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Enhancing accessibility in mobile navigational services

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Abstract

The success of the Wii and of the iPhone together with the persisting problem of displaying information on the small screens of mobile devices is currently pushing the development of non-visual interaction channels such as gestures, tactile/haptic interaction and sound. This development presents both potential and risk, since new channels of interaction may result either in improved or reduced accessibility.

The HaptiMap project [1] is targeted on introducing accessibility as a key component in the development of mobile interfaces to reduce the risk of introducing new technologies that are unavailable to significant parts of the population. We have chosen to focus on geospatial information since this is an area which traditionally makes heavy use of the visual channel. We make use of “Inclusive Design/Design for All” [2] - an approach where we put as our goal to increase the number of persons who are able to use mainstream mobile map services by making the applications easier to use also for persons with visual impairments.

We have identified three particular challenges for more accessible and useable geospatial applications:

1. We need to maximize the haptic and auditory channel themselves. To design the non-visual channels as purely enhancements of the visual information will reduce the application areas – while non-visual feedback that can stand on its own will widen the range of possible usages.
2. We need to find out what the users want and when they want it. The amount of information potentially available is huge, and systems need to be good at giving users relevant information at the right point in time.
3. We need to communicate that accessibility is for “us” not for “them”. Depending on the situation everyone may experience problems associated with e.g. not being able to see things on the screen, or not being able to cognitively attend to complex information.

References

- [1] The HaptiMap Website: <http://www.haptimap.org>
[2] <http://www.designcouncil.info/inclusivedesignresource/>