Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/7

Note: This informal document intends to amend to changes proposed in ECE/TRANS/WP.29/GRVA/2020/7 incorporating further feedback received

I. Proposal

Paragraph 5.6.2.1.3., amend to read (insert a new provision):

"5.6.2.1.3. The system shall be designed so that excessive intervention of steering control is suppressed to ensure the steering operability by the driver and to avoid unexpected vehicle behaviour, during its operation. To ensure this, the following requirements shall be fulfilled:

(a) The steering control effort necessary to override the directional control provided by the system shall not exceed 50 N;

(b) The specified maximum lateral acceleration ay_{smax} shall be within the limits as defined in the following table:

Table 1

For vehicles of Category M_1, N_1

Speed range	*10 - 60 km/h*	*> 60 - 100 km/h*	*> 100 - 130 km/h*	*> 130 km/h*
Maximum value for the specified maximum lateral acceleration	3 m/s²	3 m/s²	3 m/s²	3 m/s²
Minimum value for the specified maximum lateral acceleration	0 m/s²	0.5 m/s²	0.8 m/s²	0.3 m/s²

For vehicles of Category M_2, M_3, N_2, N_3

Speed range	*10 - 30 km/h*	*> 30 - 60 km/h*	*> 60 km/h*
Maximum value for the specified maximum lateral acceleration	2.5 m/s²	2.5 m/s²	2.5 m/s²
Minimum value for the specified maximum lateral acceleration	0 m/s²	0.3 m/s²	0.5 m/s²

(c) The moving average over half a second of the lateral jerk generated by the system shall not exceed 5 m/s³.

(d) Special provision for vehicles of category M1 ~~/ [N1]~~

~~**Notwithstanding the maximum values given in the table above, the manufacturer may declare a value for the specified maximum lateral acceleration ay_{smax} of up to 4 m/s² for**~~

~~**(i) Vehicle speeds up to 60 80 km/h,**~~

~~**(ii) Driving situations without heavy rain (e.g. the wipers are not in use at a permanent stage), and**~~

~~**(iii) Ambient air temperatures above [4]°C**~~

~~**Where the manufacturer declares a maximum lateral acceleration of ay_{smax} exceeding 3m/s², and where the conditions of 5.6.2.1.3. (d) (ii) and (iii) are both satisfied, the system shall linearly reduce the maximum lateral acceleration of ay_{smax} at 60 km/h to a maximum lateral acceleration of 3 m/s² at 80 km/h.**~~

~~**For vehicle speeds of 80 km/h or greater, the maximum values of table 1 apply regardless of whether the conditions of 5.6.2.1.3. (d) (ii) and (iii) are satisfied.**~~

The manufacturer may declare control strategies (e.g. transient behaviour) for when the system would encounter lateral acceleration values exceeding the limits described in the table above due to changes in the radius of curvature of the bend.

In such an event, for vehicle speeds up to 80 kph, the system may exceed the ay_{smax} limit of 3 m/s² for up to 2 seconds of time by not more than 40% in order to safely return to the maximum value defined in the table above.

This special provision shall be subject to Annex 6 and the manufacturer shall demonstrate, to the satisfaction of the Technical Service, the safety aspects of this special provision.

II.Justification

1. This informal document intends to amend to changes proposed in ECE/TRANS/WP.29/GRVA/2020/7 incorporating further feedback received.

2. This proposal intends to allow the system to have a grace time in order to deal with unexpected changes in the radius of the curvature of the bend, by allowing the system to exceed the imposed ayxsmax limit of 3 m/s² by a maximum of 40% for up to 2 seconds. This will allow the system to offer consistent mitigation and slow down to return to the limits described in the table in a safe manner, avoiding unexpected behaviour for the driver and rear traffic.