DRAFT AGENDA

Informal working group on Advanced Emergency Braking System for Heavy Duty Vehicles

30, June and 1st July 2021
MS-TEAMS meeting

Venue and Time:

- 30 June: Here
  Start at 10:00 am CEST (5:00 pm JST – 9:00 am BST)
  Finish at 1:00 pm CEST (8:00 pm JST – 12:00 BST)

- 1st July: Here
  Start at 9:00 am CEST (4:00 pm JST – 8:00 am BST)
  Finish at 12:00 am CEST (7:00 pm JST – 11:00 BST)

1. Welcome and Introduction

2. Approval of the agenda

Document: AEBS-HDV-05-01-R1 (Chair)
Adopted without any change

3. Adoption of report of the last meeting

Document: AEBS-HDV-04-09 (Secretary)
Adopted without change

4. Discussion about Performance Requirements for AEB-Vehicle-Car

Document: AEBS-HDV-04-06-Rev.1 (Chair and Secretary)
AEBS-HDV-04-08 (Chair and Secretary)
AEBS-HDV-05-02 (OICA/CLEPA)
AEBS-HDV-05-03 (OICA/CLEPA)

Process: Industry present document AEBS-05-03 to table the points of discussion.

4.1. Brake delay time (pneumatic braking)

4.2. Time to 1g – LCVs with hydraulic braking

J: M2s are mainly city use (school buses), but some are used on highways. Same for N2 are for highway. Hence questioned the OICA assumptions.
J:

- questioned the 1.7s proposal.
  - Why taking the average of current technology since the regulation addresses the future vehicles with further development?
  - How was the average calculated? Seems it should be (see manufacturer a and manufacturer b).
- Hence questioned the 35 km/h vehicle speed avoidance, seems too low. OICA proposes 68 km/h speed avoidance on HCVs with pneumatic brakes.
- In addition, the high values are proposed for stationary target with current technology.
- Hence 40km/h should be a minimum for city case, and higher for highway.

OICA:

- The state of the art shows a T1G of 2,5s. 1,8s would be a challenge for those manufacturers.

- Average calculation: the objective is to chose a challenging (but feasible) value for the worst vehicles.
- About speed (35kph): look at R152 for M1N1: 38 km/h speed reduction. Quite consistent.
- LCVs vs. HCVs: LCVs are Row2 vehicles. The requirements are very different for Row1 vs. Row2. This reflects reality
- Questioned the Slide 5 of AEBS-HDV-05-05: why do the N2 unladen avoid the child but do not brake for the adult?

4.3. City vs highway driving

4.4. M2N2 derived from M1N1

Chair: what about the Industry proposed trade-off (vehicle speed for M2N2 in V2C vs. performance requirements on V2P and V2B)
N: need to check. Also problem in N with 2-axle vehicles.
J: is the OICA proposal: full R152 vs. full R131? Cannot accept cherry picking.
OICA: yes, take the whole of each regulation. No cherry-pick. The choice of the manufacturer will always be based on the dynamics of the vehicle (technical choice). The proposed trade-off reflects the accident data. MB Sprinter and VW Krafter are the typical vehicles in EU (lighter M2N2s)
Conclusion:

- Contracting parties to check their domestic accidentology

4.5. Solo tractors

Adding in the table the deceleration reached in case of unladen tractor?
Chair: opinion of the contracting parties?
Chair: will present some slides on 1 July (adding the level of deceleration we can reach)
CLEPA: always a problem
NL: what is the value when tilting?
OICA: around 5,5 m/s². Depends on the parameters. (G, rear axle load, Alpha value, etc.). the rear axle ABS activation will automatically decrease the front axle pressure. The control loop determines the highest deceleration, yet always > 5 m/s².
NL: wondered the necessity of the test with added load since it does not reflect real world situations.
OICA: the proposal is for the sake of simplicity. The problem does not deserve too much complex solution.
FIN: supported approach proposed by OICA
Conclusion:

- Chair to produce slides with UTAC

UTAC and the chair subsequently presented the
Check of avoidance speed in empty conditions:
Support: NL, D,
Challenge: CLEPA, J, (need for decreased performance requirements for those vehicles)
OICA: in practice, a load holder is added to the empty tractor, and this takes some time. Hence easier to test all cases with this frame. The truly empty case is anyway tested per UN R13
Conclusion:

- Secretariat to distribute the presentation
- Agreement on principle of defining the requirement
- Still unclear if and how to be tested
- Will be addressed with the test section discussions
- Comments to be addressed until next session.

4.6. Speed range

Chair: what about OICA proposal to decrease the LCV speeds to 10-60 in UN R131?
J: opposed. Currently up to max design speed. Very big relaxation. Strongly against this proposal.
Chair: will be difficult to advocate this at GRVA (remove the requirements at high speeds)
N: as J, cannot support.
OICA: in current R131, the row1 and Row2 vehicles have totally different requirements. OICA wanted to highlight that the requirements are far more severe for HCVs vs. the LCVs.
Chair: item linked to the alternative R152/R131 in item 4.4. above.

