Proposal for amendments to ECE/TRANS/WP.29/GRVA/2025/17

The document ECE/TRANS/WP.29/GRVA/2025/17 proposes a text for 01 series of amendments regulation on Acceleration Control for Pedal Error (ACPE) prepared by a dedicated informal working group under chairmanship of Germany and Japan. This informal document proposes amendments to the ECE/TRANS/WP.29/GRVA/2025/17.
The changes compared to document GRVA/2025/17 are indicated in red bold for new and red ~~strikethrough~~ for deleted characters.

I. Proposal for amendments to document …GRVA/2025/17

Paragraph 0., amend to read:

0. Introduction

Collisions caused ….

The accident data shows that pedal misapplication scenarios can vary widely from those which have been included for testing ACPE under this version of the Regulation. Therefore, a second phase **was** ~~is~~ looking to expand the situations where ACPE can provide benefit. These considerations **led to** ~~will cover~~ requirements and test procedures to address 'moving-off' and moving vehicle scenarios (including addressing vehicles which 'creep' when the brake control is released), pedestrian scenarios**. The situation on potential pedal misapplication in vehicles of Category N1 is ambiguous in some regions, therefore the contracting parties are recommended to carry out an evaluation of the necessity to apply this regulation in their region(s) for this vehicle category**.

Equally, the regulation could be updated in a subsequent phase to accommodate secondary collisions and higher speed, both when technical feasibility is confirmed.

Paragraph 1.1., amend to read:

1.1. This UN Regulation applies to the type approval of vehicles of Category M_1[1] **[and N_1]** equipped with automatic transmission with regard to their Acceleration Control for Pedal Error systems (ACPE).

Paragraph 1.3., amend to read:

1.3. Vehicles where installation of means of forward and/or rear detection is incompatible with their ~~on-road~~ **intended** use may be exempted from the relevant requirements (forward and/or rear direction) of this Regulation, subject to the decision of the Type Approval Authority.

Insert a new paragraph 1.4., to read:

1.4. Completed vehicles which have been built on a base vehicle which did not have the necessary structure to allow the installation of means of forward and/or rear detection may be exempted from the relevant requirements (forward and/or rear direction) of this Regulation, subject to the decision of the Type Approval Authority.

Paragraph 2.7., amend to read:

2.7. "*Obstacle*" means either a vehicle, or a wall-like structure **or a pedestrian**.

Insert a new paragraph 2.10., to read:

2.10. **"*Extreme outer edge*" on either side of the vehicle, means the plane parallel to the median longitudinal plane of the vehicle and touching its lateral outer edge, disregarding the projection:**

(a) Of tyres near their point of contact with the ground, and of connections for tyre-pressure gauges;

(b) Of any anti-skid devices mounted on the wheels;

(c) Of devices for indirect vision;

(d) Of side direction-indicator lamps, end-outline marker lamps, front and rear position lamps, parking lamps, retro-reflectors and side-marker lamps.

Insert a new paragraph 2.11., to read:

2.11. **"*Vehicle width*" means the distance between the two vertical planes defined in paragraph 2.10.**

Insert a new paragraph 2.12., to read:

2.12. **"*Moving off*" means starting from stationary and moving forward or rearward after releasing the brakes.**

Insert a new paragraph 2.13., to read:

2.13. **"*Maximum Creeping Speed*" means the maximum steady state speed which the vehicle achieves on a horizontal surface with the powertrain engaged and operating at idle, and no acceleration or brake demand.**

Insert a new paragraph 2.13.1., to read:

2.13.1. **"*Creeping*" means the state of motion with the powertrain engaged and operating at idle, and no acceleration or brake demand, up to the Maximum Creeping Speed.**

Insert a new paragraph 2.14., to read:

2.14. **"Reducing the effective demand of the accelerator control to zero" means where the resulting power/torque demand from the accelerator control is reduced to the equivalent of the driver removing any input into the accelerator control, irrespective of the actual input being given (this is exclusive of power/torque demand not in connection with the relative position of the accelerator control, e.g. rollback prevention, anti-stall).**

Paragraph 5.1.2., amend to read:

5.1.2. An accelerator control application **resulting in continuous acceleration and** having a velocity of at least 400 per cent per second over a travel distance of at least 70 per cent of the total travel distance of the accelerator control, and reaching a maximum position of the accelerator control of at least 90 per cent with that velocity shall be regarded as an accelerator control misapplication in the context of the paragraph 5.1.1.

