

**Draft revised report of the 16th Session
GRSG informal group on
awareness of Vulnerable Road Users proximity
in low speed manoeuvres (VRU-Proxi)**

Dates: 17th, 18th and 19th of November 2020
13th and 14th of January 2021 (wrap-up meeting)

Venue: Web meeting – Webex

Chairs: Mr. Matsui (J) and Mr. Broertjes (EC)

Secretary: Mr. Broeders (OICA)

Remark: In this revision the discussions and actions of the wrap-up meeting in January 2021 have been added. The additions are marked in blue.

Changes in red were made due to a remark at the adoption of the report in VRU-Proxi-17

1. Welcome and introduction

The meeting was started with a nice welcome by the Chairs.

2. Adoption of the agenda

Documents: VRU-Proxi-16-01 (Chair)

VRU-Proxi-16-14 (Chair)

No comments, the proposed agendas were adopted.

3. Adoption of the report of the 15th VRU-Proxi session (Webex)

Document: VRU-Proxi-15-10 (Chair)

LDS mentioned that questions were raised on the proposed direct vision requirements and that the numbers would be clarified by LDS. No further comments, report was adopted.

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

The European Commission explained the actual status regarding the revised General Safety Regulation. Clarity was given about the 15 months deadline for requirements being available. It was agreed with OICA and other stakeholders that an adopted UN regulation by WP.29

within 15 months prior to the effective date (6 April 2021), instead of the official publication in Official Journal of the EU, would be acceptable because the text is stable from that point.

The Chair stated that the regulations for MOIS and Reversing Motion were adopted in the latest WP.29 session. The regulation for Reversing Motion will be laid down in UN Regulation No. [158] and the regulation for MOIS will be laid down in UN Regulation No. [159].

As indicated in previous meetings UK explained that the UK law will be an exact match with the EU legislation on the 31st of December 2020. After that date the UK Ministries will decide how to handle future EU and UN legislations in the UK law.

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

5.1. Moving-Off Information System

Document: VRU-Proxi-16-03 (OICA-CLEPA)

OICA/CLEPA presented the status of open and or new discussion points for the MOIS regulation for M2/M3/N2/N3. There was a broad consensus within the group for the proposals.

It was agreed to submit a Working Document from VRU-Proxi to the next GRSG session in April 2021, as supplement to the original series of the regulation. [This Working Document was prepared by OICA and discussed and agreed in the VRU-Proxi 16 wrap-up meeting in January 2021.](#)

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

Document: VRU-Proxi-16-09 (Japan)

J presented an update of the status of the proposal for regulation for vehicle taking off from standstill for categories of vehicles M1/N1. The proposal is based on direct vision, indirect vision, a detection system or a multi-modal system for close proximity at the front and side of the vehicle. J will elaborate the proposal and provide a draft regulation and test procedure for discussion early next year 2021, in preparation of the VRU-Proxi 17 meeting.

6. Reversing Motion

Document: VRU-Proxi-16-04 (OICA-CLEPA)
VRU-Proxi-16-11 (OICA-CLEPA)
[VRU-Proxi-16-16 \(OICA\)](#)

OICA/CLEPA presented the status of open and or new discussion points for the Reversing Motion regulation. The agreed modifications are noted in VRU-Proxi-16-11. Regarding information document item 11.1.1 and further entries under that item in Annex 2, notably with regard to the other technologies including camera or detection systems, the Chair asked

J & OICA to propose a list with what exactly shall be required to provide as information by manufacturers here.

It was agreed to submit a document with the proposed amendments prepared by OICA and other members for the next session of GRSG in April 2021. This Working Document has been discussed and agreed in the VRU-Proxi 16 wrap-up meeting in January 2021 with the following editorial changes:

- Title to be changed: “UN Regulation on uniform provisions concerning the approval of **devices and motor vehicles** ~~devices for reversing motion and motor vehicles~~ with regard to the driver’s awareness of vulnerable road users behind vehicles **when reversing**”.
- “Devices for Reversing Motion” to be replaced by either “Devices for means of rear visibility” or “Devices for means of rear visibility or detection” where applicable.
- “Devices for indirect vision” to be replaced by “Devices for means of rear visibility”.

7. Forward motion: Vehicle turning (Blind Spot Information System Regulation No. 151)

Documents: GRSG-119-05
GRSG-119-06
VRU-Proxi-16-10 (Secretary)
VRU-Proxi-16-13 (BAST)
VRU-Proxi-16-15 (OICA)

DE (BAST) presented a proposal for an alternative test method including turning for BSIS and the reasoning behind it (information signal may be given too early) as presented to the GRSG 119. The core requirements will not be changed, the proposal will give the manufacturers the possibility to test the system in an alternative way by taking the swerving of the vehicle combination into account. The proposed optional procedure, at the choice of manufacturers, is far more dynamic and thus complex than the one currently in the regulation that checks BSIS performance only when driving in a straight line.

