

Special Interest Group on UN-R 157- 8th meeting

- Date and time: 13 & 17 September 2021, 09.00-12.00 (CET/ Geneva time)
- Attendance: Leadership (EC, UK, DE), Group attendees (~62)

Summary:

- Notes of 7th meeting and agenda of 8th meeting approved without changes.

- Lane change (LC) and speed increase:

- a. Higher speed (UNR 157-08-03):

String stability

Industry noted that they had discussions with the JRC over the summer about the string stability proposal. The conclusion was not to include any technical requirements for string stability but to introduce provisions that require the system to avoid string instability. As such it was proposed to revise the definitions of 2.21. and 2.22. to a single definition of ‘string instability’, add provisions around requiring strategies to avoid string instabilities disrupting traffic flow following a change to following distance to 5.2.3.3., and remove the proposed requirements in 5.2.9. and 5.2.10.. JRC were accepting of these changes and there were no objections to them. Group conclusion: Agreed to take these changes forward.

Industry proposed to revise 5.2.1. (UNR157-08-12) to also cover stable driving behaviour of the system. UK questioned what was meant by “disturbances of reasonable limits” and how that could be quantified. The leadership suggested to reference the emergency manoeuvre and anything less than that the system should recover safely from. The wording was revised by email exchange between the two session with the text proposed being that noted in UNR157-08-18. Group conclusion: Agreed to take these changes forward.

Wrong way driver

Agreement to the slight revision and location of the text on wrong way driver which is now located in para. 5.2.8..

Pedestrian Scenario

Group conclusion: Agreement to the text that mitigating action should be taken to avoid collision with pedestrian at speeds over 60 km/h in para. 5.2.5.3..

Driver models

It had been previously agreed to add JRC's fuzzy safety model (FSM) into annex 3.

Group conclusion: The text of para. 5.2.7. produced by the Leadership to incorporate the model was agreed with some minor editorial changes.

Industry proposed some minor modifications to Annex 3 (UNR157-08-12) to make clear that the models are provided for guidance, to remove some duplication in the description of the JRC model, and remove the web link and email provided by JRC since that would not be appropriate for a UN Regulation. Group conclusion: These changes were agreed and the Leadership would also work with the UNECE Secretariat to work out the best way to provide the web link and email. JP also proposed some minor modifications to Annex 3 (UNR157-08-06) to make a consistent reference to a 'competent and careful human driver', remove the origin details for certain parameters which was contained in the description of their model, and a clarification to the description of the JRC model.

Group conclusion: These changes were also agreed.

Operating in degraded state

Industry proposed to modify para. 5.4.2.3. and 6.4.1. (UNR157-08-12) as they felt that it unduly constrained when the system could operate. They noted that an interpretation could mean that even if the system could operate safely in a degrade state because of a failure it would not be allowed to do so. SE and JP raised concerns with how the change could be interpreted. Group conclusion: It was agreed to put the proposal in square brackets for everyone to review ahead of the next meeting.

Detection range

SE raised concerns that there were circumstances that braking performance above 5m/s^2 was not achieved and therefore the system would effectively be unable to respond to objects in time. Industry noted the German data (UNR157-07-13) had shown the braking performance was always greater than 5m/s^2 and that there were other provisions to deal with weather conditions affecting performance. Also highlighted was that the sensor performance goes beyond the ranges specified and these were the ranges at which 100% detection was guaranteed. Discussions were held outside of the meeting to revise the text

to make clear that control strategies need to adapt to the performance of the sensor and the braking capability in the prevailing conditions. Group conclusion: The text was agreed as noted in UNR157-08-17.

FR introduced their proposals (UNR157-08-05) to address their concerns that there were no provisions dealing with the dynamic performance of the vehicle and the deterioration of components. Industry's view was that the issue was reasonably covered by provisions elsewhere, such as 5.2.3.2.. Following the changes to 7.1.1. as proposed by UNR157-08-17, FR was content that their concerns were covered by that wording.

Allowing higher speeds with no lane change capability

Discussion on this item was deferred until more progress was made on the lane change proposal.

Changes to testing requirements

JRC presented (UNR157-07-09) the basis for their proposal to amend Annex 5 (UNR157-07-07) and Annex 6 (UNR157-07-08). They were looking to separate the scenarios clearly into two annex, track testing and real-world testing, using track testing for testing critical scenarios. Introduce a new set of scenarios and also require a distribution in difficulty of avoidable scenarios. They were also looking to test collision scenarios to understand what would happen in those cases. Industry questioned the need to test collision scenarios and the need to have a distribution of the scenarios. They also suggested that given the safety risks the wrong way should only be done by audit and should not be done on the road. JP noted that a physical test for type approval under unavoidable collision parameters is not feasible and should be evaluated by simulation. JRC highlighted that the distribution was to ensure that the same rigour was applied by all technical services in each country. They also noted they are trying to create common minimum requirements for on-road testing, avoiding trivial circumstances but still covering what can be expected on the road. Group conclusion: JRC would continue discussion outside of the meeting to finalise the testing proposal.

b. Lane Change (UNR157-08-04)

Industry presented their proposal to modify the definition of “emergency manoeuvre” (“EM”) (UNR157-08-13). JP highlighted that an EM should be in a critical situation and

therefore should always be linked to the imminent collision risk. SE considered that the changes would result in an increased frequency of an EM. The industry pointed out that they would like to avoid the vehicle being stuck behind an impassable object were they not allowed to leave the lane.

JP briefly introduced their proposals (UNR157-08-07) noting that they thought that the vehicle should identify vehicle indicating into target lane and are reviewing the parameters for lane change manoeuvre. They also considered minimum risk manoeuvre lane change should be like that for the Risk Mitigation Function and have provided some analysis around deceleration during such a manoeuvre.

There was no time left to discuss the Lane Change proposal further.

c. Horizontal

Not discussed or any proposals made.

- Consideration of amendments clarifying current UN-R157:
 - a. Open issue on “detectable collisions”: Industry presented their proposal (UNR157-08-14) to address the issue. The UK agree that the provisions in 5.1.1.1. were covered elsewhere but was concerned that using “reasonably foreseeable” did not clarify the situation as an ALKS was supposed to avoid reasonably foreseeable collisions. Group conclusion: To continue exchange with interested parties on the text outside of the meeting to find a suitable compromise. Discussion in SIG to be resumed as soon as new compromise proposal has been provided.
 - b. No new revision of proposal GRVA/2021/2 was provided by OICA; topic will be revisited as soon as input has been provided.
 - c. Improvement in the audit and in-use requirements: JRC/EC proposals for this topic (UNR157-04-05 and UNR157-04-06) were not discussed due to time constraints.

- AOB:

Coordination of work: The recommended amendments of the Heavy Duty ALKS proposal by the IWG EDR/DSSAD group (UNR157-08-15) were presented. It was agreed to take forward those amendments as informal document for GRVA to amend the working document on the agenda for WP.29 (WP.29/2021/143).

Action points for next meeting:

- Everyone to review the documents for speed increase and lane change, which shall be sent to GRVA in September 2021.

Next meetings:

- 7th & 8th October 2021 (12.00-15.00 CET)
- 8th & 9th November 2021 (09.00-12.00 CET)
- 9th & 10th December 2021 (TBC)