

Note by the secretariat

Informal document **GRRF-86-36**
86th GRRF, 12-16 February 2018
Agenda item 9(b)

GRRF recommendations to the IWG on ACSF on the basis of GRRF-86-20-Rev.1

Notes taken during the 86th GRRF session
(on 14/02/2017 and 15/02/2017)

GRRF focus: ACSF of Category B2 as “SAE Level 3”

Given the short deadline:

GRRF proposes to cluster items and assign them to some task forces
(Items 4, 8, 9, 10 may already be / could be handled by other groups)

1. General considerations / establish the limits of the system – GRRF
2. Operational design domain (ODD)
3. Dynamic driving tasks
 - a. Dynamic control of the vehicle
 - b. Manual override
 - c. Transition procedure (and period), linked to driver monitoring
4. System reliability (“Annex 6” + testing + redundancy considerations)
Focal point: United Kingdom
5. Minimal risk maneuver (once limits of system are established)
6. Information to the driver
7. Driver availability recognition / Driver monitoring
8. Recording of information / DSSA – (Consult WP.29)
9. Cyber-security – Focal point: TF on CS/OTA
10. Periodical technical inspection (PTI) – Focal point: Sweden

Note: items that may be addressed together by one task force have the same color

1. General considerations

Input from GRRF

- Which traffic situations does the system have to master?
 - Highway conditions (as defined for ACSF of Category C)
 - Max operation speed? Consider opt.1 max[80 km/h] or traffic jam assist, opt.2 Vmax, Commonality to both: core set of performance requirements?
Possibly: as defined in the ODD declared by OEM, with a minimum set.
 - 100% of normal situations within ODD then: initiate Transition Demand (TD) / minimum risk maneuver / emergency maneuver.
 - Consider activation only if system verified that it can manage the situation (within the ODD)
- Traffic rules considerations: system shall know which traffic rules apply and follow them (within its ODD).
Examples:
 - Detection of relevant traffic signs and subsigns, incl. variable message signs etc.
 - Compliance with highway code: ACSF to develop methodology suitable for use in the context of Mutual Recognition to verify the vehicle capability to comply with traffic rules.
- Which kind of situations result in a transition demand (depending on the boundaries of the operational design domain (ODD))?
 - Planned transition(s), unplanned transition(s), transition(s) when boundaries are exceeded, emergency transition(s) – considerations on Secondary Tasks (ST), see WP.1 discussions
- Which value of lead time is sufficient? Decision based on research necessary / consider human behavior issues. Vehicle performance impacts TD, lead time value and allowed ST.

2. Operational design domain (ODD)

Slide not reviewed/commented in detail by GRRF.
(See slide “1. General considerations”)

Highway* up to the speed defined by the vehicle manufacturer, but not exceeding 130 km/h.

* as declared in ACSF of Category C (UNECE/R79 → § 5.6.4.2.3):

“Activation by the driver shall only be possible on roads,

- where pedestrians and cyclists are prohibited and
- which, by design, are equipped with a physical separation that divides the traffic moving in opposite directions and
- which have at least two lanes in the direction the vehicles are driving.”

3. Dynamic driving tasks (1/2)

Input from GRRF

System can cope with all dynamic driving tasks within its ODD:

Examples of possible situations, which have to be considered (Actually, not all situations can be detected by the system):

- Construction area,
- Narrow lane or curve,
- Inclement weather,
- Low friction coefficient of road surface,
- Obstacles/ animals,
- Other vehicle broken down, covering lane partly (pedestrian),
- Detection of signs of police officers,
- Detection of emergency vehicles, ...
- Accomodate easy access to motorway of other vehicles – [as well as other requirements from traffic code]
- [Cope with platooning] – maybe at a later stage

3. Dynamic driving tasks (2/2)

Input from GRRF

Regulatory provisions for longitudinal control (accelerating, braking) and lateral control (steering) are necessary.

→ Longitudinal control: ACC, (non-) emergency braking (throttle / brake)..
(candidate for a structured (w/ agenda) webex meeting within 4 weeks)

Provisions for emergency braking measures (incl. emergency steering measures [outside / within the lane]) by the system, if the time for a proper transition procedure is too short. (keep provisions consistent with UN Regulation No. 131)

The requirements shall define the performance of the dynamic driving task including object and event detection response (OEDR) (e.g. protective braking). [Considerations for provisions on: detection / sensor technology, max speed as function of sensor performance, deterioration, fog situation where sensor sees better than driver etc.]

→ [Candidate for a structured webex meeting before the next ACSF meeting]

4. Traffic rules

Text moved in slide “1. General considerations”

System shall know which traffic rules apply and follow them (within its ODD).

Examples:

- Detection of relevant traffic signs and subsigns