BAST will perform physical tests to investigate the procedure and the tolerances that can be achieved. First results were presented in VRU-Proxi-16-13 in the VRU-Proxi 16 wrap-up meeting. The Chair questioned if this proposal shall be discussed in this IWG and if changes to the Terms of Reference are needed. Terms of Reference were discussed and a new proposal was agreed for submitting and approval in the next GRSG (annotated in VRU-Proxi-16-10). In the wrap-up meeting it was agreed to target for GRSG session in April 2022 with the note that this deliverable and target date depend on the evaluation of the feasibility of the alternative testing procedure, to be decided by the IWG.

OICA addressed an unintentional change in supplement 1 (paragraph 5.3.1.4) in BSIS. DE checked and confirmed that this mistake must be resolved. OICA tabled document VRU-Proxi-16-15 including the corrections to BAST for discussion in the VRU-Proxi 16 wrap-up meeting. During the meeting, a proposal from CLEPA (ZF) regarding the detection area and the speed range for the bicycle near the most front wheel has been included as a proposal within square brackets. This proposal shall be further discussed in the next IWG session and may be adapted later by submission of an Informal Document to the next GRSG session in April 2021.

8. Direct Vision regulation for M3/N3

8.1. Status Taskforce Direct Vision

Documents: VRU-Proxi-16-02 (FIEC)
VRU-Proxi-16-05 (Taskforce Direct Vision)
VRU-Proxi-16-07 (ACEA-OICA)

Apollo/ACEA presented VRU-Proxi-16-05 showing the status of the discussions in the Taskforce Direct Vision on differentiation between vehicle groups in relation to direct vision requirements.

The following levels were proposed:

- Level A concerning vehicles regularly entering urban areas (high requirements)
- Level B concerning for vehicles seldom entering urban areas (low requirements)
- Level B+ concerning construction vehicles being used in many operations where they do not enter urban areas but also some operations (construction/waste) where they do enter urban areas (in area between low and high requirements)

Proposed differentiation is based on vehicle segmentation as used for VECTO (Vehicle Energy Consumption calculation TOol https://ec.europa.eu/clima/policies/transport/vehicles/vecto_en) depending on axle configuration, engine power and cab type. The Chair expressed concerns for All Wheel Drive (AWD) vehicles being classified as category B+ vehicles. These vehicles may get in future electric motors in their hub units which gives the opportunity to lower the vehicle. The Chair asked to look for other discriminating vehicle parameters like the approach and/or ramp angle.

The individual proposals from LDS and ACEA/OICA for the limit values were presented and discussed. Apollo presented a compromise (or hybrid) proposal which actually makes use of both the separated and combined approach.

ACEA/OICA presented VRU-Proxi-16-07 to clarify the definition of N3G vehicles and the application areas where these vehicles are needed. It was also explained that the height of the chassis for N3G vehicle is a customer choice based on the operational needs. The manufacturer cannot influence this choice and is therefore only able to modify the cab or apply additional features to improve direct vision.

3 proposals were presented for N3G:

1. Introduce level B+ group for N3G as already shown by Apollo,
2. Qualify N3G in level B through attack angle ($>25^\circ$), otherwise level A
3. Qualify N3G in level B through front ground clearance, otherwise level A

There was a preference for option 2 with both conditions “attack angle $> 25^\circ$ ” and “N3G classification” as these are obvious and recognizable. OICA agreed to look more closely into this option. EC stated that work is ongoing for future FUP requirements that will take the attack angle into account as well.

FIEC (construction industry federation) presented VRU-Proxi-16-02 and advocated for the continuous need for N3G (construction) vehicles for the building industry. These vehicles

drive mostly outside urban areas and may sometimes enter the cities (10-15% of the usage). The N3G vehicles are basically used on non-proper roads and need therefore high ground clearance and large attack angles, also to avoid damages. FIEC supports the ACEA-OICA proposal of taking the usage and relevant vehicle parameters into account when qualifying the N3G vehicles. The Chair thanked FIEC and stated that it is clear that a right balance between safety and usage must be found.

SE indicated to not yet make a decision on this and to consider everything from different views first as such vehicles are still needed on the road.

FR stated to have no official position at this moment and to think about a 2-step approach. Initially start with A and B and come later with a separate category for N3G as the need and usage for N3G vehicles shall be taken seriously.

8.2. Physical Method Testing

Loughborough Design School (LDS) explained shortly the status and results of the further analysis and testing of the physical method. There will be an update in the next meeting.

8.3. Limit Values for different groups of vehicles within the vehicle category M3/N3

Documents: VRU-Proxi-16-06 Rev1 (LDS)
VRU-Proxi-16-08 (ACEA-OICA)

ACEA-OICA presented in VRU-Proxi-16-08 the possible improvements and achievements for level A group of vehicles supposing the combined approach. Substantial improvement can be realized by removing highest specs, lower door window, CMS (no mirror housings) and extended front. Further improvement will disturb the balance between other legal requirements, CO2 reduction, customer values and economic consequences for some OEMs. Due to different impacts for each individual OEM and compliance / confidentiality reasons the results can only be presented in an abstract way.

