Seamless Information Presentation in Instrumented Environments through Object Associated Displays

Antonio Krüger

Universität Münster
antonio.krueger@uni-muenster.de

The work presented in this talk is focussing on user interface issues for instrumented environments. These environments provide distributed presentation media and sensors and in particular entail the observation and recognition of implicit user interactions. This offers the possibility to infer about the users plans and intentions, and to proactively assist in solving the tasks at hand. In such instrumented environments interaction is no more restricted to a narrow set of input devices as in desktop environments, where users interact with their computers via keyboard and mouse. Instead, walls and floors provide physical spaces that can be used both for the presentation and manipulation of information. This talk will exploit the capability of such environments to use spatial mappings as a powerful mean to connect abstract information to physical objects. The concept of an Object Associated Display - OAD as a way of providing visual feedback to users will be explained in detail. OADs are projected public displays created at locations that can be easily associated with the objects they show information about. OADs represent a special case of projected public displays and offer a more intuitive way to provide visual feedback for the user interacting with objects, than traditional information screens at fixed locations would do. The approach is demonstrated in a shopping scenario: if the user takes a product from a shelf, the product's place in the shelf is used as a display area and information about the product is projected onto that (now empty) area in the shelf. Although in the process of taking an object out, the users focus their attention on the product itself, the former location of the object is still in the peripheral view of the user. Since the appearance of a new projected display occurs in this area, it is very likely to be recognized by the users and thus draws their attention to the projected display. Hence, users are not required to actively search for the display's location and the relationship between the physical object and the associated information arises automatically. OADs easily establish a spatial mapping between a physical space and digital information, which exploits the users ability to process and interpret information about spatial object configurations.