

How to confirm visualization strategies and design guidelines based on multi-domain usability research on the STC?

The technological development and use of tracking techniques has generated vast amount of data that have attracted the interest of many researchers. However, many application domains struggle with these data in their attempt to make sense of its content. A geovisual analytics approach, that combines computational algorithms and human expertise could very well contribute in the sense making process. However, of the various tools and techniques developed over the last years within a geovisual analytics we are not sure if and how the work.

The existing visual representations have indeed the potential to handle and analyse complex movement datasets. Each of them provides different functionality to interactively explore the data. Among these representations is the well known space time cube (STC). It originates from the 70<sup>s</sup> of the last century, to explore the spatio temporal characteristics and activity patterns of a limited number of individuals under the various constraints. Over the time the STC has been applied in many different domains. But a major question remains if it supports sense making with large amounts of data.

In order to determine the suitability of the STC as a visual representation for large datasets we propose a particular visualization strategy based on Shneiderma's 'information seeking mantra' in combination with context dependant cartographic design guideline. To evaluate this approach these ideas are tested with several case studies in very close cooperation with domain experts. One case study is related to the pedestrian's movement behaviour in historic city centre of Delft. The urban scientist was interested in movement behaviour and different activities of tourists and visitors of a city centre.

The usability research based on a user centred design approach is currently being set-up and this leads to the question on how to derive confirmation for the visualization strategies and design guidelines for STC use from different domain specific user centred design usability projects.