Proposal for amendments to the 02 series of amendments of UN Regulation No. 131 (Advanced Emergency Braking Systems of heavy vehicles)

Submitted by the chair of the Informal Working Group on Advanced Emergency Braking Systems of Heavy Duty Vehicles (AEBS-HDV)

The text reproduced below was prepared by the experts from the Informal Working Group on Advanced Emergency Braking Systems of Heavy Duty Vehicles to align some of the text on the corresponding paragraphs of UN R152, and to clarify the interpretation of the provisions on system robustness when applied to HDVs. The modifications to the text of the current regulation are marked in strikethrough characters for deleted text and in bold characters for added text.

I. Proposal

Paragraph 5.4.1.1., amend to read:

"5.4.1.1.   The AEBS function shall be automatically reinstated at the initiation of each new ~~ignition~~ **engine start/run** cycle. **This requirement does not apply when a new engine start/run cycle is performed automatically, e.g. the operation of a stop/start system.**"

Paragraph 6.9, amend to read (insert a reference to a new footnote 5 and a new footnote 5):

"6.9.   Robustness of the system

6.9.1.   Any of the above test scenarios, where a scenario describes one test setup at one subject vehicle speed at one load condition of one category (Vehicle to Vehicle, Vehicle to Pedestrian), shall be performed two times. If one of the two test runs fails to meet the required performance, the test may be repeated once. A test scenario shall be accounted as passed if the required performance is met in two test runs. The number of failed tests runs within one category shall not exceed:

(a)   10.0 per cent of the performed test runs for the Vehicle to Vehicle tests; and

(b)   10.0 per cent of the performed test runs for the Vehicle to Pedestrian tests[5].

[5]   **In case the total number of test runs within a category would still be less than 10, additional test runs of that category may be performed, including but not limited to the failed test scenario, to reach a total number of test runs at least equal to 10.**

6.9.2.   The root cause of any failed test run shall be analyzed together with the Technical Service and annexed to the test report. If the root cause cannot be linked to a deviation in the test setup, the technical service may test at any other speed within the speed range as defined in paragraphs 5.2.1.3., 5.2.1.4., 5.2.2.3. or 5.2.2.4. as relevant.

6.9.3.   During the assessment as per Annex 3, the manufacturer shall demonstrate, via appropriate documentation, that the system is capable of reliably delivering the required performances."

Renumber the following footnotes accordingly.

II. JUSTIFICATIONS

1. The text proposed for amendments to paragraph 5.4.1.1. (AEBS reactivation) is an alignment on the wording adopted for UN R152 (AEBS for light vehicles) per document WP.29/2021/142. There is no difference of AEBS deactivation technology between the light and the heavy vehicles; full alignment is then reasonable.The AEBS-HDV informal working group in addition is of the opinion that alignment on a text that reached consensus within GRVA at its 10th session in May 2021 promotes harmonization and is beneficial for the whole community.

2. The addition of an explanatory footnote in para 6.9.1.(b) (Robustness of the system) permits to widen the possibility of performing additional test runs when one test failed. A total alignement on the wording of UN R152 would not be appropriate in this case since the number of test runs in the revised UN R131 is lower than in UN R152. If the text remains unchanged failing one test run will immediately fail the criterion of only 10% failed tests due to the low number. The footnote permits to increase the number of test runs, thereby decreases the "weight" of a unique failed test run and makes the requirements more reasonable. Note that this is a clarification; the technical service already is given the opportunity to perform as much additional test runs as they believe is needed to assess the quality and robustness of the system.