

Interaction in an ERCIM Virtual Laboratory

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EXTENDED ABSTRACT

The proposed work addresses the Inhabited Information Spaces schema of the ESPRIT I³ initiative. The main objective of the proposed work is to develop a shared and co-operative information environment for the thematic space of the virtual Information Technology laboratory accessible by different user groups in remote sites and with different cultural backgrounds and usage patterns. The virtual Information Technology laboratory constitutes a thematic space in which industry and society meet the academic environment. Contextualised as a European concept the virtual Information Technology laboratory offers benefits for all concerned.

The proposed virtual Information Technology laboratory will be realised experimentally in the context of the participating ERCIM institutes offering a virtual IT ERCIM laboratory open to its members, local/regional community and industry. The virtual laboratory will be developed as a co-operative studio based on a blackboard architecture. A preliminary account of the co-operative functionality include support for shared information management with expandable information types; connection with external (local or distributed) applications; support for different types of usage and users with different educational and cultural backgrounds.

Some of the research challenges to be addressed include presentation, navigation and exploration. Regarding presentation, the consortium will be concerned with the development of techniques for conveying space as perceived by its participants. Identification of suitable metaphors and fusion of them into a multiple metaphor environment capable of exhibiting the following properties: (I) a holistic view of activities within the lab; (ii) engagement and collaboration amongst individual and groups of people; (iii) suitable navigation facilities and space exploration for the different target user groups; and accessibility and participation. The steps to be followed in this research theme will include the following.

- Investigation of the underlying real world metaphors deemed appropriate for the target user groups and their activities.
- Definition of the multiple interaction metaphor environment (i.e. object classes, actors/agents, activities and activity flows, interaction techniques, etc), visualisation of the interaction environment and assignment of suitable behaviour and look and feel.
- Definition of adaptable aspects allowing users to tailor and customise the interactive environment.

Navigation and exploration

Navigation and exploration will form an integral component of the way in which the multiple metaphor environment is going to be implemented to support the target domain-specific activities. It is important to note that such an environment will be capable of presenting alternative interaction faces and facilities based on task and user-specific information. For instance exploration of the lab by a novice user will be different from the corresponding case of

an experienced user. Guidance will be an important element in both cases realised differently to cope with the requirements of the current context of use.

SPECIFIC DEVELOPMENTS

The proposed work is concerned with the following developments. First of all, co-operative interface toolkits embodying properties from selected real world metaphors will be developed to facilitate the construction of the multiple metaphor environment. Possible real world metaphors to be examined include the document metaphor, the book metaphor, the card note, the desktop, the rooms metaphor, the television metaphor, the telephone metaphor.

Secondly, unified interface specification techniques will be developed for co-operative dialogue processing in the multiple metaphor environment. Thirdly, a metaphor design environment including selection of real world objects and corresponding attributes, as well as mapping to interaction components with suitable look and feel and dynamic behaviour. Fourthly, a methodology will be developed for designing interaction metaphors and embedding them to user interface development and implementation.

Finally, on the application site, some of the applications to be developed include a shared file management system for ERCIM papers and documents, point-to-point video conferencing and the ERCIMlab guided tour for visitors.