Paragraph 5.1.4., amend to read:

5.1.4. The ACPE shall control acceleration when the vehicle is accelerated **both** from standstill **and, as relevant, while creeping**.

5.1.4.1 **An ACPE intervention is not required when: ~~there is an AEB warning or intervention occurring.~~**

(a) there is an AEB warning or intervention occurring; or

(b) the vehicle speed is greater than 10 km/h.

5.1.4.2 **If ACPE is not ready to perform an intervention 6 s after the initiation of the vehicle powertrain, information of this status shall be indicated to the driver. This information shall exist until the system has been successfully initialised.**

Paragraph 5.1.5., amend to read:

~~[~~5.1.5. The ACPE shall limit vehicle acceleration in order to prevent or mitigate a collision with an obstacle located ~~between 1.0 m and~~ **not more than** 1.5 m in front of or behind the vehicle, in the vehicle path, at the time the ~~accelerator control is applied~~ **triggering conditions (as outlined in paragraph 5.1.2.) are** ~~experienced~~ **achieved**, provided:

(a) Vehicle external influences allow for the required acceleration inhibition, i.e.:

(i) The road is flat, horizontal and dry affording good adhesion;

(ii) The weather conditions do not affect the performance of the vehicle (e.g. no storm, not below 0°C);

(b) The vehicle state itself allows for the required acceleration inhibition, e.g.:

(i) The tyres are in an appropriate state and properly inflated;

(ii) The brakes if intended to be used are properly operational (brake temperature, pads condition etc.);

(iii) There is no severe uneven load distribution;

(iv) No trailer is coupled to the motor vehicle and the mass of the motor vehicle is between maximum mass and mass in running order conditions;

(v) The vehicle's powertrain management system is properly operational

(vi) If the vehicle is equipped with rear hatches, trunk lids or tailgates, they are closed and latched in the normal conditions of vehicle operation.

(c) There are no external influences affecting the physical sensing capabilities, i.e.:

(i) The ambient illumination conditions are at least 1000 Lux and there is no extreme blinding of the sensors (e.g. direct blinding sunlight, highly radar-reflective environment);

(ii) The target vehicle is not extreme with regard to the Radar Cross Section (RCS) or the shape/silhouette (e.g. below fifth percentile of RCS of all M_1 vehicles)

(iii) There are no significant weather conditions affecting the sensing capabilities of the vehicle (e.g. heavy rain, dense fog, snow, dirt);

(iv) There are no overhead obstructions close to the vehicle;

(d) The situation is unambiguous, i.e.:

(i) The obstacle is stationary, unobstructed, clearly separated from other objects in the driving direction;

~~(ii) The lateral offset between the centreline of the obstacle and the centreline of the vehicle is not more than 0.2 m~~

~~(iii) The direction of travel is straight with no curve, and the vehicle is not turning at an intersection and following its lane.~~

~~(iv) The obstacle is a vehicle of category M_1, or a wall like structure with a width of at least 2.0 m and a height of at least 1.0 m.~~

(ii) In the case of a vehicle obstacle, the centre line of the obstacle is located between two vertical longitudinal planes defining the extreme outer edge of the vehicle.

(iii) In the case of a wall obstacle, the overlap between wall and vehicle is at least 1.0 m.

(iv) In the case of a pedestrian obstacle, the distance between the centre line of the pedestrian obstacle and the centre line of the vehicle is not more than 25 per cent of the vehicle width.

(v) The direction of travel is straight with no curve, and the vehicle is not turning at an intersection and following its lane.

(vi) The obstacle is a vehicle of category M_1, or a wall like structure with a width of at least 2.0 m and a height of at least 1.0 m or a silhouette of a pedestrian that relates to a human being.