4.7. Vehicle longitudinal centre planes (offset)

Spirit at R152: +/- 0,2 m
Possible clarification: "In situations where the vehicle longitudinal centre planes are displaced **to each other** by not more than 0.2 m;"

4.8. Follow shark fin curve up to 110

Slide 21: check the figures in the table
Chair: opinion of the contracting parties?
J: will propose a position on 1 July. Max speed in J is 110 km/h
UK: will present a position on 1 July

4.9. Review of document AEBS-HDV-05-02

- Introduction: to be re-written at the end of the process
- Scope: to be reviewed until next meeting
- Different types of vehicles: no discussion, wording adopted
- Good adhesion: J will comment this at next GRVA (September 21) session. conclusion: to be aligned on GRVA decision. There may be specifics for HDVs
- Mass of a vehicle: conclusion: Industry to propose a wording
- "derived from": conclusion: informal group to make a decision
- "empty load conditions: no need. Will probably be deleted when the group arrives to the performance section
- Information: changes adopted
- 15 seconds initialization phase: Industry is currently cross checking the value.
- 5.1.6. (false reaction test): Industry is currently investigating the relevancy for HDVs. Conclusion :Industry to check until next meeting.
- 5.1.8. (short wheelbase vehicles): proposed new wording. New wording almost adopted. Industry keen to avoid extra test. Yet no formal test, test would be elaborated by the Technical Service when there is a doubt.
- 5.2.1.1. (collision warning):
    - OK with clarification of reference to the test conditions
    - Collision with preceding vehicle of category M1: chair challenge the M1 since in D, the accidentology is on trailers.
        - Could be covered by "don't change the control strategy"
        - Could also be covered by "within the test conditions specified in paragraph 5.2.1.4."
        - Chair keen that the group come back to this item
        - Conclusion: will be further checked about collision with other categories.
    - "this may be tested…": The change of strategy has no test method, hence need for guidance to market surveillance and AAs to test them.
        - JRC:
        - CLEPA: market surveillance? What's the relationship?
        - JRC: R858 "market surveillance" should be a repetition of the Type Approval test, hence need for a link to that in the regulation.
        - OICA: then this becomes a guideline rather than requirement. Concern to disharmonize all for getting something more. Industry have doubts on both the wording and the intention (the goal)
        - Chair: need the possibility to check anything specified in the regulation. Need to highlight this issue
        - Secretary: this sentence is structural to the regulation: makes the link between the performance requirements section and that of the test method. Hence, the issue of testing outside of the test method section should be addressed elsewhere.
        - Conclusion: IWG to review the wording to best capture the concern, for next meeting
- 5.2.1.2.
    - 4 m/s^2: conclusion: adopted

- "this does not prohibit": check whether there is a limitation of the deceleration during the warning phase. conclusion: to be reviewed at next meeting
- Deceleration demand reduction: concerns from FIN. Conclusion: to be reviewed at next meeting
- "this may be tested…": conclusion:
  - To be mioved to the right place
  - to be reviewed (as in paragraph 5.2.1.1.)

- 5.2.1.3.
  - J: keen to make the system active up to the maximum design speed.
  - Conclusion: speed range adapted: back to current text of R131 i.e. "up to maximum speed"
- 5.2.1.4.:
  - Good adhesion: adopted
  - Trailer coupled: adopted
  - (f) detection capabilities:
    - FIN: what is the purpose? Aims to address some weather conditions like deep fog etc.
    - NL: need to warn the driver of the decreased performance capabilities, the driver may decide to switch off the AZBS due to multiplication of false positives. OICA: for such emergency system, the driver should not base his driving behaviour on the presence of the AEBS. No driver will deactivate the AEBS when there is fog.
    - J: comment on all additions to the paragraph: we should limit this list as much as possible since it limits the aera of good functioning of the AEBS. In R152, ther are only 5 items, we are here adding more items, this makes the AEBS-HDV less safe than that of passenger cars.
    - OICA: the criterion is whether the items are relevant, no problem of length of the list. Either we add these items to the list, or we let the to the discussions with Technical Services.
    - Secretariat: when the R152 team decided to follow the route of the list of conditions, it was aware and expecting further additions with the time and experience.
    - OICA: somehow, it is logical that the technology should provide the expected performance.
    - Conclusion: to be reviewed at next meeting.
  - (h):
    - Difference between and of traffic jam and end of traffic jam
    - To be reviewed for next time
  - (i): to be reviewed at next meeting. NL: proposal makes sense since will be difficult to check since ABS intervenes in these conditions;
  - (j): to be reviewed at next meeting

5. Discussion about performance Requirements of VRU

Document: AEBS-HDV-04-06-Rev.1 (Chair and Secretary)
AEBS-HDV-04-08 (Chair and Secretary)
AEBS-HDV-05-02 (OICA/CLEPA)
AEBS-HDV-05-03 (OICA/CLEPA)
AEBS-HDV-05-05 (Japan)

5.1. Safety zone for HDVs in „real life" conditions

5.2. V2P Japanese presentation AEBS-HDV-05-05

OICA: Slide 7: what is the trigger? The pressure time and delay are unbelievable (0,3s to reach 9,8m/s²). J: figures are coming from JAMA.
CLEPA:

- Camera only? Fusion? J: Fusion (combination)

- Are the AEBS designed for C2C or for both C2C and C2P? J: according to the manufacturers the test vehicles are designed for V2C and V2P, but pedestrians are "stationary".

6. Discussion about standardized marker to trigger AEB intervention

Document: AEBS-HDV-05-04 (Netherland)

Document presented by NL
Timeline (EuroNCAP took 3 years for making such study): proposal for a target for beginning of September. Will keep the interested experts informed.
OICA: proposed that ISO be involved. Such marker definition and standardization is of benefits to the whole community. OICA will approach TNO on this.

7. Other business

8. Next step

Review of timing for IWG activities

Keen to have 2 iterations until next meeting: group to provide comments to the chairs, who consolidate the text, then distribute it to the group again for further iteration
Request to postpone the next meeting to Second half of September (week 38 starting with 20 September)

Conclusion: GRVA-AEBS-HDV-06 to be held on 21-22 September 2021