

## **DRAFT REPORT**

### **Informal working group on Acceleration Control for Pedal Error 6<sup>th</sup> meeting**

27, 28, 29 February 2024

**Venue:** Department for Transport, Great Minster House,  
33 Horseferry Road, Westminster, London SW1P 4DR  
<https://maps.app.goo.gl/Kzw24DtDdzDjpRiE7>

**Web:** We provide different teams links for each date. Click on each date to attend the meeting.  
(Teams links are provided on the next page).  
[27 February](#)  
[28 February](#)  
[29 February](#)

#### **1. Welcome and Introduction**

[Roll call](#)

#### **2. Approval of the agenda**

Document: ACPE-06-01r1 (Chair)

[The agenda was approved with no change.](#)

#### **3. Adoption of the report of the 5<sup>th</sup> meeting of the Informal Working Group**

Document: ACPE-05-07 (Chair and Secretary)

[The report was adopted with no change.](#)

#### **4. Status report of 18th GRVA**

Document: ACPE-18-53 (Chair and Secretary)

[The chair presented the status report of the IWG to the 18<sup>th</sup> session of GRVA \(GRVA-18-XX\).](#)

[The chair informed the informal group that the outcomes of the GRVA session is that the IWG must focus on the 00 series, i.e. the IWG must table a document ready for the 00 series at the 19<sup>th</sup> session of GRVA.](#)

[The chair suggested then that the IWG well follows this request from GRVA.](#)

[The addition of the revision of the terms of reference into agenda was based on that reason.](#)

[The chair clarified that the content of the 00 series is: M1, vehicle, wall,](#)

[TBD this week for the 00 series:](#)

- [- Test procedure + performance requirements](#)
- [- Pedestrian target: vehicle and wall](#)

[The terms of reference will probably extend the mandate to let the IWG discuss the content of the 01 series of amendments \(inclusion of other categories, other obstacles, etc.\)](#)

[J supported the step by step approach.](#)

[UK echoed the J position and supported focusing on the 00 series.](#)

## 5. Pedal misapplication accidents and the Installation rate

Document: ACPE-06-03 (Japan)  
ACPE-06-10 (ROK)

J tabled ACPE-06-03

J suggested starting with the J-NCAP test method for the 00 series. J appreciated the proposal from UK to use a new test method but found it not relevant for the group now.

Clarification:

- All accidents, fatalities + accidents
- M1 category only
- Pedal error definition is result of Police investigation
- AEBS influence: the figures are surely influenced by the intervention of the AEBS

ROK presented the document ACPE-06-10

Some interesting presentation of an on-field pedal error filmed by dash-cams was tabled

Clarifications:

- Chair: No obstacle in front of the vehicle most of the time; crash speed is ca. 61km/h: would the ACPE be relevant in this case?
- Some experts agreed that the case is probably not replicating the scenarios targeted by IWG. ROK clarified that that case was selected from the number of accident cases received by KATRI every month

Conclusion:

- J presentation shows that 00 Series seems relevant
- There is pumping

## 6. Discussion on testability

Document: ACPE-06-04 (Japan)  
ACPE-06-09 (OICA/CLEPA)

J presented the document ACPE-06-04

The conclusions of the J study are as follows:

It was confirmed that conducting the ACPE test by creeping procedure is possible.

- In case of the tested vehicle, in almost all of the conditions and cases, ACPE was activated certainly in forward direction. However, in many cases, ACPE was not activated in backward direction.
- The pedestrian targets were significantly damaged by repeated collisions. If the target is seriously damaged during the type approval test, the test would not be continued.
- It takes longer time until creeping velocity of the vehicle becomes constant. Appropriate time or distance for creeping should be re-considered.
- If we consider state of the art technology, it is considered that adopting creeping procedure from the beginning seems too early. It should be discussed in later stage.

Take-away:

- Creeping test is possible, yet too ambitious for this week's meeting
- Discrimination ACPE/AEBS reactions is still unclear

Q&A:

- What is the robustness of the system? See Slide 14 (15) for backward direction and 13 (14) for the forward direction: when velocity change is around zero, then the ACPE did not activate.

CLEPA-OICA presented the vehicle test results per document ACPE-06-09

The conclusions of the OICA study are as follows:

- Creep speed varies depending on the vehicle type.
- This time, the results were only obtained from a few types of vehicles, and there are still many things to consider in the creep procedure.
- The creeping procedure seems to be similar to moving scenarios. JNCAP test can stably evaluate the effect of acceleration suppression.

