

Special Interest Group on UN-R 157- 5th meeting

- Date and time: Thursday, 10 & 11 May 2021, 12.00-14.30 (CET/ Geneva time)
- Attendance: Leadership (EC, UK, DE), Group attendees (~50)

Summary:

- Agenda and notes of 4th meeting approved without changes.
- Consideration of amendments clarifying current UN-R157:
 - a. Priority vehicles & other road users: UK presented UNR157-05-15, which would be the proposal that would be put forward for the next session of GRVA.
 - b. No new revision of proposal GRVA/2021/2 was provided by OICA so the group agreed to revisit this item at the next meeting.
- Review scope extension for heavy duty vehicles:

OICA presented revised proposal (UNR157-05-09). DE questioned whether the proposal was conflating the approach about traffic rule and following distance (values in the table for the minimum following distance are not “target values”). Agreed that 5m/s² should be the basis for following distance at this stage but that traffic rule should always prevail. SE queried the minimum distance of 2m when <2m/s, suggested that it should be 2.4m. DE position was that TTCLaneIntrusion should remain at 6m/s since the criticality would not change with HDV. OICA highlighted that it would therefore not correspond to the following distance table. Agreed for it to remain at 6m/s given general support for that. Reference to para. 5.1.2 (national traffic rule) introduced into sensing requirements to cover national specifics, e.g. DE requirement for 50 m gap for HDV in tunnels. UK requested provisions to demonstrate sensing capabilities for vehicle combinations to show that vehicle length was being accounted for. OICA believed that DSSAD data elements would remain the same for HDV but would confirm. OICA would update the text following the discussion which would be circulated to the group (UNR157-05-09rev1) and then sent to GRVA.

- Speed increase and lane change:

Following distance

JP presented a proposal for minimum following distance (UNR157-05-03) that was based on Korean proposal during ACSF IWG. Performance would be based on braking capability to avoid leading vehicle coming to sudden stop. Values below 60km/h would be unchanged. OICA thought that sudden stop (immediately to 0km/h) would be unrealistic and would be option for evasive manoeuvre in such cases. JRC supported idea on shorter distances being permitted if system can perform better than the table.

ROK presented UNR157-05-13 recalling that the latest version of the Korean proposal in the ACSF group considered that 2s was reasonable at higher speeds. OICA were supportive of 2s basis as more realistic driving style. JP confirmed they are okay to remove the table above 60km/h, thus applying traffic rules above 60 km/h. OICA suggested that the table be extended to 100km/h to bridge the gap between current table until 60 km/h and national traffic rules (2.0s from 100 km/h). Next meeting to finalise this discussion.

String stability

OICA highlighted that the JRC analysis on string stability was based on Adaptive Cruise Control (ACC) and Automated Driving Systems (ADS) should not behave like that. They also thought it was doubling up requirements on safety distance and collision avoidance and resulting in excessive testing. CLEPA noted there wasn't always going to be ALKS in the chain of vehicles so requiring string stability would not necessarily result in desired "anticipatory driving behaviour". JRC pointed to literature which suggests that a string stable vehicle has benefit in a chain of non-string stable vehicles. They feel that humans naturally drive string stable so provisions should be included to replicate a careful and competent driver. DE supported the idea of trying to introduce smooth driving and avoiding poor control strategies and therefore supportive of JRC's suggestion to introduce string stability in principle. OICA were supportive of the concept of naturalistic driving but as a described driving style rather than test burden (time consuming assessments, higher costs). Group conclusion: driving style (smooth, naturalistic, etc.) is an important issue. Chair requested OICA/JRC to come with revised proposal for requiring smooth driving style.

Detection range

SE supported JP in basing front detection range on 3,7m/s² and also noted that the footnote is not clear that the speed needs modified as part of the strategy. OICA see minimum detection range should be based on 5m/s² which is more naturalistic driving. OICA also considered that detection range with 100% recognition was only one way of responding to a situation(e.g. pointing to paragraph for inclement weather which addresses the nominal case., UK noted that longer detection range needed for anticipatory driving. Chair requested OICA to come with more information on alternative strategy than a detection range. All were requested to consider the main purpose of the chapter and the data supporting how the values are chosen.

Scenarios

JRC presented UNR157-05-12 which provided responses to the comments received from OICA on their proposal to combine the current driver models into a universal model. Chair request that everyone send feedback to JRC for the next meeting.

Pedestrian Scenario

JP agreed with DE proposal of avoidance up to 60km/h, with agreement in principle by the group. UK stated that there should be anticipatory requirements beyond 60km/h so that a vehicle still should respond to pedestrians at higher speeds. Chair requested that this is brought into the wider anticipatory requirements that were to be created.

Wrong way driver

JP presented proposal for para. 5.2.4 and 5.2.4.1 (UNR157-05-14). OICA highlighted that it was a challenge to respond to wrong way driver; hopefully a very rare case and think it is sufficiently covered by emergency situation/case. JP agreed that it was not foreseeable therefore should be about minimising risk. UK questioned difference between para. 5.2.4.1 and 5.2.5. Agreed that text should be clarified but both are needed; one is to avoid collision other is to minimise the risk.

Evasive manoeuvre (EM)

JP view that EM should only happen when full braking performance is not sufficient and consider it safer as detection in the adjacent lane is not good enough with current technology. OICA considered that it was safer to steer around and not wait for the last moment for a full braking (anticipatory behaviour).

Minimum Risk Manoeuvre (MRM)

JP were against MRM without lane change at higher speeds. Supported by the UK.

Lane change (LC)

OICA presented UNR157-05-10 that defined the different lane changes being considered and the logic for when each would be necessary. The rationale was used to create their proposal for EM (UNR157-05-11) which the Chair requested everyone to review. JP presented UNR 157-05-04 to indicate why their position is that only emergency LC should be considered and that regular LC is not a priority.

- AOB:

Agreed to have meetings in September on the 13th and 17th and that future meetings would run till 15:00 (CET).

Action points for next meeting:

- OICA/JRC to devise a revised proposal to address smooth driving capability/anticipatory behaviour.
- Everyone to consider the purpose of minimum detection range and data supporting how the values should be chosen.
- Everyone to provide feedback to JRC on their proposed driver model.
- Everyone to review OICA proposal for EM.
- Everyone is requested to provide further input/concrete text proposals for open issues in advance of the next meeting (using UNR157-05-05 and subsequent update as a basis).

Next meetings:

- 10-11th June 2021 (12.00-15.00 CET)
- 08-09th July 2021 (12.00-15.00 CET)
- 13th & 15th Sep 2021 (12.00-15.00 CET)