Abstract

Information is increasingly becoming easier to generate and distribute, enabled primarily by technological advances. Estimates suggest that 80% of all information generated contains a spatial reference (MacEachren and Kraak 2001). This increased availability of integrated spatial and non-spatial information requires effective communication methods to users. One means of effectively communicating information is by visual representations.

Traditionally cartography and conceptual modelling have focused on spatial and non-spatial information respectively. The increased integration of spatial and non-spatial information suggests integration of methods for visual representations from both fields.

This master thesis has investigated the integration of visual representation methods from cartography and conceptual modelling in order to meet the needs of effectively communicating integrated information.

A survey of the current methodologies for visual representation in cartography and conceptual modelling has been performed. The approach aims at investigating not only concrete methods but to investigate the understanding of quality for visual representations in both fields. Integrating the understanding of quality is one approach at developing guidelines for integrated visual representations.

The project has approached this by designing and developing different visual representations aimed at supporting *information transparency* in the health care domain. Research in the health care domain is currently investigating possibilities of introducing spatial information in hospitals to support information transparency leading to better coordination and collaboration. Integrated visual representations are effective at communicating information and should thus be well suited for the task.

In order to design and develop appropriate visual representations a scenario is developed in collaboration with health care domain experts. Several different integrated visual representation techniques, supporting the scenario, are proposed. Among these, two techniques are thoroughly investigated by designing and conducting an illustrative empirical experiment.

Several *generally applicable guidelines for integrated visual representations* are suggested based on the findings of the project. This project has contributed to a wider understanding of the quality aspects of integrated visual representations. Further efforts are needed in order to meet the increased demands of integrated visual representations. The experience obtained from this project, and documented in this thesis, suggests directions of further efforts aimed at integrated visual representations.