

## **OICA comments to document TRANS/WP.29/GRRF/2013/25: (Proposal for amendments to Regulations No. 79 - Steering equipment)**

### **I. General comments**

1. Removing design restrictions from R79 to enable vehicle manufacturers to develop new systems is good in principle. However, the current proposal introduces some design restrictions which could be avoided.
2. For example, GRRF/2013/25 requires the truck to provide a minimum current of [50A] and a nominal/minimum voltage of 24V/[19.2V] to be able to “tow a trailer with a steering control system utilising electrical energy from the towing vehicle”.

Is there a need to be design restrictive on the current and voltage available at the connector interface, since no industry standard exists today, and there may be systems requiring less peak / continuous current, with different voltages?

Another solution could be to specify in the type approval information the maximum current the truck is able to supply and the minimum current the trailer steering system requires. Provided the driver would get this information (e.g. with a marking as proposed in Annex 7 paragraph 2.5.1 on both truck and trailer), he would be able to assess whether both systems are compatible or not. The same logic could be applied to nominal and minimum voltages, unless 24V is “cast in stone”.

3. The proposal looks to be prohibiting a truck without electrical supply according to Annex 7 from towing a trailer equipped with a steering system. Such a limitation looks unnecessary if the trailer has the ability to be safely towed without the steering system being electrically powered (e.g. if the trailer axles remain straight and fix when not powered).
4. The proposed failure warning provisions are providing a means to warn the driver without putting as a pre-requisite the definition of uniform provisions to enable communication between trailer steering system and towing vehicle. This is a pragmatic approach which could possibly be a way to open up UN R79 to development of trailer steering systems, until sufficient experience is gained to be able to define uniform technical provisions.
5. It could be of interest for the towing vehicle to get, from the trailer, data about the articulation and/or steering angles, through the ISO 11992 bus.
6. Annex 7 is not referenced in the main text of regulation 79, thus never called.
7. Other comments and proposals to be found below, under item II (particular comments).

### **II. Particular comments**

#### Paragraph 2.5.2.2.

OICA questions the meaning of the word “firmly”.

#### Paragraph 5.4.3.1.(a)

OICA understands the proposal as a temporary solution but questions the proposed HMI:

- See general comment No 4 above
- Consistency with warning signals general provisions of paragraph 5.4.1.1 to be clarified
- Is “green” appropriate for a warning signal?
- Is a warning necessary to indicate that the system is OK?
- An optical signal looks relevant in this context, but do we need to be restrictive on that?

Paragraph 5.4.3.1.(b)

Why should the warning be limited to signalling electric faults? In the case where other type of faults might be detected, the warning should illuminate.

**Annex 1**

Paragraph 7.1.

See general comment No 3 above.

Alternative proposal:

- 7.1. The towing vehicle is/is not<sup>2</sup> authorised to tow **equipped with an electric connector able to supply energy to** a trailer with a steering control system utilising electrical energy from the towing vehicle, by fulfilling the relevant requirements of Annex 7.

**Annex 7**

Paragraph 1.

To “facilitate operation” should be clarified. These words sound like the electrical energy is only providing an “optional” assistance to the trailer steering system (which may then have its own source and/or storage of energy?). A question behind is: does the trailer have the ability to be safely towed without the steering system being electrically powered? (See general comment No 3 above).

Paragraph 2.1.

The towing vehicle is able to provide and specify a maximum current. Whether this current is enough for the steering system of the trailer depends on the trailer behind. Thus, this requirement is not applicable for the type approval of the towing vehicle.

The trailer should not be connected to a towing vehicle that is not able to provide sufficient current; this is an in-use requirement (compatibility check of trailer steering system with available power supply from towing vehicle by the driver).

Paragraph 2.1.1.

Is there a need to be design restrictive on the current and voltage available at the connector interface, since no industry standard exists today? (see general comments No 2)

Paragraph 2.2.

Same comment as for Annex 7, paragraph 2.1.1.

Paragraphs 2.4.1. and 2.4.2.(a)

Alternative in the case where the max current is not defined in the regulation (Annex 7 paragraph 2.1.1 for towing vehicle and 3.1 for trailers), but declared by the manufacturer:

“...compatible with the continuous current defined in Annex 1 paragraph xx”. This approach would of course require more amendments to this proposal.

Paragraph 2.4.2.(b)

Is the “environmental protection at a minimum of IP 54” needed? OICA finds this design restrictive and wonders whether this is safety or reliability/durability related?

Paragraph 2.5.1

The need for such a marking depends on the approach chosen regarding the current available at the connector interface (see general comment No 2). With the existing proposal, that defines both minimum current from the towing vehicle (Annex 7 paragraph 2.1.1) and maximum current consumption of the trailer (Annex 7 paragraph 3.1), a marking should not be strictly necessary. In the case where the current is specified in the type approval information of the towing vehicle and trailer, this marking may be of interest to inform the driver.

Paragraph 3.1.

Same comment as for Annex 7, paragraph 2.1.1.

Paragraph 3.2.

A requirement could be added here on trailer failure mode in the case of insufficient electric supply from towing vehicle (e.g. description and test of failure mode)

Paragraph 3.3.

Same comment as for Annex 7, paragraph 2.1.1.

Paragraph 3.4.2.

Same comment as for paragraph 2.4.2.

Insert a new paragraph 3.6.

“3.6 Marking

Maximum current consumption of the trailer steering system shall be marked and be indelible and visible to the driver when standing on the ground adjacent to the vehicle.”

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