FLUIDUM

Institut für Informatik

Ludwig Maximilians Universität München

LMU

“Place & Move”: Design of a new moving method for Instrumented Environments

Project Thesis (3 months)

Project Description:

The Fluidum project investigates interaction with different types of information in instrumented environments. The instrumented room in the basement of Amalienstrasse 17 is equipped with a large interactive conference table that uses pen-based input. Thus, using traditional moving methods, such as using the network environment is not feasible due to scrolling and/or browsing through different folders and/or windows. Therefore, new interaction techniques need to be investigated.

One idea is to use a tablet PC that can be placed on the interactive table. The unused areas of the tablet’s screen can then turn semi-transparent to allow “looking through the screen” onto the table’s surface. Information that is displayed on the table is now slightly visible on the tablet’s screen as well. If a user wants to move data onto the tablet, s/he just needs to touch it which immediately transfers it. In addition, the information turns fully visible to give fast feedback.

Vice versa, the user can also move data from the tablet onto the table. To do so, s/he simply moves information units onto an unused area on the tablet’s screen. By holding the data on such a spot, the system begins transferring it to the tablet. Again, the technique will give immediate feedback by turning the information into a semi-transparent visualization. Hence, the system allows moving information back and forth between both devices. During all stages, the correct spatial correlation (position and orientation) between both devices needs to be considered.

For this project thesis, the student is expected to implement the interface described above using camera-based tracking as well as the input gained from the table’s interactive surface. In addition, a suitable scenario – such as gathering images from the table in order to manipulate them – should be implemented and evaluated.

Required skills:

Object-oriented programming language, Interaction design

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Project Thesis
Start: immediately

Keywords:
Tabletop systems, Ubiquitous Computing, Interaction Design, Camera-based Tracking, Pen-based Input, Tablet PC