SAFESPOT INTEGRATED PROJECT - IST-4-026963-IP

DELIVERABLE 4.2.2

SP4 – SCOVA – Cooperative Systems Applications Vehicle Based

Safety Margin concept

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Authors (per company, if more than one company provide it together)		Matthias Strauss, Ulrich Staehlin - CAS	
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EXECUTIVE SUMMARY

This deliverable D4.2.2 called "Safety Margin Concept" is defining the basic design of the safety margin assistant for V2V (Vehicle-to-Vehicle) communication in SAFESPOT. The goal is to harmonize the different definitions already found by different car manufacturers and suppliers and give a consistent starting point for further work on the safety margin assistant.

After giving a short overview of the state of the art and therefore the different points of view already available on the subject, a general concept is derived and further defined for all the different use cases and applications looked at. This is followed by a discussion of the relevant parameters for this concept.

The general idea for the safety margin concept is to divide the time before the crash into 3 stages. In the Comfort Zone the system has to inform the driver, but the reaction needed (to avoid a possible accident, or to cope properly and safely with the given scenario for a specific application) is very comfortable. In the Safety Zone the situation is already relevant for safety and the driver has to react in a significant timeliness to safely comply with the road scenario. The Critical Zone is the zone just before a possible collision. In this zone, the driver has to react immediately and with the correct manoeuvre in order to avoid the accident.

Looking at the parameters needed, they can be divided in three groups: Vehicle parameters, driver parameters, environmental parameters. Since the definition of the safety margin concept is built starting from the driver's point of view, precise boundaries for the 3 zones are not easily definable. Empirical data from test drives is needed to define these boundaries, and a flexible definition that may possibly differ for different drivers should be applied.