

**Draft Report of the 15th Session
GRSG informal group on
awareness of Vulnerable Road Users proximity
in low speed manoeuvres (VRU-Proxi)**

Dates: 9th and 10th of September 2020
Venue: Web meeting – Webex

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Chairs: Mr. Matsui (J) and Mr. Broertjes (EC)
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1. Welcome and introduction

The Webex meetings were opened with a nice welcome and introduction by the Chairs. The Chairs expressed their happiness for the members still being safe and in good health. The Chairs announced the dates for the next meeting being the 17th and 18th of November 2020 (after the meeting the Chairs decided to add an extra half day on the 19th of November 2020) and indicated that these will also be web meetings in the morning (CET). The Chairs also thanked Mrs. Cecilia Fredriksson (OICA) for the provisional preparations for a physical meeting in November in Sweden and stated that the intention now is to organize a physical meeting again hopefully in the beginning of 2021 because of the currently ongoing Covid-19 situation.

2. Adoption of the agenda

Document: VRU-Proxi-15-01 (Chair)

The proposed agenda was adopted by the group.

3. Adoption of the report of the 14th VRU-Proxi session and follow-up meeting (Webex)

Document: VRU-Proxi-14-21 (Chair)

The Secretary received no comments on the report of the previous meeting. The report was adopted and the Chairs thanked the Secretary for establishing the report.

4. Outcome of 118th GRSG Session

The Chair provided positive feedback to the group regarding the decision of the 118th GRSG session (15-17 July 2020) to adopt all the submitted documents for MOIS (1st regulation

proposal), Reversing Motion (1st regulation proposal), BSIS (amendment) and proposed changes to the Terms of Reference. The Chair of GSRG will ask for formal WP.29 endorsement at the November 2020 session.

5. State of play of close-proximity vision and detection rulemaking in the contracting parties

The EC informed the group about current state of play regarding the revised General Safety Regulation. A possible delay of the effective dates of the GSR measures has been discussed within the European Commission but the final decision was made to not change the implementation dates.

6. Forward motion Vehicle driving straight or taking off from standstill

6.1. Moving-Off Information System

Documents: VRU-Proxi-15-03
VRU-Proxi-15-04
VRU-Proxi-15-04 Rev1

OICA presented OICA&CLEPA comments and new proposals to amend the MOIS regulation. The issues were discussed in the group and the outcomes are also reflected in document VRU-Proxi-15-04 Rev 1:

5.2.2.3.3. Proposal to change “shall” into “may” has been agreed

5.4.2 – 5.4.4. Correction of number as proposed has already been modified by the UN Secretariat in Working Document 2020/122 as submitted to WP29 for the November 2020 session.

5.5.1 Agreement to remove “including stationary phases” and to change “calibrated” into “initialised” to align with the heading of section 5.5 (as changed in earlier stage).

5.7.4 No agreement by EC and F on removing “The Technical Service shall verify the operation of the system according to the strategy” as it is a required by the GSR.

5.8.3 Agreement by EC and F to replace “collision” by “failure” and to remove “to the failure warning signal”.

Proposed changes and additions to definitions below the figure 1 and table 1 in Appendix 1 were agreed.

It was discussed whether to submit these proposed changes to GRSG October 2020 session. The Chair proposed to wait as there may be more changes in the near future and to not confuse with the draft regulation that is current in the WP29 approval process. The Chair proposed to plan for submitting a document to the GRSG April 2021 session.

The Chair request to the other stakeholders and CPs to look for accident data.

OICA also presented document VRU-Proxi-15-03 with the following proposals:

- Proposal to change paragraph 5.4.2 “Manual deactivation” as it may have an unintended impact on other systems outside this regulation. EC was not convinced that this change is necessary at this immediate moment in time but agreed that it may be appropriate to permit deactivation of optional not safety related and regulated functions (e.g. front ultra-sonic parking sensors) at the same time. This would today, strictly speaking, forbidden. Therefore further reflection is needed and it was agreed to work on proposal to rephrase.
- Static Crossing Tests: it was questioned whether a tolerance angle needed for the perpendicular trajectory. G checked AEBS R152 where pedestrian/target is also moving perpendicular, also no tolerance given here. The Chair stated that regulations shall be in line and decided to park this for the next session.

6.2. Vehicle taking off from standstill (M1/N1)

Document: VRU-Proxi-15-08

J presented the proposal for a new standalone regulation for M1/N1 close proximity safety when vehicle moving off from standstill. Also the timing plan was presented by J. Remark given by G that it is maybe better to detect pedestrians instead of cones, as was outlined in the presentation. J expected to present an update in the next meeting. The Chair requested to the CPs and other stakeholders to look for accident data in relation to this proposal.