(vii) The obstacle is located at least 1.0m from the vehicle at the time the triggering conditions (as outlined in paragraph 5.1.2.) are ~~experienced~~ achieved;

(viii) The vehicle is travelling at or below its maximum creeping speed in the ~~frontal~~ forward direction and at or below ~~less than~~ ~~[~~4km/h~~]~~ in rearward direction[3].

5.1.5.1 When conditions deviate from those listed above, the system shall not deactivate or unreasonably switch the control strategy. This shall be demonstrated by the manufacturer in accordance with Annex 3 of this Regulation and, if deemed justified, may be followed by testing by the Technical Service in conditions deviating from those listed above or those in paragraph 6. The rationale for and the results of this verification testing shall be appended to the test report.~~]~~

Insert a new footnote in paragraph 5.1.5. (d) (viii), to read:

[3] This condition shall be reviewed by September 2032.

The subsequent footnotes, to be renumbered accordingly.

Paragraph 5.1.6. and 5.1.6.1., amend to read:

~~[~~5.1.6. **ACPE performance ~~In case of acceleration from standstill,~~**

5.1.6.1. Acceleration from standstill,

In the case that a collision is not prevented, the collision speed shall be no greater than 8 km/h higher than the vehicle speed at the point where the triggering conditions specified in paragraph 5.1.2. are met.

In addition, the collision speed shall not be greater than 70% of that speed the vehicle would have had in the same position and under the same circumstances but without any ACPE intervention.

5.1.6.1.**1. ~~In case of acceleration from standstill~~ Low power to weight vehicles,**

In the case of vehicles that do not exceed 8 km/h without ACPE in the test scenarios but for which a speed reduction of 30 per cent cannot be achieved due to a low engine power to test mass ratio, the speed reduction shall be of at least 15 per cent.~~]~~

Insert a new paragraph 5.1.6.2., amend to read:

~~[~~5.1.6.2. ~~In case of a~~Acceleration while creeping,

~~ACPE acceleration suppression control shall be conducted at least at the point of the collision. The manufacturer shall demonstrate to the satisfaction of the technical service and the type approval authority that an ACPE complies with this requirement.~~

In the case a collision is not prevented, the ACPE shall reduce the effective demand of the accelerator control to zero at or before the point of collision.~~]~~

Paragraph 5.1.12., amend to read:

5.1.12. The performance requirements shall be verified using the test procedure as described in section **6.6.1. and 6.6.2.**

Paragraph 6.3.2., amend to read:

6.3.2. Prior to any testing, it shall be ensured that the ACPE is switched on and ready to function.

During the conduct of the test the technical service need to ensure that the boundary conditions of the ACPE - as defined by the manufacturer - with regard to the detection of the test target are taken into account (e.g. avoid blocking of a sonar system used, ensure that a vision system used can properly identify the pedestrian test target used as a human by making it fully visible to the camera system before testing, etc.)

Insert a new paragraph 6.4.2., amend to read:

6.4.2. The targets used for the pedestrian detection tests shall be a child articulated "soft target" in its resting position with the articulation being switched off and be representative of the human attributes applicable to the sensor system of the ACPE under test according to ISO 19206-2:2018.

Insert a new paragraph 6.5. and 6.5.1. to 6.5.5., amend to read

(and re-number the following paragraphs)

6.5. Offset of vehicle and target

6.5.1. The reference point for the location of the vehicle shall be the most rearward point on the centreline of the vehicle when going rearwards, and the most forward point of the vehicle when going forwards.

6.5.2. The lateral offset between the centreline of the vehicle target and the centreline of the vehicle shall be between 0.0 m and the distance to extreme outer edge of the vehicle.

6.5.3. The lateral offset between the centre line of the pedestrian obstacle and the centre line of the vehicle is not more than 25 per cent of the vehicle width.

6.5.4. The orientation of the pedestrian target is to be determined by the technical service.

6.5.5. The orientation of the vehicle target shall be 0° or 180° respectively as defined in ISO 19206-3:2021, chosen by the technical service.

