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Working Party on Lighting and Light-Signalling (GRE)
(Forty-eighth session, 9-12 April 2002,
agenda item 2.2.)

PROPOSAL FOR DRAFT AMENDMENTS (SUPPLEMENT 2 TO THE 02 SERIES)
TO REGULATION No. 10

(Electromagnetic Compatibility)

Transmitted by the Expert from France

Note: The text reproduced below was prepared by the expert from France and distributed without a symbol (informal document No. 7, as corrected) during the forty-seventh session of GRE. It proposes to clarify the requirements for the tests of electromagnetic compatibility of long vehicles with regard to the test facility dimensions (TRANS/WP.29/GRE/47, paras. 71 and 72).

Note: This document is distributed to the Experts on Lighting and Light-Signalling only.

GE.02-20368

A. PROPOSAL

Insert new paragraph 2.13., to read:

"2.13. "Long vehicle" means vehicle of categories M, N, O having a length greater than [12 m]."

Paragraph 6.4.2.1., amend to read:

"..... over the whole 20 MHz to 1,000 MHz frequency band. If tests are made for a long vehicle using BCI method described in annex 9, the reference limit shall be 48 mA in 20 MHz to 1,000 MHz frequency band."

Paragraph 6.4.2.2., amend to read:

"..... and subjected to a field strength, (expressed in Volts/m, with the current expressed in mA), of 25 per cent above the reference level, no abnormal"

Annex 3A, Appendix,

Insert new item 7., to read:

"7. ESA tested for immunity on vehicles with bulk current injection (BCI) method: yes / no */*."

Paragraph 7 (former), renumber as paragraph 8.

Annex 6,

Paragraph 4.4., amend to read:

"..... away from the antenna. In the case of large vehicle dimensions, (i.e. excluding cars and light vans), which have electronic control"

Insert new paragraph 4.5., to read:

"4.5. In the case where the geometric dimensions of the chamber do not permit the tests as specified in this annex for long vehicles, with the total length greater than [12 m], tests could be performed directly on the vehicle itself, with the bulk current injection method (BCI) as described in annex 9, paragraph 10."

Annex 9, paragraph 10.3., amend to read:

"10.3. For an ESA mounted on a ground plane as specified in paragraph 8.2.1., all cables in the wiring harness should be terminated as realistically as possible, and preferably with real loads and actuators. For both vehicle-mounted and ground plane-mounted ASAs, the current injection probe shall be mounted around all the harness wires, on each connector, and 150 ± 10 mm, from each connector of the electronic control unit (ECU), instrument modules or active sensors, as illustrated in figure 1 of appendix 2, or a [150 +10/-100 mm] if the test is performed on the vehicle."

* * *

B. JUSTIFICATION

Vehicle immunity testing

For certain categories of long vehicles such as articulated buses, or long industrial trucks equipped with a trailer, tests described in annex 6 of Regulation No. 10, 02 series of amendments cannot be performed, in most of the existing electromagnetic compatibility facilities.

These facilities have mostly more than 12 m usable length. Taking into account the antenna's dimensions, prescriptions of Regulation No. 10, 02 series of amendments cannot be satisfied, regarding the distance, from these aeriels to the chamber walls, and the distance from the tip of these antennas to the reference point (paragraphs 5.3.1. and 5.2.2.2. of annex 6).

Annex 9, of Regulation No. 10, 02 series of amendments related to immunity for electronic electrical sub-assembly (ESA) prescription gives a possibility to perform the test with the bulk current injection method (BCI), directly on the ESA itself, installed on the vehicle, (end of paragraph 10.1., annex 9).

It is also specified in Regulation No. 10, 02 series of amendments (annex 6, paragraph 4.4., last sentence), that tests are only possible if geometrical dimensions of the test chamber are sufficiently large regarding the vehicle's dimensions.

The new definition of paragraph 2.13 "long vehicle" is needed to modify the text, in order to keep the prescription to test the vehicle at the rear or in the middle, depending on the position of the electronic equipment and the vehicle size.

The possibility exists to perform the tests outside, in an open area. However, production of high disturbance levels is not permitted with respect to the protection of the environment.

In order to facilitate the type approval procedure, this proposal makes it possible to approve the vehicle and deliver a communication certificate (annex 3A), from the test performed directly on the vehicle's different electronic sub-assemblies.
