Nowadays, accidents are mainly caused by human factors. Accidents databases give insights to the causation and chronicles of accidents. An increasing penetration of automated vehicles in the market may positively influence accident numbers. Highly automated driving shall, within the system limitations, contribute positively to road safety. However, situations may exist which overwhelm automated driving vehicles. Especially of those situations which are easy-to-handle for humans, a lack of the consumer acceptance may be an issue.

Pending questions regarding Automation Risks:

- Which Automation Risks do exist? In which situations do they emerge?
- How may Automation Risks be identified and quantified?
- How can the Automation Risks be implemented in the PEGASUS Method?
Identification and Quantification of Automation Risks

What kind of new causes for accidents are introduced by automated driving functions and in which scenarios do they emerge?

(1) Impacts of the environment on the automation
- Misguided perception of the environment
- Misguided interpretation of the situation
- Misguided prediction of trajectories of other traffic participants

(2) Impacts of the automation on other traffic participants
- Misinterpretation of the automation’s behaviour
- Reaction of automation cannot be anticipated
- Social Acceptance
- Impact on flow of traffic

(3) Interaction Driver ↔ Automation + Impact Environment
- Mode confusion
- Loss of confidence
- Misuse of function
- Impact of traffic on takeover performance of driver
- Derivation of requirements

Scenario (parameter range) + Risk

Controllability

Test specification database

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