User-centred design of an on-board information system for automatic vehicles

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Abstract

In the European Project CyberCars[•], CRF developed an on-board information system specifically thought to be installed on innovative automatic urban vehicles. The purpose was to create an information system which had to be very easy to learn, to use and which had to offer a complete number of information and services (i.e. traffic information, parking availability, navigation service, tourist tours, radio). To achieve these goals, it was fundamental to design a system based on users' needs and habits. The starting point was to collect qualitative data from a series of Focus Groups. Hence the iterative design process, where design phases were alternated with evaluations, performed by usability experts and naïve users. Based on the information collected it was possible to define: the functions of the on-board information system, the interaction's logical flow, the semantic contents, the graphical characteristics, the input device layout and the mapping between the input devices as well as the graphical objects of the visual interface. The output of this activity was the on-board information system working prototype, installed on a physical mock-up of the anterior part of the vehicle, which was ad hoc designed.

Introduction

This work was carried out in the context of the European Project CyberCars (supported by the key action "Systems and Services for the Citizen" of the program "Information Society Technologies" of the European Committee[°]). The main purpose of the project was to study a new urban context transport service. In the form of a public transport service using a fleet of shared vehicles. These vehicles are not supposed to be driven by a person. They are controlled by a Telematic Bureau constantly connected with each vehicle, monitoring it during the whole trip.

One of the problems to solve was that the users had to interact with an on-board system rather then human operators. Moreover, these vehicles should be used by

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[•] http://www.cybercars.org
[°] http://www.cordis.lu/ist/ka1/home.html