

Incident definition and usage within the euroFOT project

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This paper discusses the approach to define an incident event for usage in the large scale field operational test (FOT) to be conducted within the EC euroFOT project. The euroFOT project aims to investigate the impacts of advanced driver assistance systems (ADAS) and to encourage their deployment. Started within the EC's seventh framework programme, the euroFOT project will evaluate – using instrumented vehicles in real traffic conditions – the impacts of ADAS on driver performance, safety, environment, traffic efficiency and user acceptance. The FOT approach is derived from the FESTA handbook, which provides guidelines for conducting field operational tests. The FESTA approach is adapted according to the specific requirements of the euroFOT project. Altogether five vehicle management centres (VMCs) are coordinating the fleet of vehicles being evaluated in the euroFOT project, which consists of approximately 1000 vehicles. Data collection will start in January 2010 for a period of one year.

A reliable definition of incidents is needed in the euroFOT project, because of two main requirements:

- For answering the research questions of the project, hypotheses were defined. For each of the tested functions a hypothesis related to incidents is formulated (e.g., “ACC increase the number of incidents”), which needs to be tested within the analysis phase.
- For the impact assessment a translation from surrogate measures derived from the FOT data into accident reduction potential is needed. Due to the fact, that accidents occurring during the FOT will be rare, a direct derivation of potential based on those will not be feasible. Therefore a strategy is needed to derive the accident reduction potential from incidents.

A major challenge in the euroFOT project is to define incident event patterns, which suit the requirements of the VMCs in euroFOT. Because of the reason, that each VMC uses different data acquisition systems and sensors to gather measurements for the vehicles' surrounding and the driver behaviour, a comparable and harmonized definition needs to be defined. As an example, at the German1-VMC only data from the vehicles' CAN busses will be used, whereas at the Swedish-VMC additionally cameras as well as eye tracking systems will be applied. For this, the sub-project “methodology and experimental procedures” defines an approach, which includes all needed sensors and signals to be recorded. This assures that all VMCs can determine incident events based on the available sensors. Within the piloting phase of euroFOT the algorithms to detect events will be tested and if necessary modified and adapted.