## DESIGNING USER-ADAPTED INTERACTION: THE USE-IT SYSTEM

USE-IT is a design support environment dedicated to aiding the design of user-adapted interaction at the lexical level. In the current implementation, USE-IT automates the specification of user-adapted interaction facilities accessible by disabled and elderly people. The role of the USE-IT system is conceptually depicted in Figure 1.

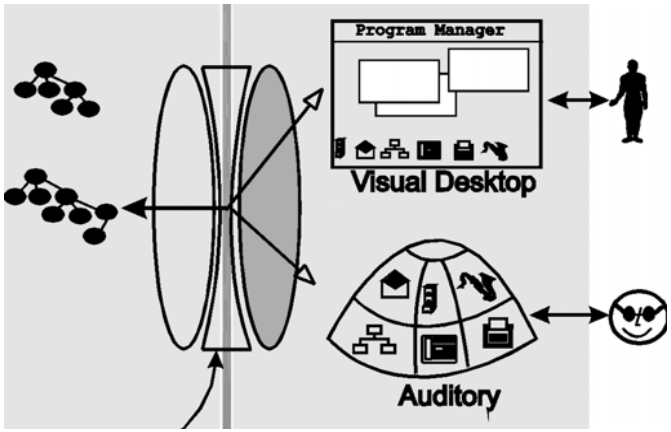



*Figure 1. Adaptation support in USE-IT*

A user-adapted lexical specification scenario depicts maximally preferred assignments to lexical attributes of abstract interaction object classes. USE-IT automatically compiles such a specification through rational selection of maximally preferred design alternatives for each designated attribute. The architectural overview of USE-IT is depicted in Figure 2.

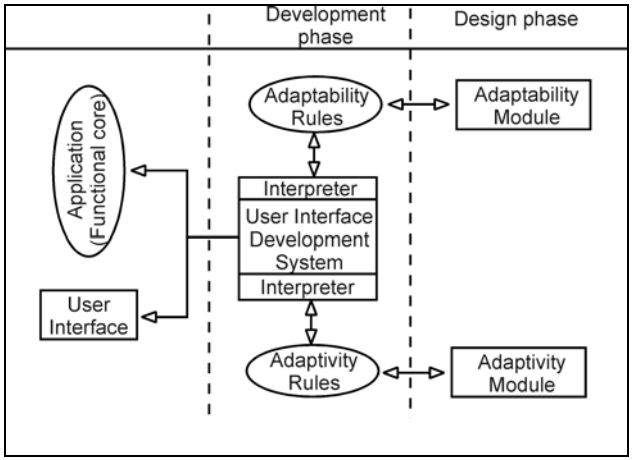



*Figure 2. USE-IT architecture*

## USER MODELLING MODULE

OBJECTIVES

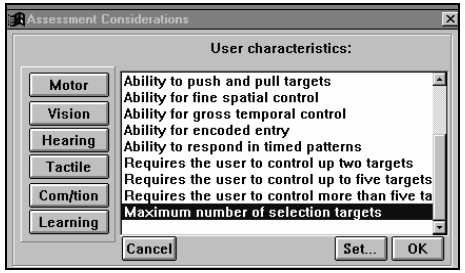
- Guides the designer to elicit user characteristics relevant to the lexical level of interaction.
- Automatic inference of user-oriented constraints (i.e. input/output devices, access policies, interaction techniques, etc) based on the user characteristics and the representation of device requirements.

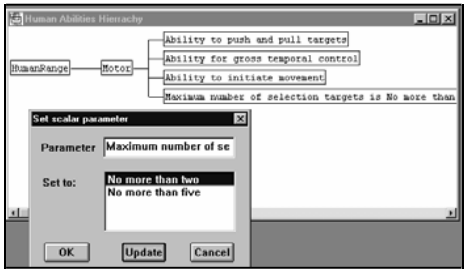
REPRESENTATION / INFERENCING

- UML representation language.
- Condition / action rules.

PROPERTIES

- Expandable UML constructs.
- Device representation reuse.
- User Model reuse.
- Integration of assessment manuals.



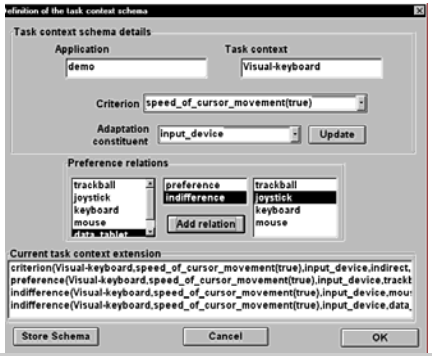

## TASK CONTEXT MODELLING

OBJECTIVES

- To allow the designer to qualify states in the dialogue according to their interaction requirements and preferred design goals.

REPRESENTATION / INFERENCING

- Preference-based scheme for reasoning about design alternatives within a task context.
- Aggregation-based (i.e. simple majority rule) compilation of indifference classes of competing design alternatives within a task context.



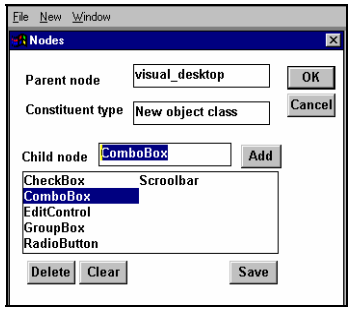
## INTERACTION MODELLING

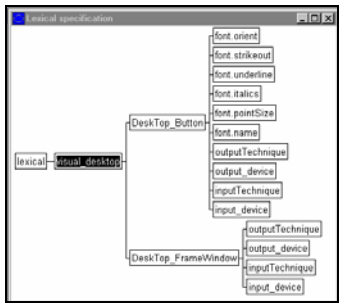
OBJECTIVES

- To allow the designer to develop a representation of lexical components of interaction and define the range of the relevant adaptation constituents.

REPRESENTATION/INFERENCING

- Semantic network representation of interaction elements of a platform.
- Frame-based representations of adaptable interaction object classes.




## USE-IT FOSTERS:

- a knowledge-based approach to the design of user-adapted interaction
- the derivation of assignments to lexical attributes of interaction objects through rational selection of maximally preferred design alternatives
- a knowledge representation scheme allowing the retrieval of the rationale underpinning the user-adapted lexical specification scenario
- multiple inferencing schemes (adaptation engines) for rational selection of maximally preferred adaptation decisions
- compliance with the Unified Development Method
- extended reusability of design components
- flexible representation of interaction facilities which allows translation of adaptation decisions to different formats and toolkit requirements
- an embedded critiquing component capable of inspecting a user-adapted lexical specification for completeness

## THE ACCESS CONSORTIUM

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# The USE-IT Tool

http://www.ics.forth.gr/hci