

**Amendments to the draft AEBS
(based on AEBS skeleton mitigation Rev.2 Add. AEBS-M),**

A1. PROPOSAL

Paragraph 5.1.1. amend to read;

5.1.1. Any vehicle fitted with an AEBS-M complying with the definition of paragraph 2.1.1. shall meet the performance requirements contained in paragraphs 5.1 to 5.6.2. of this Regulation [when used in highway conditions] and shall be equipped with an anti-lock braking function [in accordance with **the performance requirements of Annex 13 of Regulation N°13**] ~~[and a Vehicle Stability Function]~~ ~~[in accordance with Annex 21 of Regulation N°13]~~.

B1. JUSTIFICATION

- (1) ABS secures the fundamental stability during emergency braking. Therefore ABS is must. Main purpose of the EVSC is to assist the driver to keep the direction intended during driving on the curved road. During the emergency braking EVSC only potentially gives some additional improvement to the vehicle behaviour. Therefore EVSC might be preferable for AEBS but it should not be mandatory.
- (2) Exemption of EVSC is wider than ABS. If EVSC is mandated for AEBS, exemption of AEBS would get wider than expected minimum area of the vehicle category. Therefore it is not appropriate to mandate the adoption of EVSC.

A2. PROPOSAL

Paragraph 5.3.1. amend to read;

5.3.1. The AEBS-M ~~[may /shall]~~ provide the means for the driver to interrupt the collision warning phase.

B2. JUSTIFICATION

It is improper that this paragraph for being overridden includes “shall”, because there is a possibility that a driver cannot notice the warning. And the warning requirement should include “may” because they do not influence a vehicle’s movement. The warning being overridden is not defined in ISO, either.

A3. PROPOSAL

Paragraph 5.3.1. amend to read;

{5.4.3. The AEBS-M-off control switch shall have measures which discourage the driver to operate the switch easily.} **e.g. A push and hold operating switch, a switch with a lid, a second layered switch, a switch located not to be reached easily by the driver in the his/her seat or two switches that need to be operated simultaneously, etc.**

B3. JUSTIFICATION

For better clarity.

A4. PROPOSAL

Paragraph 6.6.4., 6.6.5., 6.7.4. and 6.7.5. amend to read;

{6.6.4. The Emergency braking phase shall not start before TTC reaches down to 3.0 seconds.}

{6.6.5. The maximum braking demand ~~for N-category~~ shall be equal to or more than 4m/s^2 }

{6.7.4. The Emergency braking phase shall not start before TTC reaches down to 3.0 seconds.}

{6.7.5. The maximum braking demand ~~for N-category~~ shall be equal to or more than 4m/s^2 }

Justification

ACC, AEBS -> The same hardware in use

➔ ACC: In ordinary situations

➔ AEBS: In emergency situations

AEBS should be activated only in emergency situations.

If the system is activated only in emergency situations, rarely happen, the over-reliance does not occur to a driver.

1

Justification

Drivers' action

<In ordinary situations>

- A driver operates the avoiding maneuver while TTC is long.
- A driver does not operate braking with a high deceleration.

<In emergency situations>

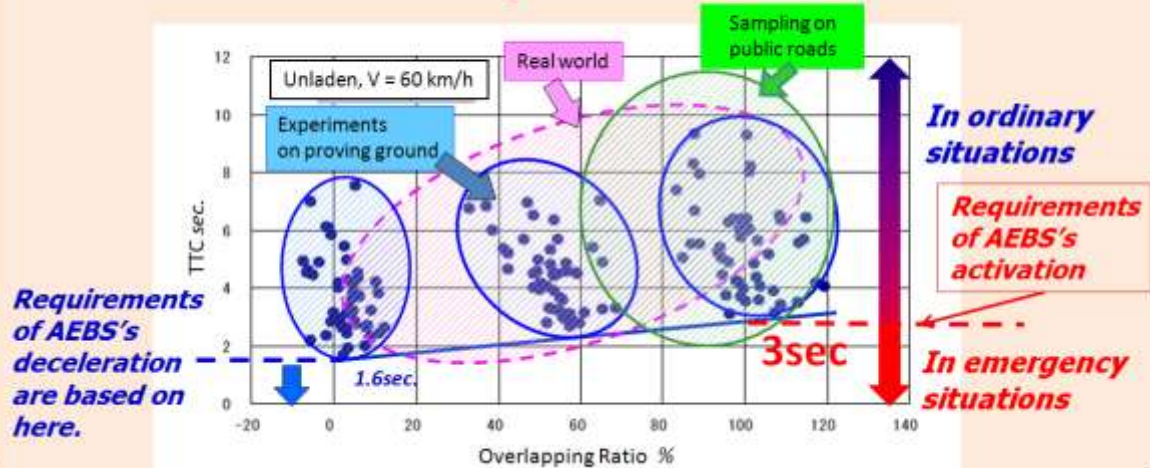
- A driver operates the avoiding maneuver after TTC becomes short.
- A driver operates braking with a high deceleration to reduce the damage or to avoid a collision.

2

Justification

- **Most drivers operate braking to avoid a collision at the earlier time than 1.6s at most of overlapping ratio.**
 - ➔ There is no interference with drivers' operations.
 - ➔ The speed reduction of Japan proposal is based on 1.6s.
- **Most drivers operate braking to avoid a collision at the earlier time than 3.0s in conditions of overlapping ratio 100%.**
 - ➔ It is the number which distinguishes an ordinary driving from an emergency operation to avoid a collision.

Drivers' avoiding maneuver for forward obstacles



Justification

- If the system is activated only in emergency situations, the over-reliance does not occur to a driver.
- TTC equal to or less than 3.0s is for a definition of the emergency area.
- If AEBS is activated in other situations except emergency, it is a problem because it affects other traffic.