

Information for In Car Route Guidance and Navigation Systems Selection Presentation and Evaluation

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This paper reports the development of researches on selection, presentation and evaluation of information for conceiving In-Car Route Guidance and Navigation Systems (RGNS). It also presents some studies that have been carried out in the Faculty of Sciences and Technology, at Sao Paulo State University (FCT-UNESP).

In terms of selection of information, one of the greatest researchers' goals is to find out the appropriate information that should be added in navigation systems.

For answering the question "what do the drivers need?" a few studies have been carried out and a set of information have been emerged and discussed. Taking into account presentation of information, several studies have investigated different 'formats of information' and 'display modalities', as well their combinations.

Maneuver direction, landmarks and distance to turn are presented on map or turn-by-turn, visually or aurally. To evaluate the usability of RGNS, including the cartographic communication performance, some experimental measures are taken into account such as satisfaction, easy of learning, efficiency and effectiveness. Some tests were conducted at FCT-UNESP in order to find out some driver's basic requirements, as well point out a group of potential representations for developing navigation systems, by considering traffic safety. From the 'format of information' point of view, it was found out that most of the drivers prefer maps rather than turn-by-turns. Also, they prefer white background color when navigating during the day and black one during the night.

To represent the position of the car on route by using moving-map display it was found out that drivers prefer car pictorial symbol as seen from the top. Some tests of interface usability were conducted in an in-house low-cost driving simulator and results point out that mimetic landmarks seem to influence higher visual demand.

Finally, this paper presents important recommendations for conducting future researches and what the next steps have been planned from now on.