Development of web-based maps for visually impaired people

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Today cities can be discovered easily and in a comfortable way from home with the help of interactive online maps. Although web-based maps become more and more popular, they still belong to those elements of the web which are hardly or even not accessible for people with limited sight or mobility. Reasons for visually impairment are not only genetic defects, diseases or accidents, vision declines especially at higher age (Macula Degeneration).

Resulting from demographic change and the ageing of society the topic gets more important, also in context of the general and social discussion about accessibility and eInclusion. The aim of the FFG project “AccessibleMap”(*), which started in April 2011, is to develop methods which can make web-based maps accessible for visually impaired people. The technical realization is based on geographic information technologies. There will be a textual description of a web-based map (map in words) on the one hand, and an optimized cartographic design (choice of colours, object size, etc.) according to the needs of visually impaired on the other hand (proposed infrastructure seeFigure 1).

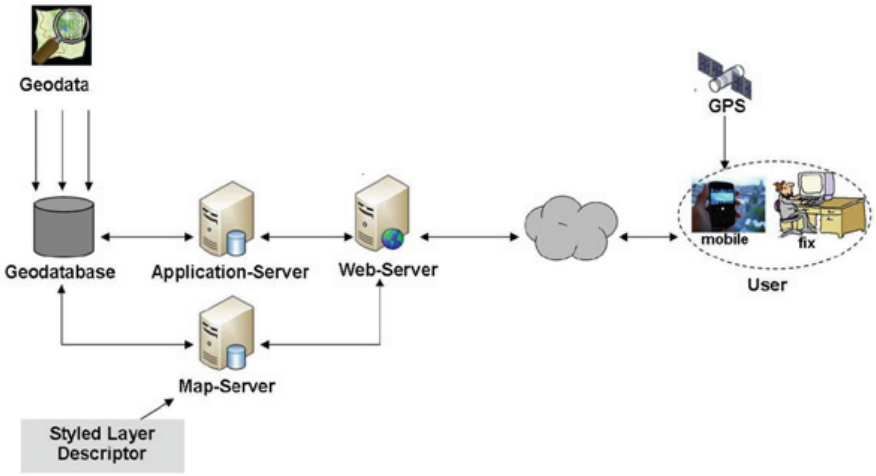

Figure 1: Proposed AccessibleMap infrastructure

However, users should not be navigated from one starting point to an end point in a linear way as it is the case for navigation systems typically. Moreover, a holistic understanding of space and spatial connections should be supported. Thus the automatic annotation of the spatial description remains essential so that a large area can be covered.

The target groups, which are visually impaired people (with different characteristics depending on the intensity of the visual defect), will be divided into several sub-target groups, characterized and analyzed with methods from empirical social research and statistical analysis. Therefore AccessibleMap focuses on a semantic spatial description based on the user’s needs and requirements

and aims to create cognitive or mental maps that include relevant information about streets, squares, important landmarks, points of interest, crossings, blocks of houses, etc.

The result of the project will be a prototype of the web-based map which can be tested intensively by the target group on a special designed mobile device. On long term the web-based map for visually impaired should be successfully established on the market.

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