Paragraph 6.6. and 6.6.1., amend to read:

6.6. Test procedures ~~Accelerator control misapplication test~~

The test procedures shall be performed ~~**with and without an ACPE intervention**~~ both in a forward and rearward direction and at least with the **ACPE interventions triggered** **at** ~~**in** vehicle situated~~ 1.0 m (+0.1 m tolerance) and 1.5 m (-0.1 m tolerance) **distance** from the target position ~~**at the start of the test**~~ (as detailed in Table 1).

Table 1
Test conditions

Driving direction	*Distance to target* ***at the point triggering conditions achieved*** */ Distance to speed measuring point (m)*	*Tolerance on the longitudinal distance (m)*	~~*Tolerance on the lateral (offset) distance (m)*~~	~~***Presence of target***~~
~~**Forward**~~	~~**1.0**~~	~~**+ 0.1**~~	~~**+/- 0.2**~~	~~**Yes**~~
Forward	1.0	+ 0.1	~~N/A~~	~~**No ***~~
~~**Forward**~~	~~**1.5**~~	~~**- 0.1**~~	~~**+/- 0.2**~~	~~**Yes**~~
Forward	1.5	-0.1	~~N/A~~	~~**No ***~~
~~**Rearward**~~	~~**1.0**~~	~~**+ 0.1**~~	~~**+/- 0.2**~~	~~**Yes**~~
Rearward	1.0	+ 0.1	~~N/A~~	~~**No ****~~
~~**Rearward**~~	~~**1.5**~~	~~**- 0.1**~~	~~**+/- 0.2**~~	~~**Yes**~~
Rearward	1.5	-0.1	~~N/A~~	~~**No ****~~

Presence of target:

~~Yes : with ACPE intervention~~
~~No : without ACPE intervention or with ACPE deactivation~~
~~* These tests may be combined~~
~~** These tests may be combined~~

~~The procedure for each test shall be as follows:~~

~~(a) Position the vehicle at a distance to the target or speed measurement point as defined in Table 1.~~

~~(b) Hold the vehicle stationary and select the corresponding driving direction.~~

~~(c) Accelerate the vehicle, whilst maintaining the steering control in the neutral position, by operating the accelerator control in order to achieve the relevant triggering conditions (as outlined in paragraph 5.1.2.) before the vehicle reaches a speed of 0.5 km/h.~~

~~(d) Record the speed at the collision point (if applicable) or the speed at the respective speed measurement point.~~

~~Before any test is started the vehicle may be driven in the direction of the target for a distance of up to 20 m to the start position and/or the engine may be switched "off" and "on", if requested by the manufacturer.~~

6.6.1. Test procedure for a stationary vehicle

6.6.1.1. Each test condition according to Table 1 shall be tested with and without the presence of the target. For tests without a target the ACPE shall be deactivated if necessary, and may be combined where feasible.

6.6.1.2. The procedure for each test **with a stationary (non creeping) vehicle** shall be as follows:

(a) Position the vehicle at a distance to the **relevant** target or speed measurement point as defined in Table 1.

(b) Hold the vehicle stationary and select the corresponding driving direction.

(c) Accelerate the vehicle, whilst maintaining the steering control in the neutral position, by operating the accelerator control in order to achieve the relevant triggering conditions (as outlined in paragraph 5.1.2.) before the vehicle reaches a speed of 0.5 km/h.

(d) Record the speed at the collision point (if applicable) or the speed at the respective speed measurement point.

Insert a new paragraph 6.6.2., amend to read:

6.6.2. Test procedure for a creeping vehicle

6.6.2.1. Each test condition according to Table 1 shall be tested once with a starting point and a profile of the accelerator control application selected at the discretion of the Technical Service. The starting point and the accelerator control application profile shall be selected such that ~~an ACPE intervention is expected, and aiming for a creeping speed as high~~ the triggering condition (as outlined in paragraph 5.1.2.) is achieved as close to:

- **the maximum creeping speed in the forward direction;**
- **4km/h in the rearward direction,**

as reasonably practical whilst remaining at or below that speed and avoiding any ~~ACPE suppression due to an~~ AEBS warning or intervention which results in an ACPE intervention not occurring.

