers (Personal Digital Assistants), Smart Phones and similar multimedia appliances.

In SAiMotion information presentation is better tailored through proactive selection and context-sensitive presentation of contents with explicit consideration of important environmental variables. Additionally, user-system interaction can be better tailored through the intelligent setting of important interaction parameters supporting typically short interactions of users with mobile systems.

### **Exhaustive situation modeling**

For situation-adapted information presentation and interaction the development of a suitable situation and process model is vital in determining individual information needs on the basis of location, environment, user, task and activity. Moving beyond approaches of location-aware computing, SAiMotion aims to use all relevant situative parameters for proactive information supply and user interaction.

### **Adaptive information presentation**

Ultra portable mobile appliances provide access to relevant information and computer assistance in any given situation of professional and everyday life. Information can be pre-selected for a given frame activity, e.g., a visit to an exhibition, the maintenance of a power plant, or undertaking a trip.

### **Context-adapted interaction**

Context-adapted services are determined by recognition of a user's situation.

This includes physical environment (location, objects in the vicinity, light intensity, noise level, current tasks and goals of the user, the characteristics of the device used, and a profile of user interests and preferences.

### **Location-independent communication**

Situative contexts create a frame of reference for coordinating users at different locations, this allowing the implicit coordination of location-independent communication and cooperation among users. The privacy problem must be resolved, since users are not always willing to disclose their situation (e.g. their location) to the system or other users.

### **Project tasks**

SAiMotion will specify, develop and test technological and methodological solutions with the help of scenario-based prototypes:

- **Navigation** – The support of users in every phase of mobile situations via dynamic presentation of relevant routing and navigation information provides effective navigation in space.
- **Action assistance** – Hints for necessary actions to be taken to successfully achieve the defined goal, linked to navigation and routing information.
- **Supply of resources** – Automatic identification and supply of helpful and necessary resources in the vicinity of the user.
- **Context-sensitive interaction** – Multimodal interaction and presentation mechanisms that adapt to environmental variables such as time of day, noise, type of communication.
- **Anticipated information supply** – Relevant information proactively selected for the present task sequence or interests of the user.