Proposal for amendments to the 06 and 07 series of amendments to UN Regulation No. 83 (Emissions of M1 and N1 vehicles) amending ECE/TRANS/WP.29/GRPE/2020/5

I. Proposal

Annex 11, paragraph 3.8.1, amend to read:
"3.8.1. The OBD system may erase a fault code and the distance travelled and freeze-frame information if the same fault is not re-registered in at least 40 engine warm-up cycles or forty driving cycles with vehicle operation in which the criteria specified in sections 7.5.1.(a) –(c) of Annex 11, Appendix I are met. 40 driving cycles with vehicle operation in which the following criteria (a) to (c) are satisfied:

(a) Cumulative time since engine start is greater than or equal to 600 seconds;
(b) Cumulative vehicle operation at or above 40 km/h occurs for greater than or equal to 300 seconds;
(c) Continuous vehicle operation at idle (i.e. accelerator pedal released by driver and vehicle speed less than or equal to 1.6 km/h) for greater than or equal to 30 seconds."
II. Justification

Definition to erase fault codes

The initial definition in the UN Regulation No. 83 to erase fault codes by counting engine warm-up cycles has been adapted to consider hybrid electric vehicles. As engine warm-up cycles might occur less frequently compared to conventional combustion engines, the engine warm-up cycle is not suitable for hybrid vehicles and therefore an alternative cycle was included by referencing to the general denominator. However, this updated definition (like paragraphs 7.5.1.(a)–(c)* of Appendix I to Annex 11) to erase fault codes would not (or not sufficiently) allow fault code erasing in cold regions (below -7°C) and high altitude (above 2440m). Therefore, a further update is proposed to adapt the definition by deleting the two environmental conditions (ambient temperature < -7°C and high altitude > 2440m). Except for these two criteria, the conditions to erase a fault code are identical. This proposal would support an international harmonization of OBD regulations as well as geographical differences in all contracting parties.

*Appendix I to Annex 11

7.5.1. The general denominator is a counter measuring the number of times a vehicle has been operated. It shall be incremented within 10 seconds, if and only if, the following criteria are satisfied on a single driving cycle:

(a) Cumulative time since engine start is greater than or equal to 600 seconds while at an elevation of less than 2,440 m above sea level and at an ambient temperature of greater than or equal to -7 °C;
(b) Cumulative vehicle operation at or above 40 km/h occurs for greater than or equal to 300 seconds while at an elevation of less than 2,440 m above sea level and at an ambient temperature of greater than or equal to -7 °C;
(c) Continuous vehicle operation at idle (i.e. accelerator pedal released by driver and vehicle speed less than or equal to 1.6 km/h) for greater than or equal to 30 seconds while at an elevation of less than 2,440 m above sea level and at an ambient temperature of greater than or equal to -7 °C.