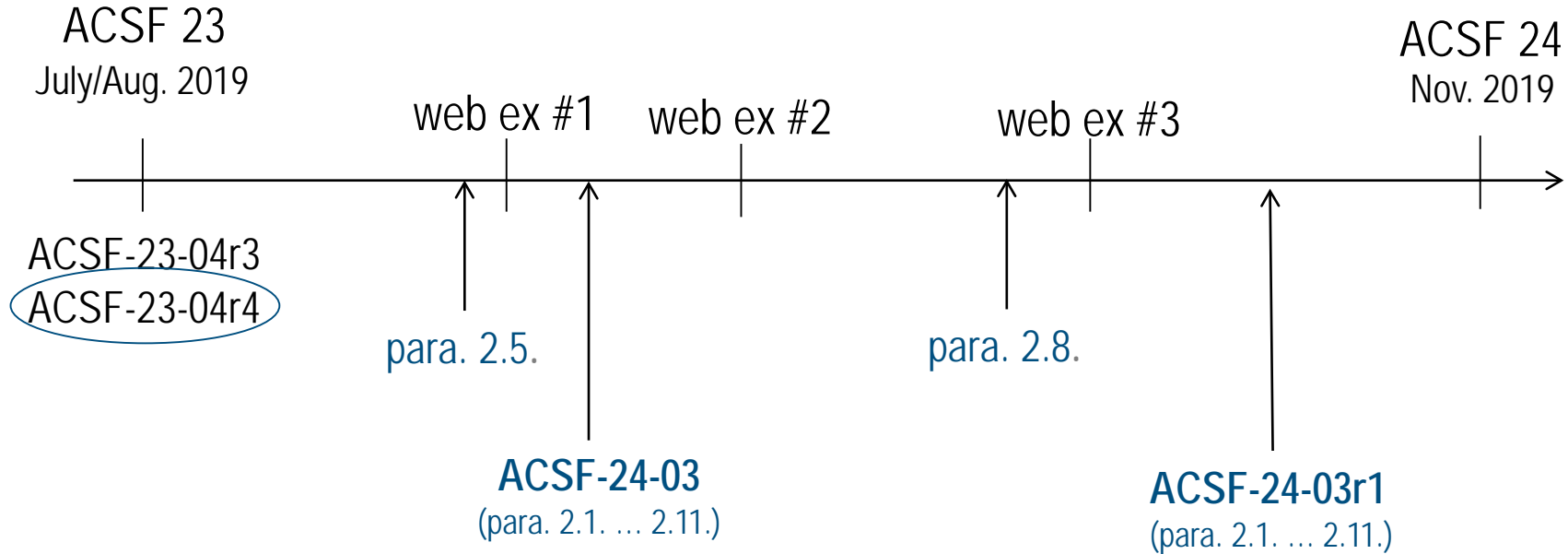


Timeline

Submitted by Germany

Informal document ACSF-24-16



Scope, Definitions and System information data

Paragraphs 2.1., 2.2. and 2.11.

„clean up“, bringing in line with main text (para. 2.3 - 2.10.)

General requirements

Paragraph 2.3.

The system shall:

- cope with all dynamic driving tasks,
- not endanger safety of vehicle occupants & other road users,
- comply with traffic rules (incl. behavioral law),
- maximize driver controllability,
- give transition demand with sufficient lead time,
- continuously perform self-check,
- detect & store failures

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 = override or TD+hands+attentive,
- override = steering (thresholds), braking+handsor acceleration+hands,
- Braking or acceleration without hands → transition demand,
- during emergency manoeuvre deactivation may be delayed,
- after deactivation no assisted systems (exceptions) → no mode conf.!

Dynamic driving task

Paragraph 2.5. (1/2)

- 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 in front (formula),
- come to complete stop behind stationary vehicle or road user in lane,

Dynamic driving task

Paragraph 2.5. (2/2)

- equipped with sensing system
 - detection range (min. 46 m) tested by Technical Service,
 - evidence effect of wear a/o aging on sensing system performance,
 - strategies to detect&cope with conditions reducing detection range,
 - principle of self-checking
- specified maximum speed = 60 kph

Driver availability

Paragraph 2.6.

- Shall have driver availability recognition system,
- driver availability recognition system = presence & availability,
- no presence → transition demand,
- no availability → warning → transition (15 s after not available),
- attentiveness (criteria): important for steering control thresholds

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,
- duration of transition demand (and phase) at least 10 s and
- warning escalation after 4 s
 - no distinction between events (planned/unplanned) needed!
- transition ends = driver manual control or start MRM (after 10 s),
- failure → transition demand initiated,
 - exemption: severe ALKS or severe vehicle failure → MRM

Information to the driver

Paragraph 2.8.

The following shall be indicated to the driver:

- system status:
 - unavailability, display when activated, change to deactivation,
 - transition demand,
 - minimum risk manoeuvre,
 - emergency manoeuvre ,
 - any failure.
-
- Aim is to achieve “standard” for automated systems.

“What”

“How”

→ let's discuss later in detail
when we come the text

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 as soon as possible,
- slow vehicle down in lane (max. 4 m/s²),
- hazard warning lights activated,
- lane change (to slower lane or hard shoulder) possible
 - necessary: sensors to the rear (requirements defined),
- 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) in case of imminent collision risk,
- 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),
- collision risk passed → EM end → transition demand initiated,
- hazard warning lights activated if vehicle in standstill.