

**Draft Report of the 14th Session
GRSG informal group on
awareness of Vulnerable Road Users proximity
in low speed manoeuvres (VRU-Proxi)**

Dates: 26th and 27th of May 2020 and follow-up meeting at the 24th of June 2020
Venue: Web meeting – Webex

Contact: Mr. Peter Broertjes (European Commission)
Tel: +32 229-94933
Email: peter.broertjes@ec.europa.eu

Chairs: Mr. Matsui (J) and Mr. Broertjes (EC)
Secretary: Mr. Broeders (OICA), email: johan.broeders@daftrucks.com

0. Welcome and Introduction

The Webex meetings were started with a nice welcome and introduction by the Chairs. The Chairs expressed their happiness for the members being safe and in good health as well as their appreciation for the flexibility of the members to adapt to the web meeting instead of the originally planned physical meeting at Scania in Södertälje (Sweden). The Chairs also thanked Mrs. Cecilia Fredriksson for the preparations made for the physical meeting and spread their hope to organize this meeting after all at a later stage when the COVID-19 situation it allows again.

1. Adoption of the agendas

Document: VRU-Proxi-14-01 (Chair)

The proposed agendas of both sessions were adopted by the group.

2. Adoption of the report of the 13th VRU-Proxi session (Osaka, Japan)

Document: VRU-Proxi-13-13 (Chair)

The Secretary informed the Chairs and the group that there were no comments to the report received prior to and during the meeting. The Chairs and Secretary thanked the group and the report of the 13th VRU-Proxi meeting was adopted.

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

The European Commission indicated that due to the effects of the COVID-19 situation there might be a delay regarding the introduction of the General Safety Regulation Phase 2.

However, currently there is no confirmation or any concrete indication on a postponement.

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

Documents: VRU-Proxi-14-02 (TRL)
VRU-Proxi-14-03 (OICA-CLEPA)
VRU-Proxi-14-04 (OICA-CLEPA)
VRU-Proxi-14-13 (OICA-CLEPA)
VRU-Proxi-14-19 (OICA-CLEPA)

26-27 May 2020:

Proposals for changes to the drafted MOIS regulation were discussed with the group. The conclusions given below are also incorporated in document VRU-Proxi-14-13.

- Exemptions due to installation height on high mounted cabs. The Chair made the comparison to the discussions about exemptions for regulations ECE R58, R73 and R93 (underrun protection devices) for the vehicle type approval. Exemptions shall be as less as possible and need to be discussed with Technical Service. CPs agreed and FR argued having the same as R58 and R73 (exemption when the system is incompatible with the on-road use of the vehicle).
- OICA-CLEPA proposed not to use the child dummy because the ISO standard of child dummies is not available. The Chair argued to use same approach as in BSIS (30% smaller than adult cyclist). The group agreed on the compromise in line with R151: child dummy to be defined in specification section (real world requirements) but not in test section. The Industry shall take child dummy into consideration at the MOIS developments. The strategy of the manufacturer to be demonstrated with documentation, simulation or tests.
- MOIS detection area:
 - Agreed nearside and offside separation planes: 0.5 m from vehicle outer side planes.
 - Agreed minimum forward separation plane distance: 0.8 m instead of 0.35 m due to sensor installation height issues. Accepted by CPs but some CPs expect from the Industry to find solutions to reduce the minimum forward separation plane as future improvements. OICA to show an image of an average cab and a pedestrian at 0.8 m to make the situation clear and to show that a pedestrian is in general not closer to the front of truck.
- Lighting conditions: CPs agreed on 15 lux with allowance of activated headlamps.
- The Chair questioned if obligation of manually deactivation is needed and proposed to not insist on a switch but keep it as an option. The group agreed on this proposal.
- Definition of target point was not fully clear as it can be most nearest collision point or centre point of dummy. TRL will check how to clarify this and how this works out with the new agreement on the 0.8 m distance.
- Definition of the driver eye point: it was proposed to use R46 eye point definition as this applies to all categories of vehicles.

24 June 2020:

- OICA reminded the group that:
 - this will be a regulation for a system / sensor set-up that does not yet exist;
 - due to COVID-19 the Industry faced a delay in development of these new

- systems;
 - the regulation will need fast updates and adoptions as the regulation is not mature (as probably not totally in line with what is feasible).
- OICA asked the Chairs to explain these statements when presenting the document in the 118th session of GRSG.
- OICA argued that a collision warning would not provide any benefits and may annoy drivers as explained by CLEPA in the 12th VRU-Proxi meeting in Brussels. OICA proposed to specify the warning as an option. CPs (with the exception of F) did not accept this proposal.
- OICA explained that the regulation is radar sensor oriented and is not considering the capability of ultra-sonic sensors. EC explained that the limitations of ultra-sonic sensors were understood, therefore the strategy and system performance must be explained by the manufacturer.
- TRL will process the latest agreed adaptations to the draft regulation and it was concluded that this regulation proposal will be submitted to the 118th GRSG session as an informal document and replacement of working document ECE/TRANS/WP.29/GRSG/2020/5.

