EVALUATING RELIABILITY VISUALISATIONS

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Many interesting and valuable visual techniques have recently been developed to communicate uncertainty in spatial data. Although some of them are very effective and receive positive comments, it is still unclear how the users perceive and understand these visualisations, and whether the displays actually convey the reliability information encoded within the data.

The evaluation of visual methods developed to communicate uncertainty concerns both users and producers of digital spatial data. While the users are looking for the right tool to assess the reliability and usefulness of data for various applications, the producers search for methods that convey the reliability of their products best. Furthermore, software development and database solutions cannot be optimised due to the lack of appropriate evaluation of visual methods. Therefore, systematic and comprehensive empirical testing to evaluate the effectiveness of visual techniques becomes a priority for current research.

This paper focuses on the design and development of an assessment method to test the effectiveness of a number of visualisation techniques used for the communication of uncertainty. It discusses the design considerations, construction and implementation process of the assessment exercise. The World Wide Web (WWW) technology is used to deliver a cartographic questionnaire, and the administration of this is described. The outcome of the questionnaire provides valid results that are analysed to evaluate the effectiveness of studied reliability visualisations.