

Japan stance to the AEBS and Questions

All the participants to the informal group improved their understanding of the AEBS performance requirement through the extensive discussion. However there are still several items on which contracting parties have different points of view.

The following comments and questions to the contracting parties have been prepared to stimulate a constructive discussion on the remaining open issues. We believe this could contribute to move the issue forward .

1. Automatic braking performance requirement

1-1. Intervention to the driver's maneuver

[Stance]

- (1) Japan fully understands that the bigger speed reduction by the automatic braking of the AEBS is preferable for the safety, however at the same time, believes that the AEBS should not disturb the normal operation of the driver and cause the unsafe situation or lose the driver's acceptance. Therefore, it is not appropriate that the AEBS starts the automatic brake application when there is a possibility of overlapping with the driver's operation to avoid the collision even if the overriding option remains for the driver.
- (2) The regulation should not make it inevitable that the AEBS often intervene in the driver's maneuver by demanding the too high performance. The override concept is to give the priority to the driver's operation which the driver determines safer than the functioning of the AEBS, and should not be used as the excuse for the frequent unnecessary brake application. Therefore, it is not appropriate to take the requirements which can be fulfilled only by expecting the driver's overriding reaction to compensate the unnecessary brake application in certain conditions.
- (3) In principle, safe driving is the driver's duty, however it is not appropriate to engage the driver in the responsibility of the accidents caused by the brake application of the AEBS which the driver does not perceive to be the suitable assist.
- (4) From the view points above, Japanese proposal of the performance requirements are appropriate.

[Questions to the contracting parties]

- (1) Do you intend to accept that the AEBS brake application intervenes the maneuvers by the driver in ordinary condition?
- (2) How did you prove that the speed reduction performance requirement does not result in generating the interference to the ordinary driving?
- (3) Do you pursue the driver's responsibility for the accident caused by the AEBS brake application which the driver does not perceive to be appropriate?

- (4) Who or What do you think needs to take the responsibility if an accident happens as a result of the AEBS intervention to the driver's maneuver?
- (5) How about the experiences of the system in mass production in Europe? What is the rate of unnecessary warnings or brake applications of the AEBS between the open road and the motor way? What is the rate of unnecessary warnings or brake applications of the AEBS among the countries? Have you found any specific place where the AEBS works without a need? (to OICA?)
- (6) Did you intend to introduce the override provisions to prevent the unnecessary brake application by the AEBS?

1-2. Description of the braking performance requirement

[Stance]

- (1) We oppose the description of "collision avoidance" and support "speed reduction of XXkm/h". If the regulation uses the expression of "collision avoidance", the users or the public may understand that the collision can be avoided by the AEBS in the real field at any speed.

[Questions to the contracting parties]

- (1) If the proposed requirement that the speed reduction shall be at least 70km/h when tested by the subject vehicle speed of 80km/h and the target speed of 10km/h is taken, which do you intend to use "collision avoidance" or "speed reduction of 70km/h"? The users possibly have the excessive expectation that the collision is avoidable at any vehicle speed in case "collision avoidance" is used in the regulation. What do you think about this?

1-3. Test speed

[Stance]

- (1) Two subject vehicle speed tests, 80km/h as the representative of the motor way and 50km/h as one of the open road, is preferable.

[Questions to the contracting parties]

- (1) Is the understanding that the reason to have taken subject vehicle speed of 80km/h and the target speed of 10km/h is to represent the severest situation correct? If yes, what is the reason why you determined that this is the severest?
- (2) In case that one actual test is taken for the type approval supported by the investigation of the documentation to confirm the performance at the other condition, how do you conduct the document investigation?

2. Warning

[Stance]

- (1) As a minimum requirement for the regulation, from the consideration on the driver response time and frequency of false and/or unnecessary warnings, it is concluded that warning time of 0.8 second before the activation of the emergency brake is most appropriate.
- (2) Earlier initiation of the warnings may result in frequent false and/or unnecessary warnings, and leads driver to use the off-switch frequently. This may lose the driver's acceptance for the system. This goes against the purpose of mandating the system on vehicles.
- (3) Warning has two functions; to induce the driver to take an avoiding maneuver and to inform the driver that the automatic emergency braking will be activated. It would be appropriate to use a common value for all vehicle categories, both for moving target and stationary target, and for both high speed and low speed range, in the regulation.

[Questions to the contracting parties]

- (1) Please provide the evidence that 2 seconds before the activation of the emergency brake is appropriate in Europe.
- (2) What is your opinion for the stance that one common value should be used for all vehicle categories, both for moving target and stationary target, and for both high speed and low speed range?
- (3) Regarding the above, what is your opinion for the warning timing on different conditions compared to type approval tests? In low speed range, would you permit later warning timing or non activation of the warning?

3. Off-switch

[Stance]

- (1) Reason of allowing the off-switch for AEBS in the regulation is that there are some cases that it is necessary to cancel the system activation in the emergency case, such as the sensor get some failure or damage and system does not work correctly.

[Questions to the contracting parties]

- (1) What is your stance on our opinion that the usage of the off-switch shall be limited for the situation such as sensor fails or is damaged so that the system does not work correctly?
- (2) According to the Owner Manual of certain manufacturers, it is recommended to use the off-switch as a countermeasure to the unnecessary activation and also as a method for the override by the driver. If the switch is located in a place easily accessible, then usage frequency will increase. What is your opinion?