

Report of the GRRF informal group on Automated Connections between Vehicles (ACV)

The meetings

Since the 69th Session of GRRF a total of nine meetings of the ACV Informal Working Group have been held, of which the last four have been two day meetings.

Participating members of the group have been consistent, about 10 members each meeting. Industry has been represented by OICA, Wabco, Knorr-Bremse, BPW, Jost and VBG. The role of secretary was offered by CLCCR. Authorities were represented by Netherlands, Finland and Sweden. Sweden holds the chairmanship.

Timetable

According to the Terms Of Reference the group is to deliver, in the first step, proposals for amendment of R13 and R55 in order to facilitate type approval of existing and newly developed automated coupling systems.

Regarding R13 the work is, so far, in line with the time plan in the TOR working document

ECE/TRANS/WP.29/GRRF/2012/08 and an informal document with proposal of amendment to R13 will be presented at GRRF 73.

Regarding R55 the group has made considerations on what they believe is necessary to change in the regulation and an informal document will be submitted to the informal group on R55 which is planned to work on this subject.

Roadtrains

In the second step, the group is assigned to consider vehicle combinations and “road trains”.

The group will in particular consider items related to braking, steering, couplings, and vehicle stability. Work done earlier for example CLEPA informal document GRRF/66/08 will also be considered.

Longer and/or heavier vehicles are already reality in some countries and are on trials in some. The group believes R13 needs to be amended to allow towed vehicles to tow other vehicles

There is support for the continuation of this work within the group but the group thinks is necessary to discuss the item further in GRRF in order to allow other organisations or authorities to give their ideas on the subject before proceeding and a new Terms of Reference must be made.

Short remainder of history

Automated drawbar couplings were already on the market but approvals were based on national exemptions in several countries. Automated fifth wheel coupling were still in development but soon to be on the market. At meeting GRRF 67 Sweden asked for guidance on how to proceed with the matter with an idea that it would be favourable to have harmonised regulations instead of exemptions. The Chairman at that time summarised the discussion by suggesting Sweden to consider working in a working group. Sweden was also advised to extract the applicable requirements from ISO7638 and not to wait for a new standard that was under development in ISO in order to not become design restrictive. The Terms Of Reference found in working document 2012/8 were established based on that idea. The work has since then been based on these ideas.

Explanation for chosen path with no reference to a standard

The situation differs a little between drawbar couplings and fifth-wheel couplings. For Drawbar coupling existing today the “male” and the “female” part of the coupling are made by the same manufacturer and the supposed use is to connect and disconnect the same trailer several times during the day. For this application there is no need for a standardised interface for compatibility.

For the fifth-wheel the situation is different and the group is aware of the benefits of a standardised interface.

At the moment no reference to standards has been done and these are the major reasons for that:

- There exists only a draft standard for tractors and semi-trailers
- There is nothing for trucks and full trailers or for single axle trailers (drawbar couplings)
- Now the draft Standard is a DIS after that it becomes an F-DIS so it may be published in early 2014 providing everything is positive
- There is no confidence as to whether this standard can be mandated as there have been no field trials. So it is wise to wait until the first ISO review in 2019/2020.
- The ideal solution can therefore be many years in the future
- The pro's of an ISO standard: interoperability
- The con's of an ISO standard: it is design restrictive.

Major issues

From the beginning the plan was to replace the reference to ISO 7638 with a wording “electric/electronic interface” in the entire R13. A different path was chosen when braking industry joined the group. The reason for that was to keep as much of the regulation as it is for the usual couplings so that the habituated reader does not get confused during type approval processes of ordinary couplings. The group has also considered and made some changes during the work after receiving comments from Mr Winfried Gaupp and Dr. Colin Ross in previous GRRF meetings

The idea is to treat ordinary couplings as today and when it comes to an automated coupling they will be required to fulfill the requirements of a new annex. The proposed annex contains a reference to ISO 7638 for applicable requirement related to e.g. cables, connectors, current capability and electrical functions.

The annex also contains requirements regarding brake data communication, cable and hose length, warnings and some drawings with examples on how to fulfill requirements for a point to point communication.
