



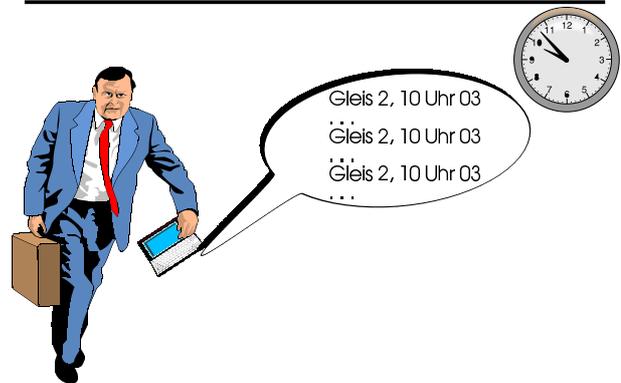
READY: User-Oriented Resource-Adaptivity

Interactive software systems are leaving the desktop and entering into the hustle and bustle of everyday life. Accordingly, the users' time pressure and situational distractions are becoming increasingly important determinants of the quality of interaction. In the project READY of the DFG Collaborative Research Center 378, a user's time and working memory are treated as key *resources* that can be more or less *limited*, depending on the situation. Since 1996 the following issues have been investigated:

- How can an assistance system *recognize* the current resource limitations of the user on the basis of the user's behavior?
- How can a system of this type *adapt* its own behavior so as to take the user's resource limitations into account?

During the first 3-year phase of the project, the following example scenario was employed: A natural language dialog system gives advice by phone to a driver who is repairing his or her car by the side of the road. The system prototype assesses the driver's resource limitations, mainly on the basis of aspects of the driver's speech (e.g., pauses). The system adapts its own behavior, for example, by formulating especially concise or especially easy-to-understand instructions. (A report on this first phase of the research was one of the two papers awarded the "Best Paper" prize at the 1999 International Conference on Intelligent User Interfaces.)

For the current phase of the research, the example scenario is the one illustrated here. The system offers resource-adaptive assistance to a traveler in Frankfurt Airport. The techniques that were developed in the first phase are being extended and differentiated along several dimensions. One central issue concerns techniques for automatically learning the dynamic Bayesian networks that constitute READY's central inference mechanism.



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