

Industry proposal about “Minimal risk manoeuvre”

- 2.4.8.14 "Minimal risk manoeuvre" means a procedure aimed at reducing risks in traffic, which is automatically performed by the system when the driver does not respond to a transition demand (e.g. by reducing vehicle speed).
- 5.6.1.5.1. If the ACSF detects that after a transition demand the driver does not take over manual control of the steering again the vehicle shall carry out a minimal risk manoeuvre. The vehicle manufacturer shall provide information to the technical service about which kind of minimum risk manoeuvres are foreseen depending on the given traffic situation.
- 5.6.1.5.2. It shall at any time be possible to override the minimal risk manoeuvre by the driver
- [5.6.1.5.3. During the minimal risk manoeuvre, the available assistance functions like Advanced Emergency Braking System shall remain operational.]

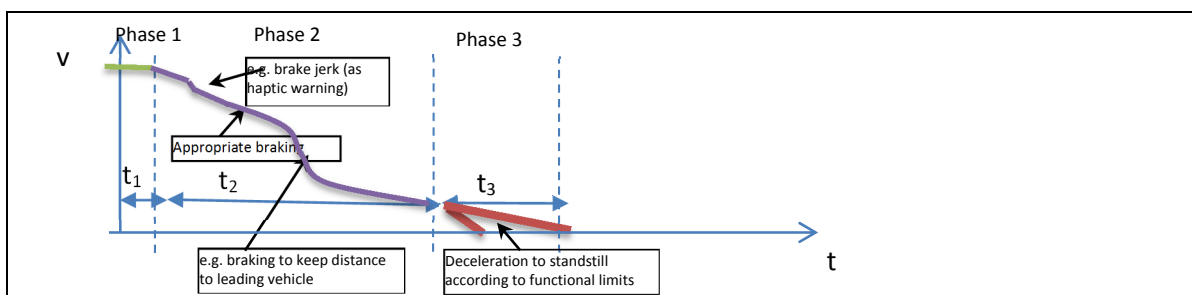
Justification

A minimal risk maneuver is initiated by the system in case the driver does not take control again after a transition demand. In this case it is assumed that the driver is no longer able to satisfy this demand and consequently a strategy to reduce accident risk is deployed.

The characteristics of the Minimal Risk Manoeuvre (MRM) functionality depend on

- the ACSF use-case (low/high-speed),
- the traffic situation at the time of initiation and during the manoeuvre,
- the technical constitution of the ACSF-system (sensors, functional boundaries).

Thus, the MRM can be visualized in the v-t-diagram for situations, whereby the vehicle starts to decelerate and encounters a leading vehicle that moves at a slower speed.



The MRM can be divided into three phases, whereby duration and deceleration of each phase is specific to the use-case and to the encountered traffic situation. Thus the phases can be identified as:

- **Phase 1 „Initiation of the MRM“:** Moderate deceleration, e.g. in the magnitude of the drag torque, such as the following vehicles become aware of the subsequent brake manoeuvres.
- **Phase 2 „Active Deceleration“:** Appropriate deceleration of the vehicle, in combination with e. g. automatic switch-on the hazard lights and eventually brake jerks to additionally warn the driver

haptically to resume the driving task, e. g. braking to keep the distance to slower leading vehicle, e. g. lane change on emergency lane - if feasible.

- **Phase 3 „Standstill“:** Deceleration to standstill – moderate or with a higher deceleration (depending of the traffic situation). Conditioning of the vehicle for still-stand, e. g. parking lock, unlock doors, activate parking brake.

The MRM can be overridden by the driver at all times.