The chair warmly thanked Industry for the quick achievement of their duty to perform vehicle tests;

Informal discussions:

- Phase 1
  - J-NCAP procedure with the 00 Series
  - Clarify a creeping test procedure with the 01 series, parameters to be discussed targeting an official document for GRVA session of January 2024
- Phase 2: higher speeds

Debate on the GTR:

J committed to accelerate the process toward a GTR (approaching other 98 Agreement contracting parties at the WP.29 session of March 2024) targeting to get an agreement from WP29 at their June 2024 session.

00 Series:

OICA questioned the necessity of the creeping test procedure in the 00 series since proper performances could be reached from stationary scenario with functional test. The performance of the sensor does not depend on the vehicles speed,

UK: keen to have the possibility to test the vehicle anywhere within the boundaries of the system.

The chair tabled the table reflecting the IWG roadmap (see document ACPE-06-04-17-Rev.2)

- Creeping test method: need further discussions
- N1:
  - J keen to include them in 01 Series
  - OICA not prepared yet, will show data, N1 category is complex since fragmentation of the designs.
- 02 series: “upper speed” to be defined (from 0, to higher speeds, passing by creeping speed).
- Child pedestrian: the debate is a mix of political wish to include them and technical difficulty to reliably detect them.

## 7. Discussion for draft proposal (00 series) of ACPE regulation based on the result of 5<sup>th</sup> IWG

Document: ACPE-05-06 (Chair and Secretary)  
ACPE-06-05 (UK)  
ACPE-06-06 (OICA/CLEPA)  
ACPE-06-07 (OICA/CLEPA)  
ACPE-06-08 (OICA/CLEPA)

Introduction:

UK: the Introduction has mainly 2 purposes

- Aid in the interpretation
- Provide some kind of roadmap

The Introduction can be amended along the series of the regulation.

The group subsequently reviewed the J revision of the Introduction per the document ACPE-06-12. The Introduction will be revised by the group before the GRVA-19 session, and will include wording to indicate that

the conflict with AEBS overriding is solved for the 00 series since the ACPE is assumed to start from a stationary condition.

Conclusion: Introduction to be reviewed by interested parties until next meeting

Scope:

This UN Regulation applies to the type approval of vehicles of Category M1 equipped with automatic transmission with regard to their Acceleration Control for Pedal Error systems (ACPE).

At the request of a manufacturer, vehicles of other categories may be approved under this Regulation.

### Definitions:

*Paragraph 2.4:* the group agreed to remove the definition of “moving off” since the 00 series is restricted to the stationary situation. The paragraph 5.1.1. was then adapted to address “when the vehicle is accelerated from standstill”.

*Paragraph 2.8. (definition of “obstacle”):* the group agreed to remove the pedestrian obstacle for the 00 series; the UK subsequently proposed to simplify the definition by removing the dimensions of the wall. Conclusion: new wording adopted

*Paragraph 5.1.1.:* Editorial improvement. All agreed to link the parts with a “and” to avoid intervention only in one direction.

*2<sup>nd</sup> sub paragraph:* UK explained that the exemption should be possible only for the direction at stake.

OICA pointed out that the sensors might be obscured by e.g. snow, hence the need to make an accurate wording OICA keen that this exemption (R158 and R159) should be in the scope of the regulation. The expert clarified that “partly or fully exempted” was solving this; Yet partly may be anything, while we target front requirements and rear requirements. However, the VRU-Proxi IWG discussed that at length and agreed on the wording “partially or fully”.

J: suggested following structure of UN R158.

Lengthy debate on the wording and the *location of the exemptions*

- The wording “partly or fully”
  - o is misleading since it does not indicate which parts are exempted. The group decided to indicate that this refers to forward/rearward directions
  - o fully exempted means that the vehicle would be non-compliant but nevertheless would get its approval. The group removed “fully” and referred to the “relevant” parts.
- Location of the exemption wording
  - o In the “scope section”: has advantage of clarifying the scope of the regulation.
  - o In the requirements section: has the advantage of widening the scope of the regulation and permitting the contracting parties to narrow it down at national level.

*Minimum distance of the obstacle to the sensor (1m).* any type of sensor needs a certain distance to recognise an object. The value of 1m is recognized as relevant for a certain time in the IWG. Proposal from the chair to move the provision to the “boundary conditions” and rely on the stable strategy provisions. Industry challenged the new wording of 1 m since the concern is the robustness of the detection (not the control strategy). UK questioned the 1m since the parking assistance systems function well below that value. However a simple warning system is not comparable to an intervening system. Also the OEM cannot guarantee detecting all and every objects in the range 1.0 – 1.5m. The question of the unreasonable change of strategy was discussed for the case the system is simply switched off below a certain distance. Proposal to re-visit the subject when the provisions for the 01 Series will be discussed. Conclusion: the group reverted to the original wording.

*Alignment of the longitudinal planes.* Industry needed to internally consult the feasibility and consequence.

