

Using HCI Patterns within the Model-Based Development of Run-Time Adaptive User Interfaces

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Abstract: Ubiquitous information access within intelligent environments – like the SmartFactory^{KL} – will become more and more important in everyday life. Model-based User Interface Development (MBUID) processes can help to handle the complexity emerging from the numerous interaction devices and usage scenarios, facilitating run-time adaption of the user interface to the users' needs and preferences. To improve the usability of the user interfaces the designers' knowledge has to be formalized and integrated into the generation process. HCI patterns are a promising approach for representing solutions for reoccurring design problems in an abstract, machine processable format which can be used to improve the model-based development of user interfaces, while still having a lack of formalization, organization and tool support. In our presented approach, we show the feasibility of the integration of HCI patterns (layout as well as task patterns) within an established automatic user interface generation process, which thereby supports the separation between content and visualization (separation of concern) within MBUID.

Keywords: Useware, Model-based Development, HCI Pattern, Ambient Intelligence, Usability.
