

Proposal of the Warning Timing for AEBS

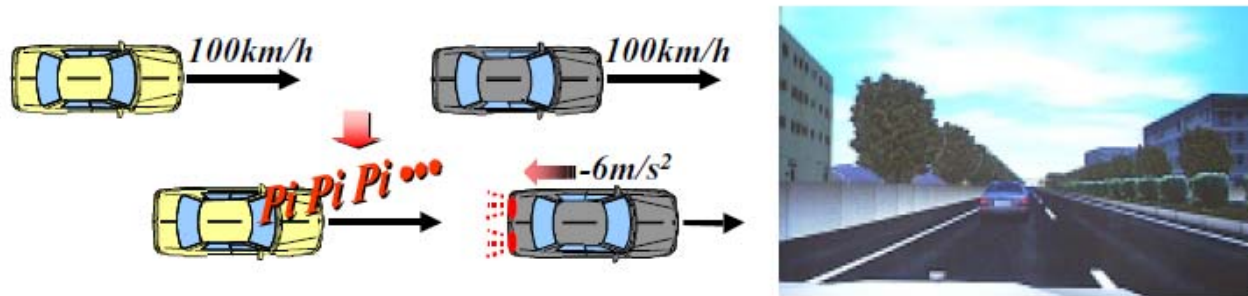
1. Proposal of Warning Timing

- 1) Warning for AEBS shall be given at least 0.8 second before the activation of emergency brake.
- 2) Since the warning timing is based on the driver response time, common value of warning timing shall be used for
 - ① Vehicles in all categories
 - ② Both moving and stationary target
 - ③ Both high speed and low speed range

2. Driver Reaction Time

Study on Driver Reaction Time in FVCWS (1999, JARI)

- Experiments on driving simulator
- 20 panels
- With different sleepiness level



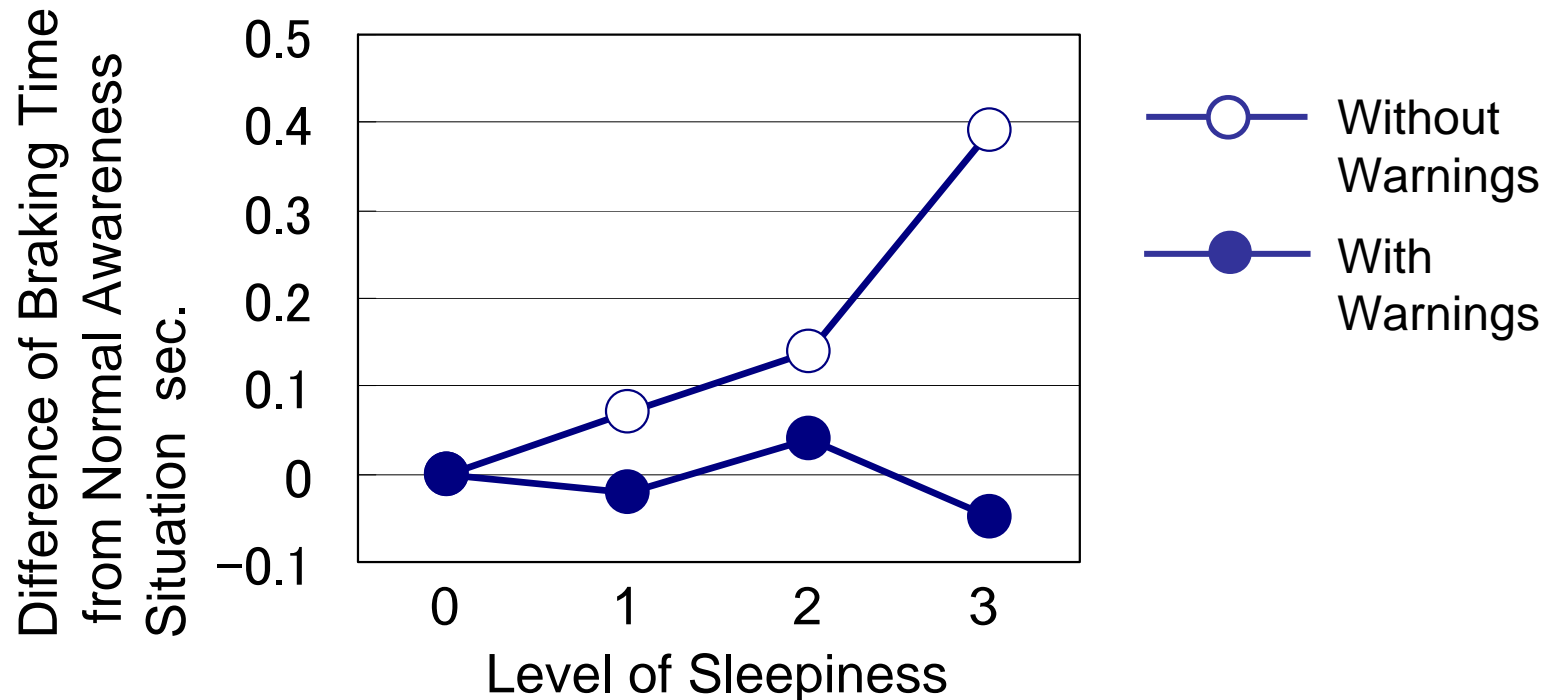
Experimental Scenario

Rating	Sleepiness	Concrete sleepiness level
0	Not at all	No sleepiness, fully conscious
1	Slightly sleepy	A little sleepiness, no influence on driving
2	Sleepy	Obvious sleepiness, manage to drive somehow
3	Very sleepy	Dangerous sleepiness, generally unable to drive

2. Driver Reaction Time

Result 1: Braking Time from Preceding Vehicle's Deceleration

- Without warnings, the braking time increases with the level of sleepiness.
- With warnings, the braking time does not increase.



2. Driver Reaction Time

Result 2: Driver Reaction Time

- When drivers are sleepy (level 2 - 3), average reaction time is 0.75 sec..

