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INCREASE OF EFFICIENCY BY COOPERATIVE BEHAVIOUR

The traffic system “road” is affected in its efficiency by the behaviour of the traffic members among one another. In the course of the project “Increase of efficiency by professional/partnership behaviour” the potentials of the partnership driving concerning an increase of traffic efficiency are supposed to be analysed. At first this project, which is put in hand with the “Forschungsvereinigung Automobiltechnik e.V”. (FAT), is supposed to analyse traffic processes. One base of this analysis the weak points of the traffic system will be identified, which appear by the connection of non partnership and non professional respectively behaviour. With this weak points improvement potentials can be pointed out and evaluated. On closer examination of the traffic system the following three aspects need to be considered:

- The effects of the violation of current traffic rules
- The behaviour of individual traffic members, concerning both, an aggressive and a thoughtful driving style.
- Influence of structural elements on traffic process
(control of lighting signal system, traffic control, e.g.)

This project is executed in cooperation with the “Interdisziplinären Zentrum für Verkehrswissenschaften (IZVW)” of the University of Würzburg, as beside the traffic effects the emotional effects, the motivation of the driver and the development of his decision process are to be analysed.

For the investigation of the effects of cooperative driving, at first the traffic situations are chosen, which suppose an high expressiveness with regard to the task description and which can be used as prototypes for various traffic situations (e.g. junction, lane drops, exit/entrance ramps, etc.). For the simulation of these situations the submicroscopic traffic flow simulation PELOPS (Program for the Development of Longitudinal Traffic Processes in System Relevant Environment) is used, which has been developed by ika/fka in cooperation with the BMW AG for more than 10 years. Besides the traffic elements roadway/ environment and vehicle, this program also contains a psycho physical driver model which is extended in the course of this project by both the emotional development process of aggressive/cooperative episodes and their realisation (e.g. fast and close approach).

For these traffic situations, polls and driving simulator investigation are carried out. The results of all investigations are evaluated and are brought in for the development of action options both educational and legal.

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