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World Forum for Harmonization of Vehicle Regulations**Working Party on Automated/Autonomous and Connected Vehicles*****Fifth session**

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Item 6 (a) of the provisional agenda

UN Regulations No. 79 (Steering equipment):**Automatically Commanded Steering Function****Proposal for Supplements to the 02 and 03 series of amendments to UN Regulation No. 79 (Steering equipment)****Submitted by the experts from the International Organization of Motor Vehicle Manufacturers and the European Association of Automotive Suppliers****

The text reproduced below was prepared by the experts from the International Organization of Motor Vehicle Manufacturers (OICA) and the European Association of Automotive Suppliers (CLEPA), proposing to amendments to the provisions on Automatically Commanded Steering Function (ACSF) of Category B in UN Regulation No. 79. It is based on GRVA-04-08. The modifications to the existing text of the Regulation are marked in bold for new, and strikethrough for deleted characters.

* Formerly: **Working Party on Brakes and Running Gear (GRRF)**.

** In accordance with the programme of work of the Inland Transport Committee for 2020 as outlined in proposed programme budget for 2020 (A/74/6 (part V sect. 20) para 20.37), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



I. Proposal

Paragraph 5.6.2.3., insert a new sub-paragraph 5.6.2.3.1.3., to read:

“5.6.2.3. System information data

5.6.2.3.1. Following data shall be provided together with the documentation package required in Annex 6 to this regulation to the Technical Service at the time of type approval;

...

5.6.2.3.1.3. Information about inputs other than lane markings (e.g. road boundaries, infrastructural separation, surrounding traffic, map data) that the system uses to reliably determine the course of the lane.”

Annex 8, paragraph 3.2.4.1. and 3.2.4.2., amend to read:

“3.2.4. Transition test; hands-on test

3.2.4.1. The vehicle shall be driven with activated ACSF with a vehicle test speed between $V_{smin} + 10$ km/h and $V_{smin} + 20$ km/h on a track with lane markings at each side of the lane.

The driver shall release the steering control and continue to drive until the ACSF is deactivated by the system. The track shall be selected such that it allows driving with activated ACSF for at least 65 s without any driver intervention.

The test shall be repeated with a vehicle test speed between $V_{smax} - 20$ km/h and $V_{smax} - 10$ km/h or 130 km/h whichever is lower **and may be stopped upon the start of the optical warning.**

Additionally, the vehicle manufacturer shall demonstrate to the satisfaction of the Technical Service that the requirements for the whole speed range are fulfilled. This may be achieved on the basis of appropriate documentation appended to the test report.

3.2.4.2. The test requirements are fulfilled if:

During both tests ~~t~~the optical warning signal was given at the latest 15 s after the steering control has been released and remains until ACSF is deactivated.

During the lower speed test ~~t~~the acoustic warning signal was given at the latest 30 s after the steering control has been released and remains until ACSF is deactivated.

During the lower speed test ~~t~~the ACSF is deactivated at the latest 30 s after the acoustic warning signal has started, with an acoustic emergency signal of at least 5 s, which is different from the previous acoustic warning signal.”

II. Justification

A. Annex 8, paragraph 3.2.4.1. and 3.2.4.2. “hands-on test”

1. The aim of performing the hands-on test at low and high speed is to confirm the robust hands-off detection across the entire speed range. The test at high speed of the subsequent warning cascade leading to deactivation of the system requires a track length of more than 2 km (60s of driving at 130 km/h after the release of the steering control). Since the system already required to demonstrate compliance with regard to the warning cascade when performing the test at low speed, it is proposed to stop the high-speed test after the system has given the optical warning, meaning it has correctly detected the hands to be off.

B. Paragraph 5.6.2.3.1.3.

2. Using other inputs than lane markings in situations where lane markings cannot be detected is not in contradiction with any requirements of this Regulation and is needed to provide the driver robust assistance in these often-occurring situations (see examples below).

The new paragraph is aimed at clarifying that the use of alternative inputs is allowed and providing a list of the inputs used with the system information data will make the design more transparent.

Figure 1
Illustrations

