

## Proposal for additional content in ECE/TRANS/WP.29/GRPE/2023/12

The text reproduced below was prepared by the expert from the International Organization of Motor Vehicle Manufacturers (OICA). This document aims to harmonize the requirements of the 00, 01, 02 and 03 series of amendments 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. Proposal

*In the 00, 01, 02 and 03 series of amendments*

*Annex C5, paragraph 4.6., amend to read:*

"4.6. At the request of the manufacturer, a vehicle with an OBD system may be accepted for type-approval with regard to emissions, even though the system contains one or more deficiencies such that the specific requirements of this annex are not fully met, provided that the specific administrative provisions set out in ~~section~~ paragraph ~~34~~ of this annex are complied with. The Type Approval Authority shall notify its decision in granting a deficiency request to all other Contracting Parties to the 1958 Agreement applying this Regulation."

*Annex C5, Appendix 1, paragraph 6.5.3.4., amend to read:*

"6.5.3.4. Basic diagnostic data, (as specified in paragraph 6.5.1.) and bi-directional control information shall be provided using the format and units described in the standard listed in paragraph 6.5.3.2.(a) of this appendix and must be available using a diagnostic tool meeting the requirements of the standard listed in paragraph 6.5.3.2.(b) of this appendix.  
The vehicle manufacturer shall provide to ~~a national~~ **the responsible** standardisation body the details of any emission-related diagnostic data, e.g. PID's, OBD monitor Id's, Test ID's not specified in the standard listed in paragraph 6.5.3.2.(a) of this appendix but related to this Regulation."

*Annex C5, paragraph 3.2.1.2., amend to read:*

"3.2.1.2. A manufacturer may disable any specific OBD monitor for a given driving cycle for ambient or engine **coolant** temperatures below 266 K (-7 °C) or at elevations over 2,440 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 any specific OBD monitor at other ambient **or engine coolant** 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 OBD thresholds are exceeded during a regeneration provided no defect is present.

**Engine **coolant** temperature is only deemed subject to approval, if it is used as a substitute to ambient temperature."**

*In the 00 and 01 series of amendments*

*Annex C5, Appendix 1, paragraph 6.5.3.2., 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.~~"

*In the 00 and 02 series of amendments*

*Annex C5, Appendix 1, paragraphs 6.3.2.1., 6.3.2.2., 6.3.2.6., 6.4.2.2. and 6.4.2.3., amend to read:*

- "6.3.2.1. **Level 1A Only**  
 Where fitted, replacement of the catalyst with a deteriorated or defective catalyst or electronic simulation of such a failure.
- 6.3.2.2. **Level 1A Only**  
 Where fitted, total removal of the particulate trap or, where sensors are an integral part of the trap, a defective trap assembly.
- ...  
 6.3.2.6. **Level 1A Only**  
 The manufacturer shall demonstrate that malfunctions of the EGR flow and cooler are detected by the OBD system during its approval test.  
 ...
- 6.4.2.2. **Level 1A Only**  
 Where fitted, replacement of a catalyst with a deteriorated or defective catalyst or electronic simulation of a deteriorated or defective catalyst that results in emissions exceeding any of the OBD thresholds set out in paragraph 6.8.2. of this Regulation.
- 6.4.2.3. **Level 1A Only**  
 Where fitted, total removal of the particulate trap or replacement of the particulate trap with a defective particulate trap meeting the conditions of paragraph 6.3.2.2. of this appendix that results in emissions exceeding any of the OBD thresholds set out in paragraph 6.8.2. of this Regulation."

*Annex C5, Appendix 1, paragraph 6.2.3., amend to read:*

- "6.2.3. ~~Level 1A Only~~  
 At the request of the manufacturer with approval by Type Approval Authority, alternative preconditioning methods may be used.

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The reason for the use of additional preconditioning cycles or alternative preconditioning methods as well as details of these cycles/methods shall be reported in the type-approval documentation."

*In the 00, 01, 02 and 03 series of amendments*

*Annex C5, Appendix 1, paragraph 6.5.1.3., amend to read:*

"6.5.1.3. For all emission control systems for which specific on-board evaluation tests are conducted **according to this annex** (catalyst, oxygen sensor, etc.), except misfire detection, fuel system monitoring and comprehensive component monitoring, the results of the most recent test performed by the vehicle and the limits to which the system is compared shall be made available through the serial data port on the standardised data link connector according to the specifications given in paragraph 6.5.3. of this appendix. For the monitored components and systems excepted above, a pass/fail indication for the most recent test results shall be available through the data link connector. All data required to be stored in relation to OBD in-use performance according to the provisions of paragraph 7.6. of this appendix shall be available through the serial data port on the standardized data link connector according to the specifications given in paragraph 6.5.3. of this appendix."

## II. Justification

1. Correction of a wrong reference. In Paragraph 3. the functional requirements for the OBD system are included. Paragraph 4. describes the requirements relating to type-approval including the provisions for deficiencies.
2. For Series 02 and 03, SAE J 1979-2 was allowed as a standard for the transmission of OBD relevant information. ISO 14229 was removed from the list of allowed standard. This proposal aligns series 00 and 01 with series 02 and 03.
3. The standards used for transmission of OBD information are maintained by international standardisation bodies (ISO, SAE). The standardisation body maintaining the affected standard has to be informed.
4. Alignment of wording between the first sentence of paragraph 3.2.1.2. ("ambient or engine temperatures") and the second sentence, where "or engine" was missing to avoid misunderstanding and ambiguity.

Engine temperature is sometimes used as a substitute for ambient temperature. In this case, the engine temperature is evaluated once after a longer engine shut off phase. Only in this case an approval is necessary, as this is the only case, where an OBD monitor is disabled for the complete trip.

5. The OBD requirements for Diesel engines in Paragraph 3.3.4 of Annex C5 are limited to Level 1A. The requirements in paragraphs 6.3. ("Failure modes to be tested") and 6.4. ("OBD system test"), are not limited to Level 1A. This proposal corrects this.
6. Align Paragraph 6.5.1.3. with GTR No.15 to avoid ambiguity
7. Alignment with Series 01/03. Those allow the use of alternative preconditioning methods for Level 2.

Background: Manufacturers design OBD monitoring conditions and functionalities for market specific driving conditions. Reliable monitors need enable conditions, which run the OBD monitors under circumstances, where failure detection works properly. Those enable conditions are not for all monitors represented by a three-phase WLTC, e.g. some monitors require higher load conditions. For those monitors alternative preconditioning methods are necessary.