

General requirements

Paragraph 2.3.

Agreed during #24 IWG:

- Introduce additional requirement regarding manufactures responsibility to implement measures to avoid misuse,
- Introduce additional requirement regarding manufactures responsibility to implement measures so the system to adapt to the traffic law updates. It must be also clarified that when the system cannot be updated to the new traffic law due to the end of lifetime, etc. the system shall not be able to be activated anymore.
- Introduce additional requirement regarding manufactures responsibility to ensure that the system functions properly over lifetime. When the system cannot, the system shall not be able to be activated anymore.
- Reword 'continuously' to e.g. 'permanently'

The system shall:

- cope with all dynamic driving tasks,
  - **prevent 'rationally foreseeable and preventable' collisions**
- not endanger safety of vehicle occupants & other road users,
- comply with traffic rules (incl. behavioral law) **relevant to the system operation in executing the dynamic driving task,**
- maximize driver controllability,
- give transition demand with sufficient lead time,
- continuously perform self-check,

**2.3 (especially 2.3.1.&2.3.2) to be refined/revised**

## Activation, deactivation and driver input

### Paragraph 2.4.

- Dedicated mean for activation and deactivation,
- system is default off,
- list of activation criteria (...),
- **manual** deactivation = dedicated mean,
- **automatic** deactivation = steering (thresholds), braking+hands, acceleration+hands or TD+hands+attentive,  
**'manual' and 'automatic' description is not necessary so to be rewarded accordingly.**
- attentiveness (criteria): **gaze direction, head movement, etc**
- override = steering (thresholds), braking (thresholds), possibly acceleration (within fulfilling requirements),
- Braking or acceleration (**exceeding threshold**) without hands → transition demand,
- during emergency manoeuvre deactivation may be delayed,
- after deactivation no **continuous control by the ADAS systems** → no mode conf.!

## Dynamic driving task

### Paragraph 2.5.

- Keep vehicle inside lane of travel (stable lat. position, no confusion),
- control speed of vehicle,
- adapt speed to infrastructure and environmental conditions,
- detect vehicles beside (and adjust speed & position accordingly),
- detect and keep distance to ~~road-user~~ **the next vehicle** in front (**reference to formula**) **and adapt speed in order to avoid collision**,
- come to complete stop behind stationary vehicle, road user **and blocked lane**
- equipped with sensing system
  - detection range (min. 46 m) tested by Technical Service,
  - evidence **that** effect of wear a/o aging **does not reduce** sensing system performance below minimum detection range,
  - strategies to detect & cope with **environmental** conditions reducing detection range,
  - principle of self-checking
- **maximum speed = 60 kph**
- **A single perception malfunction without failure should not induce hazardous event**

**2.5.6.2 explains the fall back strategies when [46] m cannot be met, and 2.5.6.3. is to specify that [46] m shall be guaranteed over the lifetime.**

## Driver availability

### Paragraph 2.6.

- Shall have driver availability recognition system,
- driver availability recognition system = presence & availability
  - **Presence: the driver in an appropriate driving position**
  - **Availability: under certain interval at least two criteria need to be met (rational of the criteria to be explained to TS)**
- no presence → transition demand,
- no availability → warning → transition (15 s after not available),
- **[Secondary activities provided by the vehicle allowed during ALKS operation shall be suspended when the system is not in use]**

## Transition demand and phase

### Paragraph 2.7.

- System fully capable to cope with all driving tasks during transition
- may reduce speed, no standstill (unless traffic requires it),
- transition demand given with sufficient lead time,
  - **planned event: sufficiently before the event**
  - **unplanned event: immediately upon detection**
- duration of transition demand (and phase) at least 10 s and
- transition ends = driver manual control or start MRM (after 10 s),
- failure → transition demand initiated,
- exemption: severe ALKS or severe vehicle failure → MRM

#### 2.7.1.&2.7.2.

→ Keep the original 2.7.1 & 2.7.2, and Industry to consider better wording.

Information to the driver

Paragraph 2.8.

The following shall be indicated to the driver:

- system status:
  - unavailability, display when activated, change to deactivation,
    - **Activation: dedicated optical signal (tell-tale and something more)**
    - **Deactivation: acoustic (unless deactivation after TD)**
- transition demand,
  - **optical + acoustic or haptic, and**
  - **after 4 s, escalation (of package of warning), haptic warning mandatory**
- minimum risk manoeuvre,
  - **optical + acoustic or haptic**
- emergency manoeuvre
  - **optical**
- any failure **affecting the system operation**
  - **optical**
  
- Aim is to achieve “standard” for automated systems.

**2.8.1.-2.8.3 Concept was agreed; Industry to prepare better wording**

**2.8.2.3. System status to the road users/passengers: should be raised at GRVA.**

## Minimum risk manoeuvre

### Paragraph 2.9.

- Begins after transition phase (only if driver has not resumed control)
    - should be a very rare case
  - aim to bring vehicle into safe standstill,
  - slow vehicle down in lane without **harsh braking**,
  - hazard warning lights activated **at the start of the MRM**,
  - lane change (to slower lane or hard shoulder) possible
    - necessary: sensors to the rear (requirements defined),
- 2.9.3. Keep the text in square brackets to be raised at GRVA.**
- MRM end = driver resumes control or standstill (w/o driver control)
  - MRM end → system deactivation

## Emergency manoeuvre

### Paragraph 2.10.

- Carried out (at any time) only in case of imminent collision risk, shall be minimized to occur
- full braking performance ( $\geq 4 \text{ m/s}^2$ ) a/o evasive manoeuvre (in lane),
  - crossing lane markings possible
    - necessary: sensors to the rear (requirements defined),  
Keep the text in square brackets to be raised at GRVA
- **EM end = collision risk disappeared or system override/deactivation by the driver**
- **EM end → system continues operation**
- ~~▪ collision risk passed → EM end → transition demand initiated,~~
- hazard warning lights activated if vehicle in standstill.