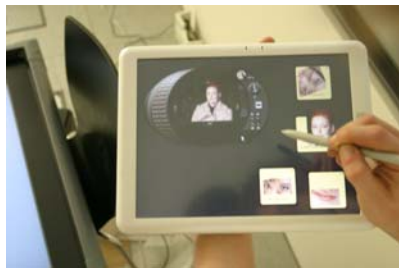

Overcoming Mode-Changes on Multi-User Large Displays with Bi-Manual Interaction

Otmar Hilliges, Lucia Terrenghi

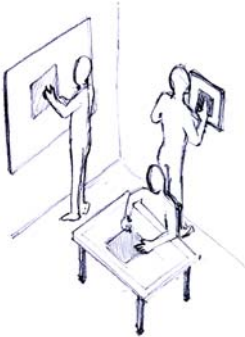
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The Fluidum Instrumented Environment



- Displays of varying size and resolution.
- Standard Interaction techniques do not work:
 - ❑ Lack of mice and keyboards
 - ❑ Users roam the environment
 - ❑ Information spreads over several displays
 - ❑ Information is shared among multiple users

Continuous Information Spaces

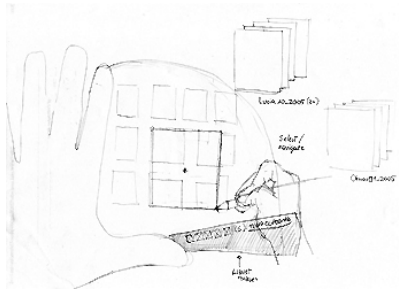


- Displays blend into the environment
- Environments become containers for information.
- Users live in the environment, manipulate it and communicate in it.
- Users can work concurrently and also collaboratively

Identified Issues

- Fixed spatial coordinates for menus do not work any longer.
- Truly parallel input and sharing of data with multiple users.
- Manipulation of visualization and data needs to be restricted to a local scope.

Personalized Interfaces



- Peepholes into information landscapes
 - Transparent overlay attached to the non-dominant hand
 - Reference frame for cognition and interaction.
 - Incorporates functionalities of a toolglass and controls for interaction
 - Allows customized views onto the data without interfering with the work of other users

Avoiding Modechanges

- All Controls are always in place
- Hands don't have to travel to and from spatially fixed menus
- The current task can be perceived as mentally coherent.
- Actions are carried out by clicking „through“ the transparent controls.

Open Challenges

- Tracking and abstracting user input
- How to bring across the vision?
- Threshold and ceiling of the technique?
- Explicit support for (remote) communication?

Thank you!

Otmar Hilliges