Context aware adaptation of user interfaces

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Editorial to the special issue

Context-aware Adaptation (CAA) of user interfaces involves the identification of the relevant *context* information that surrounds the user during her interaction in order to properly adapt elements of an interactive system aiming at enhancing the end user interaction. The main goals of CAA are improving the usability levels of the system by using the relevant information of the user context to properly transform a system.

In this special issue the authors are presenting various model-based approaches to user interface design and evaluation aiming to support the context aware adaptation.

The paper of Gabillon, Calvary, Mandran and Fiorino relates a user study conducted for understanding the extent to which the dynamic composition of UIs can match user needs. The COMPOSE software tool is used that invites the user to specify his/her goal at any time. Once the goal is specified, COMPOSE generates a UI that provides the user with the *right* information and services in his/her current context of use. The study consists of 26 qualitative interviews and 3 focus groups that are based on a running example.

Motti and Vanderdonckt present the context aware meta-model that has been developed in an attempt to cover the complete adaptation lifecycle, since gathering context information until the generation of the user interfaces in a model-based approach. Four main parts compose the diagram: the context, the agents, the adaptation process and the generation of the user interfaces.

The paper of Varela, Paz-Lopez, Becerra, and Duro presents a user interface (UI) development framework that, relying on model-driven engineering techniques and distributed hardware abstraction technologies, facilitates the development of user interfaces decoupled from the technologies and locations of the devices chosen to interact with the user.

This framework has two main components. A device abstraction technology, the Generic Interaction Protocol (GIP), that encapsulates the specific behaviour of sensor and appliance devices behind a generic interface of distributed interaction actions, and a model-driven UI management system allowing the description of the UI using high level models, whose abstract elements are connected at deploy time to a selection of distributed devices.

Ceret, Garcia Frey, Dupuy-Chessa, and Calvary paper presents UsiComp, an integrated and open framework for designing and executing plastic User Interfaces. UsiComp relies on a service-based architecture. It offers two modules, for design and execution. The corner stone of this approach is M2Flex, a process metamodel that covers the four dimensions of flexibility: variability, granularability, completeness, dispensability.

References

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