

Introduction

Nowadays, information is almost ubiquitous. In the domain of transport, car drivers have multiple means of obtaining information, ranging from static traffic signs, internet information, navigation devices to smartphones (Fig. 1). The effect of the use of information in the field of route choice has been researched thoroughly. However, little research has been done in the field of parking whether these effects are comparable. This development triggers the question what the impact is of information provision on performance of (parts of) the transport system in the domain of parking. Does the improved availability of information lead to a better performance?



Fig. 1 Information

Aim

This study aims to understand the impact of information on the performance of both individual drivers and the collective of all drivers, in the field of parking, by using a multi-agent model. The study will explore the impacts of various kinds of information as well as various strategies for information collection and dissemination.



Fig. 2 PARKAGENT

Methodology

In order to fill the gap on research on information and performance in the field of parking, we need to verify selected types of information and their effect on parking dynamics. We will use a multi-agent computer simulation to conduct experiments. The agents will be modeled according to behavior found in the literature. By using the structure of a multi-agent model we will be able to study interaction between the drivers. These interactions and the effect on individual drivers are not predictable with other models, whereas the impact on system dynamics is even more complex.

For our investigations, we will use and extend (Fig. 3) PARKAGENT (Fig. 2). PARKAGENT is a multi-agent model that simulates the whole parking process, including driving towards the destination, searching for parking and exiting the parking place after a certain period of time. The model is based on a direct representation of every driver as an agent and is able to simulate thousands of agents simultaneously. The model is the result of the collaboration between Radboud University Nijmegen and Tel Aviv University (Benenson et al., 2008; Martens et al., 2010)

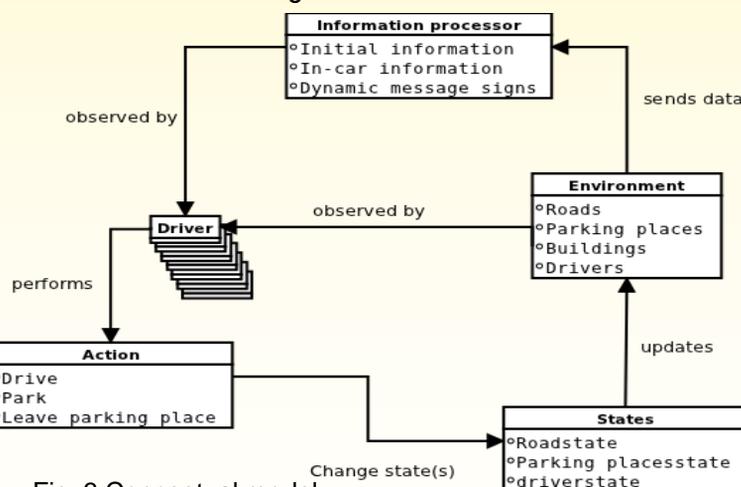


Fig. 3 Conceptual model