

**Draft report of the 18th Session
GRSG informal group on
awareness of Vulnerable Road Users proximity
in low speed manoeuvres (VRU-Proxi)**

Dates: 26th and 28th of April 2021

Venue: Webex meeting

Chairs: Mr. Peter Broertjes (European Commission)
Mr. Yasuhiro Matsui (Japan)

Secretary: Mr. Johan Broeders (OICA)

1. Adoption of the agenda

Document: VRU-Proxi-18-01 (Chair)

The agenda was adopted by the group.

2. Adoption of the report of the 17th and the wrap-up VRU-Proxi session (online meeting)

Document: VRU-Proxi-17-18 (Chair)

J made a remark about the definition of the poles in section 4.2. The report has been adapted accordingly in VRU-Proxi-17-18 Rev1. This revised report was adopted by the group.

3. Update of WP.29 and GRSG discussions and adoptions

The Chairs informed the group that all submitted documents on behalf of VRU-Proxi were adopted in the 121st session of GRSG. The Chairs appreciated the work and thanked OICA for the effort and contribution to these documents.

The Chair explained that OICA raised a discussion in GRSG that went in a too technical direction (definition of blind spot and assistance technology as replacement of safety improvement to direct vision). The Chair notified the group that such technical issues should be brought up for discussion first in the IWG. If no consensus can be achieved in the IWG, the different options could be tabled at GRSG for a decision. OICA mentioned that the intention was to raise awareness of CPs on the subjects and levels of discussion in the IWG and to ask more CPs to get involved in the current debates in the IWG. The Chair noted his appreciation of OICA's efforts to encourage more CPs to join. OICA noted that according the ToR a draft text must be submitted to GRSG in autumn 2021.

The Chair asked the preliminary opinion of the CPs whether technology may offset direct vision in general or for example for a small group of vehicles:

CP	May technology offset DV?	For small group of vehicles?
FR	No	Maybe for small number
UK	No	No
DK	No	No
BE	T.b.d.	T.b.d.
J	No	T.b.d.
SE	T.b.d.	T.b.d.
D	T.b.d.	T.b.d.
TR	T.b.d.	T.b.d.

The approach in London regarding the Direct Vision Standard (DVS) was mentioned by Industry as a possible alternative way forward. The London DVS permits vehicles to be equipped with other safety systems if the required direct vision level cannot be met. The stakeholders from the UK explained that the DVS is applicable for all vehicles in contrary to a UN regulation where requirements are only considered for new vehicles. Due to the fact that direct vision cannot be retrofitted to existing vehicles, safety systems are accepted by Transport for London as an alternative. Furthermore, the timescale for the introduction of the DVS in London was very compressed and far too short for manufacturers to adapt their vehicle models to the required standards.

4. Direct Vision regulation

4.1. Differentiation between groups of vehicles

Document: VRU-Proxi-18-02 Rev1 (Taskforce DV)

Apollo/ACEA presented document VRU-Proxi-18-02 Rev1 and explained the proposed differentiation between vehicle groups and the rationales behind the proposals. For better understanding and to avoid confusion it was proposed to rename the vehicle groups:

- Level A to be renamed to Level 1 (higher performance requirement for vehicles regularly used in urban areas)
- Level B+ to be renamed to Level 2 (intermediate performance requirement for vehicles sometimes used in urban areas with specific operational limitations)
- Level B to be renamed to Level 3 (lower performance requirement for vehicles that are rarely used in urban areas)

SE proposed to amend the differentiation table concerning the large vehicles needed for heavy transport, e.g. timber transport. This proposal will be further discussed in the Taskforce Direct Vision.

The Chair appreciated the work and welcomed the clear explanation and useful differentiation. It fulfills the GSR requirement by taking the different specificities of vehicles into account. T&E agreed and stated to have a good building block now to achieve a higher ambition level for vehicles that drives predominantly in city areas. It was suggested to incorporate the table as an annex into the draft regulation.

4.2. Physical method testing

Document: VRU-Proxi-18-04 (LDS)

Loughborough Design School (LDS) presented in VRU-Proxi-18-04 the status and results of the further analysis and testing of the physical method. LDS estimated that the time for the physical measurement itself (without preparation) can be reduced from 4 to 2 hours when using laser distance measurement technology. LDS raised the tilted cab issue again and questioned what the real-life cab tilt possibly can be and how to deal with this in the virtual and physical test method. It was proposed to follow-up this topic in the Taskforce Direct Vision.

4.3. Assessment approach and limit values for different groups of vehicles

Document: VRU-Proxi-18-03 (LDS)
VRU-Proxi-18-05 (T&E)

LDS explained in VRU-Proxi-18-03 the direct vision volumetric assessment approach and its background. Also the relation between the visible volumes and the average VRU-distances was clarified.