Conclusion: value of 0.2m in [ ] and be revisited at the GRVA session of May 2024, via an appropriate informal document.

*force-based triggering of the ACPE:* discussions as to whether these should be addressed into the requirements section or the boundary conditions section. Industry suggested to remove iv and v and transform them to general performance requirements since they are no “boundary conditions”. Conclusion: new general provisions in the beginning of the paragraph 5.1.1. + sub-numbering to articulate the cross-references.

*Item d(i):* removal of the reference to a passenger car M1 since the obstacle could also be a wall. Replacement of “driving lane” by driving direction

The group agreed to c/p the wording of the last version of the UN R152 (Suppl.03 to the 02 Series of amendments) for the *conditions deviating from the boundary conditions*.

Debates on the *acceleration control with and without the system*.

Conclusion: J-NCAP 50% distribution point for the 00 series. For the 01 Series, review the provisions. .

*Functional performance evaluation test* ; Evaluation of acceleration suppression function

Criteria : Speed reduction rate “30% or more” at obstacle position depend on OEM declaration (Select distance; from 1.0 to [1.5] m)

At 30% speed reduction the energy will be halved.

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

*Short term deactivation warning*: concern in the group that the driver may be confused if the system is temporarily deactivated, then long term deactivated. Agreement to remove the reference to the new par 5.2.4. and to remove the paragraph 5.2.4.

*Long term deactivation*:

- Annoyance of the warning
- Can the ACPE be partially de-activated? It would then be a short-term deactivation. However, this could also be a “long term” deactivation.
- No help when a person is annoyed because he several times deactivated the ignition, rather this is of some help in some conditions. Debate on the frequency of warnings. The driver should not be “patronized” yet not be annoyed. Change of driver is a case to address, need to avoid too sporadic warnings.
- Debate on 5 vs. 10 seconds: J informed that the bulb check makes 5 seconds, hence 10 second permits the driver to see the information isolated, when the bulb check is terminated. The Industry claimed that the other system checks are currently illuminated during 5 seconds and having the ACPE deviating from there would create confusion.
- In (a), the failure warning signal may be used to indicate the system deactivation.

Conclusion: text re-formatted, the information must be given during at least 10 seconds, at least every 7 days or 10 run cycles. Information to the driver according to the driving direction selected.

Other methods to discriminate the information: OICA (JAMA) keen to clarify the discrimination. Such provision and flexibility exists in several regulations.

*Automatic deactivation*.

Text refers to UN R152.

The chair and UK questioned the relevancy of the examples, when they are too much related to the AEBS. The group adapted the examples to the ACPE.

J was keen that there is a driver warning, e.g. inspired from the short term deactivation.

*Paragraph 5. 2.3.1.3.*: need to make a decision as to remove the paragraph as it seems unnecessary

*Paragraph 6.2.*

The UK challenged the requirements to pre-condition the brakes since this would be a condition for the manufacturer to let the technical services conduct the tests. There are already performance requirements that mandate the braking system to be capable to perform sufficiently well to meet the requirements. The UN R152 concern was that the brakes are too hot to perform the test. OICA requested internal consultation.

Conclusion: paragraph to be deleted subject to confirmation by Industry.

*Paragraph 6.3.1.*: the chair suggested deleting the last sentence of the paragraph since the test procedure is self-explanatory.

Conclusion: last sentence deleted. The reference to the ISO standards was improved to let the manufacturer make the choice.

*Paragraph 6.4.*:

- item to be reviewed on 29 February
- Target positioning: the UK proposed a wording representative of the real situation. Amendments are aimed at having specific and objective criteria for determining the start of accelerator control input. The group led lengthy debates about the positioning of the target and the tolerances.

R152.02, Suppl.3 (flexibility for the technical services to test at speeds deviating from the prescriptions): Tests shall be conducted with a vehicle travelling at speeds shown in the tables below for respectively M1 and N1 Categories. If this is deemed justified, the technical service may test any other speeds listed in the tables in paragraph 5.2.1.4. and within the prescribed speed range as defined in paragraph 5.2.1.3.

The chair requested the contracting parties to propose a test procedure.

J: concern on the wording to reach the 100%.

Proposed test procedure

- Position the vehicle
- Hold the vehicle stationary and select the driving direction
- Accelerate the vehicle (triggering conditions with pedal speed and move) before 0,5 km/h per the J-NCAP protocol
- Record the speed

Annex 3, Appendix 1: deletion of the Type approval Authority signature since they are not responsible for this test report signature.

