

# Challenges and solutions for people with cognitive disabilities – experiences from the UNIMOD-project

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The main objective of the UNIMOD-project was to develop new knowledge of multimodal, personalised user interfaces, and thus to improve the accessibility and use of electronic services. The UNIMOD-prototypes were based on real cases, and showed how to increase the accessibility of the user interfaces. The project focused on users with cognitive declines in such areas as memory, problem-solving, orientation, attention/concentration, reading/writing, learning and verbal/visual/ comprehension.

An important goal was to develop ICTs which decrease the need for reading and writing dramatically. These areas were crucial to support in order to achieve an inclusive HCI-design for ICTs, such as mobile phones. Of the prototypes of the project demonstrated how mobile phones could be used as the main and only ICT-device by truck drivers who deliver mats from the laundry to a large number of companies and public places (Fig. 1). The mobile phone was used in the truck for navigation according to traffic situation and geography, and for handling the customer and delivery information.

Based on field studies, the UNIMOD-team developed a two-dimensional model for the mobile user interaction. The first dimension of the model handled geographic and navigational information in a user-centered way. The second dimension managed the presentation. The presentation was based on a multimodal user interface, and a “minimal information model” which showed just the necessary information, until the user asked for more. In all modalities, the progress of the working day was shown to the user. Three papers from the project were presented at HCI International 2009 in San Diego, USA [1, 2, 3].

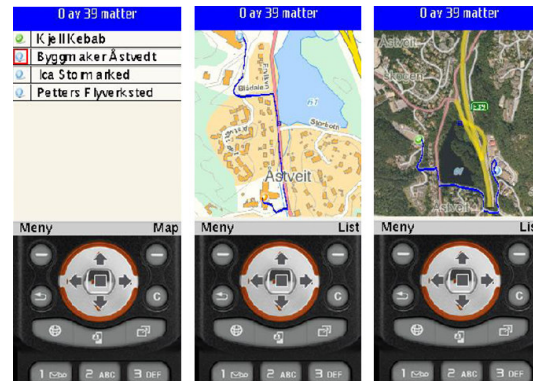


Fig. 1. Alternative modalities of the mobile prototype

The UNIMOD-project started in January 2007 and ended in August 2009. UNIMOD was partially financed by the VERDIKT-programme in the Research Council of Norway. The participants contributed with funding and dedicated man power. The total project cost was 12.300.000 NOK.

The UNIMOD-participants were: Brunel University, the Brønnøysund Register Centre, the Delta Centre, ICT-Norway, Karde AS, More Software Solutions AS, Norkart Geoservice AS, Norwegian Computing Center (NR), Tellu AS and A2G (ÅstvedtGruppen AS).

## References:

- [1] Adaptive User Interfaces: Benefit or Impediment for Lower-Literacy Users? (I. Solheim).
- [2] Accessible User Interfaces in a Mobile Logistics System (H. K. Jansson, R. Bjærum, R. Hellman and S. Morka).
- [3] ICT Services for Every Citizen: The Challenge of Gaps in User Knowledge (K. S. Fuglerud).