

**Draft report of the 2<sup>nd</sup> Session  
GRSG informal group on  
awareness of Vulnerable Road Users proximity  
in low speed manoeuvres (VRU-Proxi)**

- Dates: 4-5 July 2017
- Venue: Transport for London, 14 Pier Walk, North Greenwich, LONDON, SE10 0ES  
Room 02 BRM 1 + 2 + 3

Welcome by Mr. Ben Plowden, Director of Strategy and Planning (Surface transport) – Transport for London

## 1. Adoption of the agenda

Document: VRU-Proxi-02-01-Rev.1 (J-European Commission)  
The agenda was adopted

## 2. Outcomes of the last sessions

- a. Outcomes of the last session of GRSG (112<sup>th</sup> session, April 2017)

Document: ECE/TRANS/WP.29/GRSG/91

The chair questioned the background of changes made by GRSG to the terms of reference, for the wording as well as for the proposed date for the completion of the D proposal. He suggested that the terms of reference are corrected back to their original wording since their text was adopted with consensus within the informal group.

It was however explained that the informal group must report back to GRSG and GRSG to WP29. It was clarified that D repeatedly insisted at GRSG-112 to adopt their proposal as soon as possible. F and OICA recalled that there was a vast majority at GRSG for including the D proposal into the scope of the informal group, and that this is even the reason why the additional July meeting was decided. OICA proposed to combine the D proposal with the other items.

The chair proposed to keep 3 main steps in the terms of reference, and that the D proposal be included into the second one (forward motion).

OICA clarified that the D proposal solves a part of the visibility problem, yet was keen that a holistic approach be undertaken by the group.

The chair then proposed to defer the discussion to the next meeting in Germany (VRU-Proxi-03).

The UK was convinced that the D proposal would permit detecting bicycles, yet not convinced it will improve the level of safety in city driving, and pointed out that GRSG decided to rely on the expertise of the VRU-Proxi informal group. The UK expert wondered whether the D proposal GRSG/2017/02 could be adopted already at GRSG-113 in October 2017, and committed to attend the GRSG-113 meeting, yet cannot attend the BAST meeting (VRU-Proxi-03).

### Conclusion:

- Item to be re-discussed at the BAST meeting
- Chairs to try to combine the items in 3 items.
- Timing and content of the D proposal to be decided at the GRSG-VRU-Proxi-03.

b. State of play of the revision of the EU GSR

Document: VRU-Proxi-02-07 (OICA)

The chair presented the state of play of the revision of the GSR at EU level, in particular the EP report.

The Secretary urged the group to take into account the experience gained by the GRRF-ACSF informal group with regard to HMI. The group acknowledged the need to consult GRRF and GRSP. The European Commission repeated that the dates given in document VRU-Proxi-01-05 are indicative.

**Conclusion:**

- European Parliament report to be posted on the informal group webpage (VRU-Proxi-02-07)
- VRU-Proxi to regularly consult GRRF and GRSP

**3. Clustered Safety Measures**

Document: VRU-Proxi-02-02 - TRL presentation on the cost-effectiveness of clustered safety measures on HGVs with extended cab lengths (Study on Enhanced Truck Front End Designs (TFEDs): Safety Benefits for Vulnerable Road Users)

TRL presented the document VRU-Proxi-02-02 on behalf of DG-Grow.

The group acknowledged the outcomes of the TRL study and embedded them as key elements for the next steps of the informal group work.

**Conclusion:**

- OICA committed to provide figures of the technologies costs for VRU-Proxi-04 (November 2017)

**4. Direct vision**

a. TfL presentation on their experience with direct vision

Document: VRU-Proxi-08 (Transport for London)

TfL presented the document VRU-Proxi-08 as the result of a long term program on improvement of transport in London, addressing the infrastructure, the drivers and the vehicles themselves. Direct view of close-proximity field of vision of vehicles not primarily designed to drive in cities. One of the key elements is the blind spot in the driver's field of vision. The research also observed that the conventional rear view mirrors reach their limit.

The drivers and the VRUs commonly supported that the eye contact between the two is an important aspect of the solution toward safety improvement.

TfL stated having not been challenged of making some types of vehicles mandatory. The expert explained the balance between the fact that the manufacturers support construction rules common to the different countries, and the wish of the Authorities to make things change as quickly as possible.

**Conclusion:**

- VRU-Proxi requested TfL to support the work of the informal group.
- VRU-Proxi to take full account of the conclusions of the TfL study

b. D standard on direct vision

Document: VRU-Proxi-02-05 (OICA)  
VRU-Proxi-02-06-Rev.1 (OICA)

OICA presented the document VRU-Proxi-02-06-Rev.1. The experts acknowledged that the approach of this national rule is compatible with that of TfL, keeping in mind the level of technology available in the early 60's.

## 5. Justifications for rulemaking on reversing motion

a. Accident data

Document: GRSG-110-10 (J)

J presented document GRSG-110-10.

The rate of fatal pedestrians impact by low speed ( $\leq 10$  km/h) out of fatal pedestrians by all speed ranges is respectively 32% ( $N \geq 7.5t$ ), 29% (bus), 24% (SUV), 20% (box van and mini-van), and 13% (sedan).

Taking the vehicle area as a criterion in collisions involving pedestrian fatality, the rate of rearward collision at low speed impact accidents is higher than the average, except  $N \geq 7.5t$  and bus.

Similarity, taking the type of manoeuvre involving pedestrian fatality as a criterion, the rate of backing manoeuvres at low speed impact accidents is higher than the average, except  $N \geq 7.5t$  and bus.

