

SAFETY ANALYSIS METHOD FOR ASSESSING THE IMPACTS OF ADVANCED DRIVER ASSISTANCE SYSTEMS WITHIN THE EUROPEAN LARGE SCALE FIELD TEST “EUROFOT”

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ABSTRACT

Within the large scale field operational test (FOT) “euroFOT” an impact assessment of advanced driver assistance systems (ADAS) is conducted. Altogether, about 1000 vehicles equipped with eight different ADAS technologies will take part in the field operational test. The focus of the analysis is an impact assessment on safety, traffic efficiency and environment. This paper will present the elaborated methodologies for conducting the safety impact assessment by means of the collected data from the field test.

The safety analysis represents the most challenging part of the impact assessment, because no standardized methodologies exist. The objective of the safety analysis is to determine the change in accident risk, while driving with the ADAS functionality. Altogether two approaches have been defined for the safety impact analysis and adapted to the specific conditions in euroFOT, the event based analysis (EBA) and the aggregation based analysis (ABA). The EBA approach is applied for functions, which intend to reduce the frequency of particular time discrete events (e.g. number of unintended lane crossings). Whereas the ABA is applied for functions that change certain driver performance measures over time (e.g. distance behaviour). The necessary safety indicators cannot be determined directly from the objective data, but need to be derived by means of surrogate measures. This paper discusses the challenges for performing a safety analysis and the methodology defined within the euroFOT project to perform this analysis.