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## Economic Commission for Europe

### Inland Transport Committee

### World Forum for Harmonization of Vehicle Regulations

### Working Party on Pollution and Energy

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Item 4(d) of the provisional agenda

**Heavy duty vehicles: GTR No. 4 (Worldwide**

**Harmonized Heavy-Duty Certification procedure)**

## **Proposal for Corrigendum 1 to Amendment 1 to Global Technical Regulation No. 4**

### **Submitted by the experts from the International Organization of Motor Vehicle Manufacturers\***

The text reproduced below was prepared by the experts from the International Organization of Motor Vehicle Manufacturers (OICA) to correct wrong references in the text of Amendment 1 to Global Technical Regulation (GTR) No. 4 (ECE/TRANS/180/Add.4/Amend.1). This document is based on Informal document GRPE-63-15 distributed at the sixty-third session of the Working Party on Pollution and Energy (GRPE) (ECE/TRANS/WP.29/GRPE/63, para. 39). The modifications to the original English text are marked using track changes. The same modifications in the French and Russian versions are marked in bold for new or strikethrough for deleted characters.

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\* In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106 and ECE/TRANS/2010/8, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

## I. Proposal

*Paragraph 9.3.2.7.*, correct to read:

"9.2.3.7. Air to fuel measurement

The air to fuel measurement equipment used to determine the exhaust gas flow as specified in paragraph 8.34.1.6. shall be a wide range air to fuel ratio sensor or lambda sensor of Zirconia type. The sensor shall be mounted directly on the exhaust pipe where the exhaust gas temperature is high enough to eliminate water condensation.

..."

*Paragraph 9.3.8.*, correct to read:

"9.3.8. Efficiency of the non-methane cutter (NMC)

The NMC is used for the removal of the non-methane hydrocarbons from the sample gas by oxidizing all hydrocarbons except methane. Ideally, the conversion for methane is 0 per cent, and for the other hydrocarbons represented by ethane is 100 per cent. For the accurate measurement of NMHC, the two efficiencies shall be determined and used for the calculation of the NMHC emission mass flow rate (see para. 8.56.2.)."

*Paragraph 9.4.6.1.*, correct to read:

"9.4.6.1. System response time

For the control of a partial flow dilution system, a fast system response is required. The transformation time for the system shall be determined by the procedure in paragraph 9.4.6.6. If the combined transformation time of the exhaust flow measurement (see para. 8.34.1.2.) and the partial flow system is  $\leq 0.3$  s, online control shall be used. If the transformation time exceeds 0.3 s, look ahead control based on a pre-recorded test run shall be used. In this case, the combined rise time shall be  $\leq 1$  s and the combined delay time  $\leq 10$  s.

..."

*Paragraph 9.5.5.*, correct to read:

"9.5.5. Total system verification

The total accuracy of the CVS sampling system and analytical system shall be determined by introducing a known mass of a pollutant gas into the system while it is being operated in the normal manner. The pollutant is analyzed, and the mass calculated according to paragraph 8.5.2.43. except in the case of propane where a u factor of 0.000472 is used in place of 0.000480 for HC. Either of the following two techniques shall be used."

*Annex 6, paragraph A.6.3.*, correct to read:

"A.6.3. Gaseous emissions (diesel fuel)

...

Step 3: Calculation of the instantaneous emission of each individual point of the cycle (paragraph 8.4.2.43.).

...

Step 4: Calculation of the mass emission over the cycle by integration of the instantaneous emission values and the u values from table 5 (para. 8.4.2.43.).

..."

## **II. Justification**

1. The original references are wrong. These errors were detected when transposing the GTR into the series 6 amendments of Regulation 49.
2. The references should be corrected in line with Regulation 49.

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