CLEPA (Brigade) explained the low value of fatalities for busses in back manoeuvres, by the particular bus traffic infrastructure and the nature of the busses, e.g., small opportunities having backing manoeuvre.

About warning sounds, Japan informed that there is currently no mandatory rules in Japan. The European Commission informed that they have a mandatory regulation for Acoustic Vehicle Alerting System (AVAS), based on UN R138 (QRTV – Quiet Road Transport Vehicles).

OICA presented document VRU-Proxi-02-09.

75% of the pedestrians are hit by PC-LCV, while pedestrians hit by HGV are less than 2%

9% of the pedestrians that are hit by a PC-LCV are hit in a rearward motion,

17% of the pedestrians that are hit by a PC-LCV in a rearward motion are between 0 & 12,

In total 1,2% of the pedestrians involved in an accident with a PC-LCV in a rearward motion and are between 0 & 12.

This presentation questioned the conclusions of the J reasoning in GRSG-110-10, and requested some clarifications. According to the D and F data, forward motion accidents are predominant vs. the rearward motion ones. OICA furthermore presented VRU-Proxi-12

There was a debate on the nature and the credibility of the data tabled to the group.

J pointed out that the main reason of the difference of the travel velocities between D/F data and J data is the different types of the accident data source, i.e. micro data (i.e., GIDAS) vs. macro data (ITARDA macro database).

J explained that the age distributions of pedestrian fatalities are similar between D/F and J, i.e., about 80% of pedestrian fatalities are elderly in Japan. Generally, the stature of elderly is getting lower, but still always higher than that of a child. However, J is of the opinion that, when making a safety regulation on rear-visibility, the group should determine the height of the poll dummy taking into account the worst case (a child is most vulnerable in such dangerous situation) such as a stature of children.

CLEPA (Brigade) presented data based on figures from the UK Police in 2008 (VRU-Proxi-02-10). 90% of the reversing accidents occur in private premises, i.e. are not reported in police reports, and hence cannot be part of the statistics. Good vehicles vs. VRUs. The figures shown make the reversing accidents well under represented. The data do not take into account the last amendments of UN R46.

The chair was keen that the US figures be taken into account as well. The group acknowledged that the US market is different to those of the EU and J, such that the data should be carefully worked out.

CDN informed that they apply CMVSS-111, yet alternative equivalents are accepted.

**Conclusion:**

- Establishment of a task-force for treating the data. OICA as pilot
- Task-force to report back to the Yokohama meeting (VRU-Proxi-04).
- CDN committed to collaborate. All parties are invited to take part to the task-force.

- b. Existing technical provisions  
i. FMVSS 111

CLEPA presented VRU-Proxi-02-11.

- ii. Japanese rear-view requirements

Document: VRU-Proxi-02-03 (J)

J presented their document proposing a new Type VIII FOV, VRU-Proxi-02-03 GRSG-111-23 as amended.

J committed to provide additional information with regard to the benefits of the existing mirrors in Japan, and to organize a demonstration of existing vehicles.

OICA requested some work on the test procedure, the field of detection, the wording of the proposal. OICA would anticipate a moving target since the real life obstacle will anyway move relative to the vehicle.

**Conclusion:**

- J to provide further info at VRU-Proxi-04 (Yokohama), according to the comments received so far.
- J to wait the conclusions of the VRU-Proxi informal group before tabling any such document to GRSG

- c. AUS/NZ effectiveness study

Document: VRU-Proxi-01-07-Rev.1 (OICA)

OICA presented the data from AUS/NZ. The study seems to indicate that CMS + sensors is not much more efficient from CMS only. This conclusion should be further investigated. A debate took place on the HMI vs. the driver's behaviour. Why would a driver ignore the warning signal rather than taking into account both the image and the warning? The experts acknowledged that CMS and sensors are primarily designed for assisting the parking manoeuvre, and have as a side effect the increase of safety and the VRU protection. The chair was keen that the final solution is technology neutral. OICA pointed out that the best way to reach this objective is usually to well identify the scenario into a proper test method.

The European Commission committed to contact the Australian representative to GRSG, in order to get confirmation of the AUS/NZ data.

**Conclusion:**

- The European Commission committed to contact the Australian representative to GRSG
- OICA/CLEPA to collaborate for drafting a relevant testing protocol. On the basis of a technology neutral solution.

## 6. Detection technologies

Document: VRU-Proxi-02-04

CLEPA presented the document VRU-Proxi-02-04.

The group requested CLEPA to provide information on the minimum range of the sensors. The group was also informed that the characteristics of the sensors can be adapted according to their final application, e.g. a radar can have a wide detection angle with a relatively small detection range, or vice-versa.

## 7. Next meetings:

### a. 3<sup>rd</sup> meeting:

- i. Dates: 18-19 July 2017
- ii. Time (tbc): Starting at 11:00 am the 1<sup>st</sup> day, and finishing at 4:00 pm the last day
- iii. Venue: Federal Highway Research Institute  
(Bundesanstalt für Straßenwesen)  
Brüderstraße 53  
51427 Bergisch Gladbach
- iv. Tel: +49 2204 43-0
- v. Contact: Dr.-Ing. Patrick Seiniger
- vi. Email: [Seiniger@bast.de](mailto:Seiniger@bast.de)

- b. 4<sup>th</sup> meeting: 8-9 November 2017 in Yokohama  
NISSANGlobal Head Quarters

## 8. Any Other Item

None