EuroFOT – Optimised data retrieval process for large scale field test: manageable by automation?

Dipl.-Ing. Mohamed Benmimoun

Institut für Kraftfahrzeuge, RWTH Aachen University, 52074 Aachen
Tel.: +49 241 80 26318, Fax: +49 241 8022147, Email: mbenmimoun@ika.rwth-aachen.de

Dipl.-Ing. Jörg Küfen | Dipl.-Ing. Ahmed Benmimoun

Institut für Kraftfahrzeuge, RWTH Aachen University, 52074 Aachen
Email: kuefen@ika.rwth-aachen.de | benmimoun@ika.rwth-aachen.de

Main Topic: Socio economic impact assessment

The euroFOT project aims to investigate the impacts of advanced driver assistance systems (ADAS) and to encourage their deployment. Started within the seventh framework programme, the euroFOT project establishes a comprehensive, technical and socio/economic assessment programme for evaluating the impact of ADAS on safety, environment and user-acceptance in real life situations. The results of the evaluation will offer valuable information for the short and long-term impact of ADAS. Altogether 1500 test vehicles from different manufactures and different ADAS are coordinated by five “vehicle management centers” (VMC). Within the German1-VMC a fleet of 240 vehicles (100 trucks and 140 passenger cars) are managed.

Within this paper one of the most challenging parts of this project, the data retrieval process, will be presented. At the Institut für Kraftfahrzeuge (IKA) the data retrieval and storage processes for the German1 fleet will be defined and finally developed. All vehicles are equipped with dataloggers, which enable recording and temporary storage of all relevant measured values. The estimated amount of data at the German1-VMC adds up to approximately 3500 GB, considering a duration time of 1 year for field tests.

The recorded data will autonomously be uploaded via GPRS to a centralized data server, where those will be extracted, checked with regard to data quality, preprocessed, enriched with additional derived measures and finally stored to a data base system.

The entire process chain is designed to work completely autonomously. This approach ensures, that the driver is not involved in the data retrieval process and therefore can fully concentrate on the driving task. At the same time, all routine actions are coordinated by monitoring processes, while simultaneously reducing operational overhead. Exceptions and unpredictable incidents are escalated directly to the operators, in order to intervene and limit probable data loss. All these processes are implemented by considering the highest possible reliability. The final paper will offer more insights into the data retrieval and storage process, considering the single steps of the whole data retrieval and storage chain.