5. Reversing motion

Documents: VRU-Proxi-14-10 (Japan)
VRU-Proxi-14-12 (OICA)
VRU-Proxi-14-18 (OICA-CLEPA)

26-27 May 2020:

J and OICA presented proposed changes to the Reversing Motion draft regulation:

- Wording for the conditions for the backing event changed (using characters) in paragraph 15.1.1.
- Paragraphs 15.2.1.5 and 17.2.1.1 were rephrased during the meeting.
- It was agreed to harmonize the de-activation and activation requirements for RVCS and detection system by adapting paragraphs 16.1.1.3 (RVCS de-activation) and 17.1 (RVCS system activation) as proposed by OICA.
- Changes to paragraph 1.2 of Annex 9: “rear bumper” replaced by “rearmost surface of the vehicle”. After some discussion on excluding trailer hitch it was agreed to include the following: “Mechanical coupling devices and luggage racks located on the rear of the vehicle shall be disregarded”.

24 June 2020:

J presented additional proposals from OICA-CLEPA for modifications to the current draft regulation:

- The OICA-CLEPA proposal to add a clarification in the introduction section about system performance limitations which result in not covering all traffic and infrastructure conditions was accepted by EC and F. UK expressed a concern as this might give a blank endorsement for the Industry and would be subjective as there are no criteria defined. As this was similarly stated in the regulations for AEB and (draft) MOIS the addition of this clarification was accepted by the group.
- At paragraph 16.1.1.3 (Deactivation of the rear-view image) the Industry proposed to add a maximum reversing speed above which the rear-view image may be switched off to

avoid annoyance for the driver. The EC asked for more time to analyze this proposal and suggested OICA-CLEPA to propose a supplement to the regulation with well-founded justifications for consideration in the next VRU-Proxi and a later GRSG session (e.g. October 2020).

- J will update and clean the document and it will be submitted as informal document to the 118th of GRSG session as replacement of ECE-TRANS-WP.29-GRSG-2020-04.

6. Forward motion Vehicle turning - Blind Spot Information System

Document: VRU-Proxi-14-05 (EC-OICA)
VRU-Proxi-14-17 (EC-OICA)

EC and OICA prepared a document with a proposal for changes to Supplement 2 to UN Regulation No. 151 (ECE/TRANS/WP.29/GRSG/2020/7) with inclusion of the scope of M2 and N2 < 8t. One minor textual correction was made to VRU-Proxi-14-05. The group agreed on the document and submission as informal document to 118th GRSG session.

7. Direct Vision

Documents: VRU-Proxi-14-06 (OICA-ACEA)
VRU-Proxi-14-07 (OICA-ACEA)
VRU-Proxi-14-08 (LDS)
VRU-Proxi-14-09 (Apollo)
VRU-Proxi-14-11 (T&E)
VRU-Proxi-14-16 (OICA-ACEA)
VRU-Proxi-14-20 (Apollo)

26-27 May 2020:

- Due to the COVID-19 situation the Loughborough Design School (LDS) was not able to perform a physical test at the proving ground of Millbrook. It is expected that this exercise can be done by the mid of June 2020. The Chair asked LDS to provide more info on the real world test in the follow-up meeting (if available).
- The separated approach as discussed in VRU-Proxi 13 has been analysed by LDS. With this approach the volumes that would be required to be visible at each side (driver's side, front and passenger side) were determined by using the visibility of the VRU head. Two approaches were considered:
 - Using the equation of the trend line based on VRUs standing at the outer positions (4.5 m at passenger's side, 2.0 m to front and 1.0 m at driver's side)
 - Using an existing vehicle which has an average VRU distance just below the point using the equation as above.

Based on the trend line approach the total visible volume would be less than the TfL 1 star boundary and the EMSR boundary. LDS stated that the separated approach should be based on using limits that are closer to the vehicle for determining the minimum volumetric score. LDS was asked to supply the spreadsheets and graphs for the combined approach and separated approach.

