

RGI Geo Innovation Award 2009

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Over the past few years, quite a number of ITC staff and PhD candidates have been involved in contract research projects for the Dutch innovation programme Space for Geo-Information (RGI; see www.rgi.nl). As an incentive, the Dutch government has invested a total of 20 million euros in some 100 research projects carried out by consortia consisting of partners from geosciences, trade and industry, and representatives of users.

One of these research projects was the RGI-233 on "usable (and well-scaled) mobile maps for consumers" (see www.rgi-otb.nl/uwsm2/). The project was a reaction to the increasing use of geo-information in and through mobile devices such as smartphones and PDAs and focused on the map displays on these devices. These map displays suffer from the limitations imposed by small screen size and onboard (possibly outdated) map data files, as well as insufficient bandwidth wireless connections, storage capacity and processing power. In the project, two particular scientific challenges were addressed: automatic generalisation and the human factor aspect of mobile geo-applications. Generalisation is relevant for mobile geo-applications because zooming is an important method of user interaction with the map interface (zooming out for an overview, zooming in for detailed information). In addition, generalisation allows the progressive transfer of geodata from server to device, which benefits usability.

The research project ran from 2006 to 2009 and was executed by a consortium of research and development organisations (Delft University of Technology, ITC, Leibniz University Hannover and TNO Defense, Security and Safety), software companies (ESRI and 1Spatial) and end-user or-

ganisations (Municipality of Amsterdam and ANWB, the Dutch Automobile Association). The project leader was Professor Peter van Oosterom of Delft University of Technology. ITC, together with TNO, was mainly responsible for the research on human-factor aspects (use, user and usability research) and provided substantial project input. This input was delivered by PhD candidate Ioannis Delikostidis and Corné van Elzakker of ITC's Department of Geo-information Processing. Personal geoidentification (where am I?) and navigation in space through the interaction between reality, perception/cognition of reality in the minds of the users of mobile geo-applications, and representation of reality on mobile screens are central to the PhD research of Ioannis Delikostidis. Consequently, his PhD research work could be effectively integrated with the RGI project work and resulted in several publications. ITC's main contributions were developing and testing a field-based usability evaluation methodology (including the technical solutions), a comparative examination of two existing mobile geo-applica-

tions in the field (Amsterdam), and an expert (including heuristic) evaluation of two prototypes developed within the framework of the RGI project by other consortium partners. Some current and former ITC students and PhD candidates contributed to this user research by acting as test persons.

The innovation programme Space for Geo-Information officially terminated on 31 July 2009. However, beating off stiff opposition, our RGI-233 project was selected as overall winner of the RGI Geo Innovation Award in the category Scientific Excellence – highly encouraging for Ioannis Delikostidis in his ongoing PhD research (to be completed in 2011)!

A user testing in Amsterdam



System overview

