Submitted by OICA

Informal document **GRSG-123-32**
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Agenda item 4(d))

Proposal to amend UN Regulation No. 159

I. Proposal

Paragraph 6.6.2. to 6.6.3., amend to read:

"6.6.2. The subject vehicle shall be accelerated in a straight line to a constant speed of ~~10 +0/ 0.5 km/h~~ **10 +0/-2 km/h,** before entering the stopping corridor. The subject vehicle shall maintain this constant speed until the vehicle front passes the braking plane (p_{brake}) shown in Figure 2 of Appendix 1, before braking to a stop such that the vehicle front is positioned at the stopping plane (p_{stop}). The subject vehicle shall be considered to have stopped when it has come to a rest and the vehicle is either no longer in a forward vehicle mode or forward gear.

6.6.3. After a delay of no less than 10 seconds from the point at which the subject vehicle is considered to have stopped, the test target shall then be accelerated in a straight line on a trajectory parallel to the longitudinal median plane of the vehicle to a speed of 10 +0/-0.5 km/h within a distance of 5 m, before being brought to a stop. While accelerating, the lateral tolerance of the test target motion shall not exceed ~~± 0.05 m ±~~ **0.10 m."**

Paragraph 6.7.2. to 6.7.3., amend to read:

"6.7.2. The subject vehicle shall be accelerated in a straight line to a constant speed of ~~10 +0/ 0.5 km/h~~ **10 +0/-2** km/h, before entering the stopping corridor. The subject vehicle shall maintain a constant speed until the vehicle front passes the braking plane (p_{brake}) shown in Figure 2 of Appendix 1, before braking to a stop such that the vehicle front is positioned at the stopping plane (p_{stop}). The subject vehicle shall be considered to have stopped when it has come to a rest and the vehicle is either no longer in a forward vehicle mode or forward gear.

6.7.3. After a delay of no less than 10 seconds from the point at which the subject vehicle is considered to have stopped, the test target and subject vehicle shall be accelerated at the same time and in a straight line, on a trajectory parallel to the longitudinal median plane of the subject vehicle, to a constant speed of ~~10 +0/ 0.5 km/h~~ **10 +0/-3** km/h in a distance of no greater than 5 m. **If the characteristics of the vehicle make it impossible to abide by the distance of 5 m, the distance may be increased**. The subject vehicle and test target shall maintain this constant speed until a total travel distance of no less than 15 m from the stopping point is traversed by the subject vehicle. The lateral tolerance of the subject vehicle shall not exceed ~~± 0.05 m ±~~ **0.20 m.**, whilst the lateral tolerance of the test target motion shall not exceed ~~± 0.05 m ±~~ **0.10 m.** The forward separation distance between the vehicle front and test target while moving shall be maintained to be within the boundaries of the maximum and minimum forward separation planes**."**

II. Justification

1. All major amendments address the test tolerances of the subject vehicle and the test target only. They do not affect the Moving Off Information System safety requirements, however increased the system robustness and ensure the feasibility of physical test conditions and vehicle characteristics.

2. 6.6.2.and 6.7.2 addresses the speed of the test target before entering the stopping corridor, which shall maintain until the vehicle front passes the braking plane. An increased tolerance takes account to this. Tolerances in velocity will actually increase MOIS robustness.
3. 6.6.3: Unnecessary narrow lateral tolerance. The *lateral tolerance of the test target motion* does not affect MOIS system and safety requirements and should be increased to 0.10m to account for physical test conditions. In contrary, this will increase MOIS robustness.
4. 6.7.3. Vehicle characteristics (load condition and engine power) of heavy vehicles does not allow an acceleration within 5m to exactly 9.5-10km/h. Therefore, the tolerance band of the target velocity and distance needs to be adjusted.
   Since the vehicles in scope has very different vehicle characteristics, the acceleration distance of 5m should dependent to the characteristics – similar to the 1.5.1.2. of Annex 4 of UN-R13.
   > "1.5.1.2. If the characteristics of the vehicle make it impossible to abide by the duration prescribed for Δt, the duration may be increased; in any event, in addition to the time necessary for braking and accelerating the vehicle, a period of 10 seconds shall be allowed in each cycle for stabilizing the speed v1."

   Both amendments does not affect the system performance, however increase robustness.
   Same for the *lateral tolerance of the test target motion & lateral tolerance of the subject vehicle*: Should be increased to ensure the feasibility and robustness of physical test.

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