

BIRDEYE VISUALIZATION FOR ASSISTING PROSPECTIVE DRIVING

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ABSTRACT

Objective: The aim of this study is to research the subjective perception of two different visual variants to support a driver in the task of prospective driving with respect to helpfulness, comprehensibility and distraction. **Background:** Fuel efficiency and low CO₂ emissions became a very important sales argument for every motor company. Apart from improving engine efficiency, one main factor in fuel consumption is the driver itself. C2X, digital Maps and in-car sensors are great ways to gather situational information that can be used to support prospective driving. Although the quality of the data and the algorithm that processes this data are important aspects of such a system, another important aspect is how to present that information to the driver. **Method:** We've created two different visualizations, one being a rather realistic Birdeye representation of the situation the driver currently is in, and one being an iconic representation of the situation. Subsequently we presented those visualizations in a user study to 29 subjects, using a fixed-based driving simulator and a test track consisting of 13 situations. The visualizations were presented in the instrumental cluster. **Results:** It was shown that the Birdeye representation of the situation was subjectively perceived better than the iconic representation considering factors like: comprehensibility, clearness, distraction and helpfulness. Also no increased gaze duration at instrumental cluster between the two visualizations could have been measured **Conclusion:** The higher and more realistic Birdeye visualization is preferred by most subjects, because of its intuitive representation (speed of traffic and distance to traffic), its looks, and the difficulty to represent a whole range of different situations with a simple icon, as it has been done by Iconic visualization.