

VACANCY: C-ITS and human behavior

INTRODUCTION

Mobility is about the movement of people. And it is the people themselves that decide how, when and where their next movement takes place. This means that all our solutions somehow describe or forecast the choices of people. The challenge herein lies in the combination of accurately describing and forecasting (fuzzy) human behavior and their spatial-temporal interactions whilst providing a complete, meaningful and consistent overview of their effect on the mobility system and on society.

PROBLEM DESCRIPTION

Are humans using new technological possibilities, such as C-ITS, as intended? It is important to understand causal relations in the field of road safety to explore and simulate human behavior. Think about how people react when they know the time until a traffic light turns green, or when they see a realtime speed advice, based on changing circumstances. Road users could bypass the intended use and possibly misuse C-ITS to create only personal advantage. What are the possibilities of doing so and what will be the impact of C-ITS measurements in traffic then?

RESULT / OBJECTIVE

Several services in Cooperative Intelligent Traffic Systems (C-ITS) have been tested and found working from a technical point of view. How they should work in an operational world with all stakeholders involved is not widely investigated yet. Neither have the societal benefits, costs, legalities from different aspects been investigated. Some applications are mature for implementation and could benefit traffic safety, efficiency and sustainability in a more reliable and robust way.

Before an implementation of C-ITS services, different forms of evaluation must be done to answer questions such as:

- Is it worth the investment in different types of infrastructures?
- What are the benefits and shortcomings of different technologies?
- Are the services trustworthy or safe?
- Do the services function with the expected quality?

ASSIGNMENT

There are multiple ways to include the interpretations of HMI/driver in answering these questions. We propose a literature research to explore realistic behavioral options and its effects. The following questions are key in this research:

- How do road users change their behavior during the trip due to e.g., time to green or speed advice?
- How are road users changing their behavior before taking a trip: choice of routes, time of day, mode on a network level?
- Are there key elasticities to determine behavioral effects of C-ITS on network level?
- How will a system with C-ITS function in terms of human behavioral change?
 - Who benefits and how does the behavior of misusers versus intended users differ?
 - If people are misusing it for personal advantage, who is disadvantaged?
 - Are there differences in benefits for users and non-users?
 - What are realistic behavioral options with C-ITS in traffic management?

INFORMATION

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