Apollo/ACEA reported that in the Taskforce Direct Vision no substantial progress was made concerning the limit values.

Some CPs indicated to be not ready and prepared yet to decide and stated that all options must stay open. Therefore, it was suggested to draft the regulation with the different options that were tabled for the assessment approach and with the corresponding limit values in square brackets.

OICA/ACEA stated that the limit values will depend on the assessment approach and argued that as an alternative less severe direct vision requirements in combination with assistance technology should be implemented in the draft regulation as an option as well. Additional technology will support the driver and will further enhance road safety than direct vision improvement alone, as drivers are not always alert or looking to the most critical direction.

The group discussed about what should be implemented in the draft text. Possible approaches for Direct Vision requirements were summarized again:

1. Combined requirement + separate requirement to the front (t.b.d.) ⇒ “Hybrid approach”
2. Combined requirement + separate requirements to all directions (left + front + right)
3. Combined requirement only (with ambitious levels)
4. Combined requirement (less severe ambition level) + assistance technology

The Chair stated that there seems to be consensus between the stakeholders on implementing the combined approach as one of the elements of the direct vision regulation.

T&E proposes approach 1 (hybrid approach) and presented proposals in VRU-Proxi-18-05 to find consensus within the group.

- For a separate requirement to the front it was proposed for level 2 and 3 vehicles to redefine the front area and the VRU-height. There was some discussion in the group about the possibility of seeing half of the head (from top to the eyes) as a way forward.
- The question about funding required for the additional work (changed VRU-height and newly defined volume to the front) has not been answered and will be moved to the Taskforce discussions.
- The stick method has been discussed but considering only the top of the stick would not encourage truck manufacturers to develop lean mirror housings and lower door windows. In contrast to the stick method, the volumetric approach would take all direct vision improvements into account.

The Chair asked the CPs to provide their positions:

- D: open for all approaches. Physical test method is needed possibly with using sticks, to be discussed in Taskforce.
- FR: preference for combined approach in combination with requirement to the front for level 1. For level 2 and 3 only combined approach may be acceptable. No position on limit values now but could agree with compromise approach 4 from OICA/ACEA. Physical test method is needed.
- J: basis shall be direct vision, not with additional devices. Support approach 2 but more information from Japanese manufacturers (market situation) is needed. Will come with a proposal for limit values in next meeting. Could accept the T&E proposal as well but it depends on the limit values.
- UK: volumetric approach is possibly more accurate but some metric is needed as well.
- SE: sympathy for the reasoning and T&E proposal for concession but all options must stay open.
- DK: changes to vehicles are needed to achieve improved direct vision, the impact has to be accepted by the Industry up to an affordable level without destroying the truck industry. Compensation by indirect vision is not relevant as blind spot will not be eliminated completely.

OICA/ACEA mentioned that the proposal from the Industry will also have an impact on the vehicles and a part of the existing vehicle types will require adaptations to the cabs. But the key is that for some heavy vehicle applications the rate of change is very limited due to operational usage and many other (legal) aspects as presented in previous OICA/ACEA presentations.

The Chair concluded that the complete package must be drawn up by the Taskforce Direct Vision including all proposed approaches and limit values. Based on this comprehensive overview the IWG can decide what options (e.g. with square brackets) will finally be submitted to GRSG.

4.4. Direct Vision regulation for M2/N2

Document: VRU-Proxi-18-06 (OICA)

OICA presented in VRU-Proxi-18-06 a proposal for Direct Vision requirements for M2/N2. Within these categories of vehicles the vehicle models can differ substantially as the smaller vehicles are in general mostly derived from the N1 family and the larger vehicles are typically

based on platforms of N3 vehicles. The vehicles at the low end of these categories are less involved in accidents related to direct vision. It was proposed to consider the new Direct Vision regulation for the high end of these categories and either ECE R125 (due to other sitting position of the driver) or the new Direct Vision regulation for the low end of these categories.

The possible ways to discriminate between the low end and high end vehicles within the M2/N2 categories of vehicles was discussed. Some suggestions were made like, pay load, mandatory equipment of Class V/VI mirrors. As proposed by some CPs this topic will be followed-up and further investigated in the Taskforce Direct Vision.

5. Next meeting

19th meeting: 8th – 10th of June 2021, Web Meeting

20th meeting: [8th and 9th of September 2021, location / web meeting TBD] *(as placeholder in case deadlines for decisions are not met with a severe delay)*

6. Any Other Item

No other items were discussed.