- OICA-ACEA explained that direct vision is not the best solution and argued that active safety systems shall be taken into account as an alternative. Because of the different

purposes, different visibility needs for long haulage and city trucks, technical constraints (also for future drivelines) and CO₂ emissions OICA-ACEA advocated for differentiated requirements including active safety for the different truck applications.

- OICA-ACEA presented a proposal for differentiation between urban and rural vehicles based on the VECTO segmentation approach and evidence was given by means of “heat maps”. The Chair welcomed the proposal as a good initial basis for the discussion on differentiation.
- Apollo presented a similar differentiation approach as presented by ACEA-OICA with some areas of potential debate.
- The Chair asked CPs to have a close look to the proposals from OICA-ACEA and Apollo and to provide positions and feedback in the VRU-Proxi 14 follow-up meeting.
- T&E presented a proposal for definition of different direct vision levels in the regulation and publication of the rating for each truck. The Chairs see basically no need for these levels and recommended to use neutral wordings or different paragraphs for different requirement levels.
- The Chair asked to think about different options for thresholds (limit values) for direct vision that are based on an analysis. LDS recommended that the minimum requirement must be based on the EMRS value with head only. OICA stated that first an agreed definition of the groups is needed before defining thresholds.

24 June 2020:

- OICA-ACEA presented the answers and feedback on the following questions that were raised in the VRU-Proxi 14 meeting in May 2020:
 - Is a division needed for tractors, between Urban and Rural groups (5-RD/LH, 10-RD/LH and 12-RD/LH) or can all tractors belong to Rural as proposed?
 - Is a power threshold at 265 kW for 6x2 rigids (9-LH) in Rural group needed, to sort the low-power vehicles to the Urban group instead of the Rural as proposed?
 - Is the EMS power threshold at 370 kW needed to sort heavier rigids (11-EMS, 15-EMS, 16-EMS) to the Rural group?
- OICA has investigated those three areas further, using data from connected vehicles in an extended number of countries and concluded that the proposal as presented to the group in the first meeting of VRU-Proxi 14 was a good representation of reality and can be kept as proposed.
- The proposal from OICA-ACEA to place N3G vehicles in the rural category was brought up for discussion by some members of the group. It was questioned if a split-up e.g. based on engine power could be made for N3G vehicles as it was done for other configurations. Reasoning was that construction vehicles may enter the construction areas inside city centres. OICA explained that not all construction vehicles that enters the cities are off-road vehicles according to the definition of the vehicle category N3G.
- The Chairs proposed to install a taskforce to discuss and prepare proposals for the direct vision regulation with differentiation into vehicle groups based on applications and driving areas (N3G included) as primary topic. Furthermore the direct vision assessment approach (combined / separated volumes) and limit values could be subject of discussion in the Taskforce but as secondary topics. The Taskforce shall not take decisions but shall prepare proposals that will be reported to the IWG VRU-Proxi.
- The Chairs requested in particular T&E/Apollo and ACEA/OICA to contribute to this taskforce but other stakeholders were also invited to participate. It has been agreed that the organization of the taskforce meetings will be done by ACEA.
- LDS informed the group that they are targeting to perform the physical test at Millbrook

before the summer holidays. An update can probably be given in the next VRU-Proxi meeting (9-10 September 2020).

8. Terms of Reference

Document: VRU-Proxi-14-14 (J)
VRU-Proxi-13-09 (Japan)

26-27 May 2020:

J proposed to change the TOR by adding a new topic for forward motion: awareness of VRU when the M1, N1 is taking off from standstill. The intention was explained in VRU-PROXI-13-09.

DE expressed that this discussion may belong to the AEB Working Group. EC suggested to first discuss about this topic in this VRU-Proxi WG and then to decide if the topic should be part of AEB WG.

CPs and other stakeholders to evaluate the proposal before the follow-up meeting at the 24th of June 2020.

24 June 2020:

The group agreed on the extension of the scope of forward motion as proposed by J:

- Vehicle taking off from standstill (M1, N1): Completion of the proposal by Japan on new provisions for awareness of VRU: 122th session of GRSG (April 2022)

Also the target date for direct vision was brought up for discussion as this work was delayed due to the COVID-19 situation. The group agreed to move the target date for direct vision with a half year from 120th GRSG (April 2021) to 121st GRSG (October 2021).

The proposed changes to the TOR will be submitted to 118th GRSG.

9. Next meeting

15th meeting: 9-10 September 2020 (Online Web Meeting)

16th meeting: [17-19 November 2020, location Brussels Belgium (European Commission)]

10. Any Other Item

No other items were discussed.