7. Reversing Motion

Document: VRU-Proxi-15-05
VRU-Proxi-15-07

OICA/CLEPA may present discussion points and proposed editorial changes for the Reversing Motion regulation.

OICA/CLEPA present and explained issues and proposals for Reversing Motion. The issues were discussed in the group and the outcomes are also reflected in document VRU-Proxi-15-05 Rev 2:

- Whole document: Proposal to change the naming from Reversing Motion into Reversing Safety. FR suggested to use Reversing Manoeuvre. Chair stated to think about renaming the regulation and take this on board in a future amendment of this regulation.
- 2.1 Proposal to extent paragraph with the addition of detection devices next to camera-monitor devices was discussed and understood but no decision as it may be getting too restrictive.
- 12.9 (new) Proposal to insert new paragraph 12.9 “Starting prevention device” for typical bus applications. It was discussed that as long as the starting prevention device is still activated, the vehicle will not be in the active mode (which is a condition in paragraph 15.1.1.). Therefore it seems not to be necessary to add paragraphs 12.9 and 15.1.1.). To be checked again by OICA/CLEPA.
- 15.2.1.5 & 15.2.1.6 Proposal to change / add paragraphs 15.2.1.5 and 15.2.1.6 was

discussed. It has been agreed to reconsider this proposal and if the change is really different as it seems only a restructure without changing the content CPs asked to check if current text could lead to problems, if so then changes can be made for a future update. **ACTION CPs to check if this is really problematic text.**

16.1.1.3 Proposal to add “or the backing event is finished” to paragraph 16.1.1.3 was agreed. Second part regarding max. reversing speed for showing the image was discussed. OICA argued that the intention is to prevent distraction or driving too fast (misuse) in reversing mode. J notes that a max. reversing speed is not in line with FMVSS. EC questioned whether a reversing speed limit could be applied. ETSC understands the risk for young people. UK stated that the view shall be maintained for older people. EC, SE and UK not in favor of proposed change, in general no consensus on the proposed speed threshold for showing the image.

17.1 Proposal to add “and the backing event is not ended” seemed to be redundant but the proposal was accepted.

OICA presented VRU-Proxi-15-07 with the following issues:

- Reversing Motion regulation in relation to highly automated functions as Automated Parking and Rear AEB. EC proposed to consider these functions for the moment as addition and the current text shall be checked if it already allows a Rear AEB (and in that case a backing event may never start).
- Proposal to amend the regulation to allow several camera or detection sensor installation locations for incomplete vehicles (body-builders). The need was recognized but it was questioned whether the current text already allows this. To be checked again if this is really necessary, look if flexibility can maybe be achieved on component approval level (section 3.4).

8. Direct Vision

8.1. Differentiation

Document: VRU-Proxi-15-06

ACEA/Apollo presented the status of the discussions in the Taskforce for differentiation of vehicle groups regarding the direct vision requirements.

Discussion urban versus rural vehicle groups:

UK stated that a lot of investigation has been done by Transport for London (TfL) including gathering vehicle registrations data from vehicles that drive into London. OICA explained that this was discussed in the Expert Meetings of the Direct Vision Standard but this data was never available. Apollo noted that these data is personal data and cannot be shared, furthermore the sample would be small and probably unscientific.

Construction vehicles are overrepresented in London but it seems not clear if these are really N3G vehicles. OICA argued that infrastructure and the equipment of vehicles differs between cities in EU and in all UN cities. The Chair stated that decisions have to be made by pragmatic choices. LDS asked for more detailed versions of the heat maps with higher resolution and

road type info. OICA stated that VECTO segmentation already takes the application of vehicles into consideration. The Chair asked whether sleeper cabs are also used in Japan. J confirmed that also sleeper cabs are used in Japan but these are typically smaller due to different cab configurations in Japan.

EC stated that the intention of VECTO is to be used for calculations of emissions and not for VRU collisions, but it can reasonably provide an acceptable justification. It shall be a pragmatic holistic approach but it must be on the safe side. ECF questioned if CPs can provide more collision data. The Chair stated that this request has been put on the table many times and it will slow down the process as it is not expected that more or new data will be available on a short term.

OICA raised the concern that too much data is requested in the Wish list and this cannot be provided by OICA as some of the requests are too far reaching or will not be available for the manufacturers. This was agreed and the conclusion was to continue this discussion in the Task Force and make a proposal on what can be produced and what cannot be produced.

8.2. Physical Method Testing

Document: VRU-Proxi-15-02

Loughborough Design School (LDS) presented the status and results of the physical method testing. This was done in the premises of the Loughborough University.

The results are very promising. Some differences were found like a mismatch in steering wheel position, mirror set-up and cab tilting. After some initial corrections good correlation was found. Further analysis and testing will be done before the next VRU-Proxi meeting in November 2020

For additional windows in the main area below the windscreen line a first proposal is to use a separate pole with a particular height (current idea is the height equal to the lowest point of the particular window) and measure the additional visible area.