## 8. Discussion for draft proposal (01 series) of ACPE regulation based on the result of 5<sup>th</sup> IWG

Document: ACPE-05-06 (Chair and Secretary)  
ACPE-06-05 (UK)

## 9. Extension of TOR

Document: GRVA-15-07/Rev.3

The group reviewed document GRVA-15-07-Rev.3

- Other categories: addition of “and other categories” in paragraph 1 to anticipate the wish of some contracting parties to permit approval to categories other than M1N1.
- GTR: proposal to re-structure paragraph 2 of the terms of reference
  - o Technical amendments (creeping test procedure) for test procedure and requirements.
  - o Consider application of the regulation to other categories i.e. assess the necessity and the feasibility to include some other M/N categories into the scope of the regulation.
- The chair was keen to anticipate a 03 Series of amendment to capture the possibility to respond to future wishes of the contracting parties about the evolution of the accidentology. However some members challenged this approach since there was no sign in the IWG nor at GRVA of a wish from any contracting party to go further, and hence no mandate from GRVA in this direction. Industry had no clue as to whether e.g. extending the functioning speed of ACPE to higher speeds was even feasible.

## 10. Other business

Application of ACPE at national level

J: no official decision to date, yet high probability they will mandate ACPE in its 00 series.

UK: no decision, will probably wait for the outcomes of the 01 series

ROK: not decided, K-NCAP will introduce ACPE in 2025, will see the next steps after.

## 11. List of action items and next meetings

1. value of 0.2m in [ ] and be revisited at the GRVA session of May 2024, via an appropriate informal document.
  2. Align the wording of “accelerator control misapplication” throughout the text of the draft
  3. Re-numbering the text to clarify the wording
  4. Reference to force-based triggering of the ACPE into the Introduction to show the regulation intents to be technology neutral; revision of the whole Introduction – see also J document ACPE-06-12 (J)
  5. Long term deactivation structure
  6. Paragraph 5. 2.3.2.: need to make a decision as to remove the paragraph as it seems unnecessary, subject to Industry revision
  7. Instrumentation accuracy (UK)
  8. UK to provide suggestion for a text to include into the terms of reference for the 02 series.
- ACPE-07: Tuesday 26 March 8-10 am CEST – all to share their contribution by Friday 15 March 2024
  - ACPE-08: 17-21 June in Asia
  - ACPE-09: 18-20 September in Germany
  - ACPE-10: [21-25] October – virtual
  - ACPE-11: January 2025 (before GRVA session)

Request that the boards of ACPE and ADAS IWGs liaise to best coordinate the respective meetings.

**Teams links:**

**27 February**

[https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_NDUzNDA5ZjktYjdhNy00M2UyLWlzMtctMzQwOTVIMjc3YjU5%40thread.v2/0?context=%7b%22Tid%22%3a%2228b782fb-41e1-48ea-bfc3-ad7558ce7136%22%2c%22Oid%22%3a%2207bfe73-45c7-44f1-b98c-9101a74888ea%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_NDUzNDA5ZjktYjdhNy00M2UyLWlzMtctMzQwOTVIMjc3YjU5%40thread.v2/0?context=%7b%22Tid%22%3a%2228b782fb-41e1-48ea-bfc3-ad7558ce7136%22%2c%22Oid%22%3a%2207bfe73-45c7-44f1-b98c-9101a74888ea%22%7d)

**28 February**

[https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_YTE1Y2U1ODMtOWFhMi00OGM4LWE3MzMtZTI1NmZkYmIyNjMw%40thread.v2/0?context=%7b%22Tid%22%3a%2228b782fb-41e1-48ea-bfc3-ad7558ce7136%22%2c%22Oid%22%3a%2207bfe73-45c7-44f1-b98c-9101a74888ea%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_YTE1Y2U1ODMtOWFhMi00OGM4LWE3MzMtZTI1NmZkYmIyNjMw%40thread.v2/0?context=%7b%22Tid%22%3a%2228b782fb-41e1-48ea-bfc3-ad7558ce7136%22%2c%22Oid%22%3a%2207bfe73-45c7-44f1-b98c-9101a74888ea%22%7d)

**29 February**

[https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_MmI5ZmEyZTQtMTM5ZS00ZGUxLWE1MjUtYWQ4MjlyNTFhMTU2%40thread.v2/0?context=%7b%22Tid%22%3a%2228b782fb-41e1-48ea-bfc3-ad7558ce7136%22%2c%22Oid%22%3a%2207bfe73-45c7-44f1-b98c-9101a74888ea%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_MmI5ZmEyZTQtMTM5ZS00ZGUxLWE1MjUtYWQ4MjlyNTFhMTU2%40thread.v2/0?context=%7b%22Tid%22%3a%2228b782fb-41e1-48ea-bfc3-ad7558ce7136%22%2c%22Oid%22%3a%2207bfe73-45c7-44f1-b98c-9101a74888ea%22%7d)