

## **Proposal for additional content in ECE/TRANS/WP.29/GRPE/2022/10**

This document proposes amendments to UN Regulation No. 83 concerning a correction of the recursive formula for verifying the conformity of production, an alignment of the approval certificate within UN Regulation No. 83 to recent changes of regulation UN Regulation No. 24 and changes to the OBD chapter in order to harmonize UN Regulation No. 83 to UN Regulation No. 154. The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

### **I. Introduction**

*In the 05, 06 and 07 series of amendments*

*Paragraph 6. of Appendix 2, amend to read:*

"6.           Remarks

The following recursive formulae are useful for computing successive values of the test statistic:

$$\begin{aligned} \bar{d}_n &= \left(1 - \frac{1}{n}\right) \bar{d}_{n-1} + \frac{1}{n} d_n \\ V_n^2 &= \left(1 - \frac{1}{n}\right) V_{n-1}^2 + \frac{\left[\bar{d}_n - d_n\right]^2}{n-1} \\ V_n^2 &= \left(1 - \frac{1}{n}\right) V_{n-1}^2 + \frac{(\bar{d}_n - d_n)^2}{n-1} \\ &(n = 2, 3, \dots; \bar{d}_1 = d_1; V_1 = 0) \end{aligned}$$

..."

*In the 07 series of amendments*

*Paragraph 2.4. of Annex 2, amend to read:*

- "2.4.           Smoke opacity test results<sup>1,6</sup>
- 2.4.1.           At steady speeds: See technical service test report number **(if any)**: .....
- 2.4.2.           Free acceleration tests
- 2.4.2.1.          Measured value of the absorption coefficient **(if any)**: ..... m<sup>-1</sup>
- 2.4.2.2.          Corrected value of the absorption coefficient: ..... m<sup>-1</sup>
- 2.4.2.3.          Location of the absorption coefficient symbol on the vehicle:.....

<sup>6</sup> Smoke opacity ~~values measurements to be carried out~~ according to provisions laid out in Regulation No. 24. "

*In the 06 series of amendments*

*Paragraph 2.4. of Annex 2, amend to read:*

- "2.4. Smoke opacity test results<sup>e,2</sup>
- 2.4.1. At steady speeds: See technical service test report number **(if any)**: .....
- 2.4.2. Free acceleration tests
- 2.4.2.1. Measured value of the absorption coefficient **(if any)**: ..... m<sup>-1</sup>
- 2.4.2.2. Corrected value of the absorption coefficient: ..... m<sup>-1</sup>
- 2.4.2.3. Location of the absorption coefficient symbol on the vehicle:.....

<sup>e</sup> Smoke opacity ~~values measurements to be carried out~~ according to provisions laid out in Regulation No. 24. "

*In the 05, 06 and 07 series of amendments*

*Paragraph 3.2.1.2. of Annex 11, amend to read:*

- "3.2.1.2. A manufacturer may disable ~~the OBD system at ambient engine starting temperatures~~ **any specific OBD monitor for a given driving cycle for ambient or engine temperatures** below 266 K (-7° C) or at elevations over 2,500 metres above sea level provided the manufacturer submits data and/or an engineering evaluation which adequately demonstrate that monitoring would be unreliable when such conditions exist. A manufacturer may also request disablement of ~~the OBD system at other ambient engine starting temperatures if he demonstrates~~ **any specific OBD monitor at other ambient temperatures or other elevations if they demonstrate** to the authority with data and/or an engineering evaluation that misdiagnosis would occur under such conditions. It is not necessary to illuminate the Malfunction Indicator (MI) if ~~the~~ OBD thresholds are exceeded during a regeneration provided no defect is present. "

*In the 06 and 07 series of amendments*

*Annex 11, Appendix 1, Paragraph 3.2.1.2., amend to read:*

- "6.5.3.2. Standards used for the transmission of OBD relevant information:
- (a) ISO 15031-5 "Road vehicles - communication between vehicles and external test equipment for emissions-related diagnostics – Part 5: Emissions-related diagnostic services", dated 1 April 2011 or SAE J1979 dated 23 February 2012;
- (b) ISO 15031-4 "Road vehicles – Communication between vehicle and external test equipment for emissions related diagnostics – Part 4: External test equipment", dated 1 June 2005 or SAE J1978 dated 30 April 2002;

- (c) ISO 15031-3 "Road vehicles – Communication between vehicle and external test equipment for emissions related diagnostics Part 3: Diagnostic connector and related electrical circuits: specification and use", dated 1 July 2004 or SAE J 1962 dated 26 July 2012;
- (d) ISO 15031-6 "Road vehicles – Communication between vehicle and external test equipment for emissions related diagnostics – Part 6: Diagnostic trouble code definitions", dated 13 August 2010 or SAE J2012 dated 07 March 2013;
- (e) ISO 27145 "Road vehicles – Implementation of World-Wide Harmonized On-Board Diagnostics (WWH-OBD)" dated 2012-08-15 with the restriction, that only 6.5.3.1.(a) may be used as a data link;
- (f) ~~ISO 14229:2013 "Road vehicles – Unified diagnostic services (UDS) with the restriction, that only 6.5.3.1.(a) may be used as a data link"~~  
**SAE J 1979-2 "E/E Diagnostic Test Modes: OBDonUDS", April 2021.**

The standards (e) ~~and or~~ (f) may be used as an option instead of (a) ~~not earlier than 1 January 2019.~~"

## II. Justification

1. This proposal addresses the correction of the recursive formula for  $V_n$  of paragraph 6. in Appendix 2 of the 05, 06 and 07 series of amendments of UN Regulation No. 83.

2. This proposal aligns the approval certificates of the 06 and 07 series of amendments to UN Regulation No. 83 with the latest changes to UN Regulation No. 24.

Note: the footnote designations appear to vary with the Series of Amendments and language. Only the wording of this footnote should be amended.

3. The altitude of 2500m in paragraph 3.2.1.2. should remain unchanged. This permits continuity of existing approvals to UN Regulation No. 83 whilst being covered by the value of 2400m in UN Regulation No. 154.

4. Other than the altitude mentioned above, this proposal aligns the text of UN Regulation No. 83 with that of UN Regulation No. 154, thus enabling harmonized development of OBD systems.