OICA raised the question on what needs to be done if different results between measurement and virtual are found. Take the worst or the best result? LDS answered that this discussion needs to be done when there are more results of more vehicles.

OICA questioned whether the steering wheel and wipers can be taken out from the assessment as these are making it very complex. This cannot be decided at this stage but could be considered later, to be parked for now.

The Chair stated that the use of tools for physical measurement will be free. The equipment used by LDS can be used as an example in an annex on how to test it. The mats and test rig shall not be certified. The physical test shall be considered as a backup for the digital test.

OICA raised the issue concerning vehicle height as for Type Approval, every vehicle must comply. For Type Approval the worst case configuration of the vehicle family shall be assessed. It was agreed that the proxy-average height shall be used like it was discussed and agreed in the Expert Meetings for the Direct Vision Standard in London.

SE stated that a process needs to be followed for generating CAD data and how to deal in

provisions for virtual testing in UNECE regulation. The Chair mentioned that the physical test should be the baseline and CAD can be used to demonstrate. However CAD might also be possible for Type Approval but verification of the CAD model should probably be done by physical testing or by a reference model.

8.3. Limit Values for different groups of vehicles within the vehicle category N3

Document: VRU-Proxi-15-09

LDS presented document VRU-Proxi-15-09 during the meeting. As it was not distributed prior to the meeting OICA raised concerns that the presentation could contain new information and that OICA was not able to prepare and study on this proposal. The Chair decided that LDS could continue presenting the slides but no decisions shall be taken if there is any new information included.

Limit values

LDS suggested in VRU-Proxi-15-09 the following average VRU-distances and corresponding volumes:

Level A: Average VRU distances of 1.7 m to the front, 2.5 m to the passenger side and 0.6 m to the driver side resulting in a visible volume of 11 m³

Level B: Average VRU distances of 1.9 m (1.8 m³) to the front, 3.0 m (3.4 m³) to the passenger side and 0.93 m (2.8 m³) to the driver side resulting in a visible volume of 8 m³ (EMSR).

Furthermore the absolute minimum requirement for trucks shall be 4.36 m³ (this value was initially 3.2 m³ but has been corrected in Revision 1 of VRU-Proxi-15-09).

The Chair referred to the VRU-distances for level A as proposed by UK in the VRU-Proxi 13 meeting in Osaka and expressed that there appeared to be broad consensus between the CPs. OICA did not agree and noticed that not many CPs were attending the VRU-Proxi 13 meeting so there was not a real broad consensus of the CPs. The Chair reiterated his view and no further counter arguments or remarks were noted for the time being.

OICA stated that the proposals that are now on the table go beyond the cost benefit analysis that has been done for the GSR.

Considering the concerns of the industry, the Chair suggested, based on the UK proposal, an average VRU distance of 1.7 m to the front, 2.5 m at passenger side and 1.0 m at driver side (instead of 0.6 m) in combination with combined approach. If a separated approach is chosen then the requirements in terms of VRU-distances shall be less stringent.

UK proposed to ask what manufacturers can offer to improve direct vision. UK stated that the requirements shall be quite stringent for vehicles that will enter often into urban areas. OICA responded that a proposal of the industry was presented in VRU-Proxi 13 including a line of argumentations and considering one requirement for all vehicle groups. OICA did not get any feedback or response from CPs on this proposal.

SE argued that we also have to look to other systems like AEBS for vehicles, a kind of

relevancy check needs to be done.

Combined versus separated approach

DK stated that this regulation must improve direct vision and the industry has to make changes and is in favor of combined approach and differentiation between level A and B.

UK and DK have a slight preference for the combined approach and using the UK proposed values for level A (urban). Limit values for Level B need to be discussed in more detail.

SE initial position is more leaning towards the combined approach. SE and FR have no official position on the values yet and stated that further technical consideration is needed. Both SE and FR do not support any decision on limits yet.

Conclusions:

- There is a slight preference for the combined approach.
- Industry is asked to look for the impact and to give feedback on:
 - The proposed UK values for average VRU distance: 1.7 m to the front, 2.5 m at the passenger side and 0.6 m at the driver side and seeing the head of the 5th %ile Italian female (height to be checked) by using the combined approach.
 - What VRU distances can be achieved and what could be proper values for Level A and Level B including argumentation.
- The Taskforce shall be continued and shall present proposals on differentiation and volumetric requirements in the next meeting.

8.4. Direct Vision regulation for N2

This subject has not been discussed during this meeting.

9. Next meeting

16th meeting: **17-19 November 2020** (Webex- meeting).

10. Any Other Item

No other items were discussed.