Interactive surfaces

The use of technology in health care is developing strongly. For some technologies there already is some evidence that they may be effective in health care situations, like in socially assistive robots (Bemelmans *et al.*, 2012). Also, the use of virtual realities or computer games seems a promising technique to engage nursing home residents in activities (Plow *et al.*, 2011). 'Interactive surfaces' may be a promising technology to stimulate and engage people in different ways. Until now interactive surfaces have been used in trade shows and fairs as advertisement or to increase the amusement level of the audience within the dance scene (http://www.vertigo-systems.de/). Interactive surfaces have similarities with computer games as they also can create a colorful virtual reality in which elements of gamification may 'seduce' people to play, move, respond or interact with it. To create an interactive surface different graphic shapes can be projected from a computer through a beamer on a wall or floor. The projected objects may already move or are 'activated' by movement of a person on the projection field, which is detected by a movement sensor (infra-red camera). Examples of objects are fish swimming in a virtual pond that shoot away when one comes nearby or leaves on the floor that start to whirl when one walks by.

For people with disabilities, such as nursing home residents with somatic complaints or with dementia tend to move very little, besides the planned therapy sessions or (sports) activities.
In people with intellectual disabilities problems of overweight, obesity and immobility have been highly increasing. These people often do not understand or realize that healthy food intake and enough physical activity is important to remain healthy. These populations often lack the intrinsic motivation to be more physically active.
The interactive surfaces technology may be feasible for these populations because of the easy accessibility and the implicit character. 'Players' only need minimal cognitive and physical abilities to engage in or respond to the projections. Once turned on, the interactive surfaces are in a steady state and thus, no complex actions are needed to use it (e.g. turn on computer, choose program, use of remote control). This enables people to instantly engage with the surface.

In different pilot projects, the potential use of interactive surfaces to engage people with different kinds of disabilities into discovering and playing with these projections was studied.