

GRE Taskforce on Autonomous Vehicle Signalling Requirements (AVSR) Status Report

In the status report to GRE 84 the Chair of the GRE TF “Autonomous Vehicle Signalling Requirements” (AVSR) has reported about the status on the progress of this task force as presented in document GRE-84-19.

The main focus in this report referenced to the Final Report of the Study on the effects of automation on road user behaviour and performance of the European Commission.

With the conclusion under item **7.2. External HMI** (on page 82)

“The following issues concerning the interaction of the vehicle within its context of operation for e-HMI were identified: to make clear that no additional e-HMI for interaction with the environment is needed (thus, no new standards are required); the need to have a signal that the vehicle is under ADS control; and rural platooning for safe overtaking. The key stakeholders to lead the necessary actions outlined in Table 11 (further below) are the European Commission (DG Grow and DG R&I), OEMs, logistic companies and UNECE WP.29 Similar to external HMI, the actions required and outlined in the table can be completed within one to three years for Level 3 automation.”

In the Table 11 mentioned above will be pointed out:

- No Additional e-HMI for interaction because existing e-HMI is adequate and no major additional e-HMI for interaction with other road users, including VRUs. Thus no action is needed, with the exceptions below. No new standards are required.

But with the following two exceptions:

- (1) Active ADS signal for road users with exterior light indication that vehicle is under the control of ADS. Could explain behaviour to VRUs and useful for enforcement.

Active ADS signal with exterior signal to assist in stand-off situation with VRUs”.

DG Grow, of the European Commission, decide and recommend, under Roles and Responsibilities, to UNECE WP.29 to agree on standard signal and, if necessary, to amend vehicle lighting regulations.

Regarding this outcome of the Study the Chair of the GRE TF “Autonomous Vehicle Signalling Requirements” (AVSR) has asked GRE and the FRAV informal Working Group for further guidance and whether GRE and FRAV share the view of the Chair of the GRE TF AVSR of the necessity to amend the relevant vehicle lighting regulations as pointed out in Table 11 of the Final Report.

See also under item 39 in the Report of GRE (ECE/TRANS/WP.29/GRE84).

In the meantime, in the 83rd session of WP.1 Germany presented a position statement with Informal document No. 2:

“- An optical signal to indicate that a vehicle is being driven by an automated driving system can be useful as a temporary solution to address specific needs in specific situations, e.g. autonomous parking of the vehicle.”

In a further Informal document, the Chair of WP.1 presented the Informal document No. 3 of the 82nd session of WP.1, which are the results of a request by WP.1 to professor B. Mehler of MIT to offer first insights, to questions on communications of Automated Vehicles, in the 83rd session.

Professor Mehler underlined in his presentation the position of Germany.

Among others he also pointed out under item 8 in the Informal document No. 3 of the 82nd of WP.1:

“8. Again, this is, indeed, a complex topic as there may be good reasons for some knowability as to whether a vehicle is currently in automated or manual control. For example, this may be important when the police or other safety or management related officials need to understand the status of a vehicle. However, as outlined above, there can be unintended consequences and overall safety may be better served by proceeding very cautiously before requiring overt distinction between automated and manually driven vehicles. In particular, it will be important to carefully test specific signaling methods to ensure they do not increase confusion or have unacceptable levels of misinterpretation. Simply specifying that a visual and/or auditory method of signaling status be employed runs the risk of unintended, negative consequences.”

The Chair of the GRE TF AVSR participated in the 20th meeting of FRAV based on a decision between the Chairs of GRE and GRVA. where this item was considered.

The Delegate from China presented the position of China with document FRAV-20-06 as a Report of “Other Road Users” Workstream.

In this presentation China also make reference to the status report of AVSR in GRE 84 and the results of the European Commission and finalized under:

“External signaling of ADS operational status

- Use existing external signalization devices when realize interaction functions as needed.
- Optical/audible signals to inform operational status should be well defined to avoid confusion; “

In following discussion FRAV concluded, that FRAV has also not the mandate to decide about the question whether this optical signals to inform operational status of the automated vehicle necessary or not!

Therefore, FRAV recommended, that the Chair of GRVA and the Chair of GRE should meet at the next secession of WP.29 on the level of AC.2 to find a conclusion about this Question.

With this outcome the work of the Task Force AVSR is in my view definitely finalized.

If AC.2 will decide, that tis signal is necessary, a new Informal Working Group “AVSR” or the existing Informal Working Group SLR in GRE can prepare the necessary amendments to Regulation 148 and Regulation 48.