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**Proposal for amendments to Regulation No. 79 to include ACSF > 10 km/h**

*New text compared to doc. ACSF-05-16 is underlined, deletions are not marked*  
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**Proposal 1:**

**5.6.1.1.8. The vehicle shall be equipped with means to monitor and to detect obstacles and other road users, including pedestrians and large animals, at any times when ACSF is active at a minimum range to the front ( $S_{Front}$ , to the right ( $S_{side}$ ), and to the left side ( $S_{side}$ ) and behind ( $S_{Rear}$ ) the vehicle with the purpose to avoid collisions.**

**Vehicles shall be classified at a minimum range to the front ( $S_{Front}$ ), to the right ( $S_{side}$ ), and to the left side ( $S_{side}$ ) and behind ( $S_{Rear}$ ) the vehicle with the purpose to avoid or to mitigate collisions.**

**Pedestrians, large animals and obstacles shall be classified at a distance not less than 60m to the front of the vehicle.**

*Justification: Although the concept of “other road users” already entails pedestrian, there is obviously some misunderstanding if the system has to be able to detect pedestrians and large animals. Therefor, to avoid any misinterpretation, pedestrians and large animals are especially mentioned.*  
*Every year several accidents on highways with pedestrians and large animals occur. The consequences of these accidents are considerable. Therefor pedestrians and large animals have to be detected and the system shall take appropriate actions to avoid a collision.*  
*Because of technical restrictions the minimum distance to classify objects in front of the vehicle is different for vehicles and for pedestrians, large animals and obstacles. For a solid classification of pedestrians and large animals in practice obviously camera’s are needed. These camera’s cannot classify beyond 60m.*

**Proposal 2:**

**5.6.1.2.6 Driver availability recognition system**

**The system shall comprise a driver availability recognition system that is active whenever the ACSF system is active.**

**The driver availability recognition system shall detect:**

**1- Immediately that the driver is present in the driver seat,**

**2- Within the time specified below, if the driver is available to take over the steering. This may be done by monitoring the driver or by monitoring the driver's engagement in operating vehicle systems, installed by the vehicle manufacturer, [such as e.g. an infotainment system].**

**The time is the lower of the following values;**

**- the quotient of 5400 divided by the vehicle speed [km/h]**

**- a maximum of 180 s.**

**When the driver is not available the system shall provide a distinctive warning until appropriate actions of the driver are detected (e.g. the driver resumes manual control) or a transition demand is initiated.**

**When the system does not detect appropriate actions from the driver during the distinctive warning with a max. duration of [15 s] a transition demand shall be initiated according to 5.6.1.4.3.**

*Justification: The Bonn-meeting supported the compromise, i.e. a system assuring the driver's presence in the driver's seat and analyzing the driver's activities. In order to have assessable requirements the time, within which the system shall detect if the driver is available to take control, shall be stated. The time shall be such that it is unlikely the driver will be out of the loop in such a way that he cannot take control within 4 seconds. A timing depending on the speed with a maximum seems appropriate. The time is based on the travelled distance of 1500 m with a maximum of 180s. 180s is needed to cover 1500 m at a speed of 30 km/h.*

### **Proposal 3:**

#### **5.6.1.6. Protective Braking**

**5.6.1.6.1. Any vehicle equipped with an ACSF of category E shall meet the following requirements for protective braking.**

**5.6.1.6.1.1. If the activated system detects that the distance to obstacles and other road users, including pedestrians and large animals, in front is less or will shortly be less than the foreseen safety distance a protective braking shall be carried out.**

**5.6.1.6.1.2. If the activated system detects that due to a sudden unexpected event the vehicle is in imminent danger to collide with another road user, including a pedestrian or a large animal, in front and that the time for a safe transition procedure is too short, a protective braking as emergency manoeuvre shall be carried out. Alternatively a lane change manoeuvre can be carried out to prevent the collision.**

**5.6.1.6.1.3. The protective braking must be able to deliver full braking force of the vehicle in order to achieve a maximum deceleration.**

*Justification: Following the justification above of par. 5.6.1.1.8, to avoid any misinterpretation, pedestrians and large animals are especially mentioned.*