~~**The recorded creeping speeds with and without the presence of a target (according to subbullet (e)) shall not deviate by more than [0,x] km/h in order to assess the test as valid.**~~

6.6.2.2. The procedure for each test with a creeping vehicle shall be as follows:

(a) Position the vehicle at ~~an appropriate distance to reach a creeping speed at the relevant distance to target / distance to speed measuring point according to Table 1.~~ the selected starting point as determined by paragraph 6.6.2.1.

(b) Hold the vehicle stationary and select the corresponding driving direction.

(c) Release the braking system so that the vehicle starts creeping.

(d) Operate the accelerator control in order to achieve the relevant triggering conditions (as outlined in paragraph 5.1.2.) ~~once~~ at the point the vehicle has reached the distance to target ~~/ the speed measurement point~~ according to Table 1.

(e) ~~Record the creeping speed at the triggering point of the ACPE (as outlined in paragraph 5.1.2.) and the speed at the collision point (if applicable) or the speed at the respective speed measurement point.~~ In the case a collision is not prevented the manufacturer shall demonstrate to the satisfaction of the technical service that the intervention complies with the requirements of paragraph 5.1.6.2.

Paragraph 6.7., amend to read:

6.7. If this is deemed justified, the Technical Service may **additionally** test in any test condition within the conditions specified in paragraph 5.1.**5. or test alternative accelerator control application profiles.** ~~during the tests as described in paragraph 6.6.5., e.g. testing a creeping vehicle also according to section 6.6.1.~~

~~**6.7.1 Other accelerator control application profiles may be tested, as necessary, at the discretion of the technical service.**~~

Insert a new paragraph 12., amend to read:

12. Transitional provisions

12.1. Transitional provisions applicable to the 01 series of amendments

12.1.1. As from the official date of entry into force of the 01 series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept type approvals under this Regulation as amended by the 01 series of amendments.

12.1.2. As from 1 September 2029, Contracting Parties applying this Regulation shall not be obliged to accept type approvals to the original version of this Regulation, first issued after 1 September 2029.

12.1.3. Until 1 September 2031, Contracting Parties applying this Regulation shall accept type approvals to the original version of this Regulation, first issued before 1 September 2029.

12.1.4. As from 1 September 2031, Contracting Parties applying this Regulation shall not be obliged to accept type approvals issued to the original version of this Regulation.

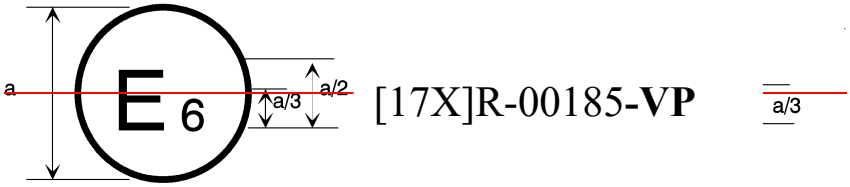
12.1.5. **Notwithstanding paragraph 12.1.4., Contracting Parties applying this Regulation shall continue to accept type approvals issued according to the original version of this Regulation, for vehicles which are not affected by the changes introduced by the 01 Series of amendments.**

12.1.6. **Notwithstanding the transitional provisions above, Contracting Parties who start to apply this Regulation after the date of entry into force of the most recent series of amendments are not obliged to accept type approvals which were granted in accordance with any of the preceding series of amendments to this Regulation.**

12.1.7. **Contracting Parties applying this Regulation may grant type approvals according to any preceding series of amendments to this Regulation.**

12.1.8. **Contracting Parties applying this Regulation shall continue to grant extensions of existing approvals to any preceding series of amendments to this Regulation.**

~~*Annex 2,* amend to read (addition of a letter "VP" in the marking and its reference in the text):~~



~~a = 8 mm min~~

~~The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in Belgium (E 6) with regard to the Acceleration Control for Pedal Error (ACPE) pursuant to UN Regulation No. [17X] **(marked with V for Vehicle and Wall. P for Pedestrian)**. The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of UN Regulation No. [17X] in its original form.~~

II. Justification