LDS stated that the Industry seems not to look for re-designing the cabs. ACEA mentioned that this differs between manufacturers, the Excel sheets show that also with the ACEA proposal vehicles will be eliminated and other vehicles need to be improved to the greatest possible extend.

LDS presented in VRU-Proxi-16-06 Rev1 an analysis of the effect of direct vision improvements on existing vehicle models by adding a front extension, a lower door window, lowering the front/side windows and removing the mirrors. The proposed modifications would lead to a vehicle passing the criteria. This specific effect was different for each separate vehicle model. **Whilst this demonstrates that it is possible for some long haul vehicles to pass the suggested LDS minimum (8m3) with a combined approach by changing certain design variables, it is clear that there are other Long Haul vehicle specifications which would not pass this criteria due to having higher cabs for specific operational reasons. For example the Scania S, which was not included in the sample for analysis by the LDS team.**

OICA stated that this is a theoretical approach as e.g. the ~~Scania R cab is not the Scania cab with the highest cab floor and could hence not be used as the long haulage example Scania P cab is not suitable for long haulage purposes and cannot be positioned on a Scania R-chassis.~~ Also the proposed size of the lower door windows and the presumed front extensions to some models are practically not feasible and gives a too promising view on what is actually possible. ~~Furthermore, removing the rear view mirrors would implicate a need to mount monitors at or near the A-pillars, which would further reduce the visibility.~~

UK stated that the proposed changes seems technically possible and relatively unambitious looking to the given time frame towards 2029 on designs changes of the cabs.

T&E remarked that manufacturers were informed already some years ago about the upcoming direct vision legislation. Furthermore T&E stated that good visibility to the front is necessary and only a minority of manufacturers will be extremely challenged.

ACEA proposed to focus on blind spot reduction in particular for urban trucks as this is for urban more important than for long haulage. The Chair stated that for long haulage an ambitious level should be aimed for as well.

NL supports the UK position and expects maximum effort of the OEMs to improve direct vision. Arguments from the Industry were understood but EU member states acknowledged the reduction of the blind spots and the required design changes need to be investigated. Different limit values shall be applied for different vehicle groups and the compromise proposal could be agreed but must be more ambitious than the Industry's proposal.

J will discuss the compromise proposal and limit values for the different sides of the vehicle and will come back to this in the Taskforce Direct Vision meetings.

SE stated to have currently no agreement or position on anything, differentiation is needed but limit values have not been decided yet. High vehicles are needed in Scandinavia for some types of transport policies that will differ a lot from other countries like the UK. The hybrid proposal could be valuable, when available SE will bring a position to the Taskforce Direct Vision. As there are not many CPs involved in this IWG, SE pointed out to be aware that more positions and discussions of CPs can be expected in the GRSG session. The Chair agreed and stated that the objective is to present a proposal to GRSG which is ambitious enough.

FR stated to have no agreement now, more technical information needed to make a proper decision, mis-adjustment of front mirror is clear, improvement by camera monitor systems could be considered as well.

DK raised the concern that the level for urban vehicles as proposed by ACEA is not ambitious enough as it is below the TfL DVS level that will be introduced next year.

ACEA questioned towards the CPs to check the interpretation of blind spot as we are now focusing on the mirror field of view which is not a blind spot. The Chair did not agree to this and stated that a maximal VRU-distance at the front of 2.0 m for level B and 1.7 m for A would be a possible way of fulfilling the European Parliament's wish.

Apollo stated that depending on the height it will also be possible to see a big population at 2m or 2.5 m. That's why the volumetric approach is taken because of the visibility of larger people at the outer area or outside the mirror field of view is considered as well. The Chair stated that this discussion shall be continued in the Taskforce Direct Vision and asked the CPs to be involved in the Taskforce Direct Vision discussions.

The Chair indicated that the Industry seems to have concerns with long haulage vehicles and raised the question to the Industry about what models will be removed from the market even with foreseeable improvements. ACEA/OICA stated that the message is clear and the feasibility of direct vision improvements and thresholds for the separated and combined approach will be investigated. However, the issue was raised that the proposed thresholds did vary many times during the previous VRU-Proxi meetings (11.4, 11 or 10 m³). This needs to be clarified first. It was agreed that the VRU-distances and values for the volumes need to be checked and updated by LDS.

9. Direct Vision regulation for M2/N2

The IWG did not discuss the regulation for direct vision of the vehicle categories M2/N2. This subject will be discussed in the next meeting.

10. Next meeting

17th meeting: 9th – 11th of March 2021, location / web meeting [TBD]

18th meeting: [8th – 10th of June 2021, location / web meeting TBD]