

KOREA AUTOMOBILE TESTING & RESEARCH INSTITUTE

# GTR 13 Phase 2 8<sup>th</sup> IWG meeting-TF1

**TS** Korea Automobile  
Test and Research Institute



## Suggestion (From OICA)

4.3. In case a contracting party under the UN 1998 Agreement requires a crash impact simulation (Sled Test) the procedure set out in paragraph Z shall apply and the provisions in paragraph 5.2.2.3. shall ne used for compliance

### Post Crash provisions in GTR13 – (3/3)

...

Z: Crash simulation test

~~In case that one or both of the vehicle crash tests specified above are not applicable to the vehicle, the vehicle fuel system shall, instead, be subject to the relevant alternative accelerations specified below and the hydrogen storage system shall be installed in a position satisfying the requirements in paragraph ..... The accelerations shall be measured at the location where the hydrogen storage system is installed. The vehicle fuel system shall be mounted and fixed on the representative part of the vehicle. The mass used shall be representative for a fully equipped and filled container or container assembly.~~

Accelerations for vehicles of categories M<sub>1</sub> and N<sub>1</sub>:

- (a) 20 g in the direction of travel (forward and rearward direction);
- (b) 8 g horizontally perpendicular to the direction of travel (to left and right).

Accelerations for vehicles of categories M<sub>2</sub> and N<sub>2</sub>:

- (a) 10 g in the direction of travel (forward and rearward direction);
- (b) 5 g horizontally perpendicular to the direction of travel (to left and right).

Accelerations for vehicles of categories M<sub>3</sub> and N<sub>3</sub>:

- (a) 6.6 g in the direction of travel (forward and rearward direction);
- (b) 5 g horizontally perpendicular to the direction of travel (to left and right).

A calculation method can be used instead of practical testing if its equivalence can be demonstrated by the applicant for approval to the satisfaction of the Technical Service.

Copy from UN Regulation 134  
Copy from UN Regulation 110  
Copy from UN Regulation 134&110

## TF1 Webmeeting (27<sup>th</sup>, Aug.)

### ■ NHTSA/US

Acceleration values doesn't seem appropriate. There have been a couple of impact test. It show that Acceleration value is higher than Paragraph Z in HDV. Need more Study

### ■ Result

Not enough well-founded proof of Acceleration, wait for EC Study of Acceleration values.

TF1 Leader is going to Request EC for Result or Schedule of Acceleration values Study

## Co-sponsor meeting (29<sup>th</sup>, Sept.)

### ■ EC

Study for acceleration, Fuel leakage limit and Calculation method is going on. Expected to be done by end of 2020.

# 02 TPRD Direction

## Proposal

- Upwards within 20°, downwards within 45°
- Delete ambiguous expressions such as “forward, horizontally, back, side”
- Additional prohibited directions.
  - REESS, exits

Storage system TPRDs. With the vehicle on a level surface, the hydrogen gas discharge from TPRD(s) of the storage system shall be directed upwards within 20° of vertical relative to the level surface or downwards within 45° of vertical relative to the level surface. Additionally, the hydrogen gas discharge from TPRD(s) of the storage system shall not be directed:

- (i) Into enclosed or semi-enclosed spaces;
- (ii) Into or towards any vehicle wheel housing;
- (iii) Towards hydrogen gas containers;
- (iv) ~~Forward from the vehicle, or horizontally (parallel to road) from the back or sides of the vehicle.~~
- (iv) Towards the vehicle’s REESS
- (v) Towards any exit(s)

## TF1 Webmeeting (27<sup>th</sup>, Aug.)

### ■ Result

No any opinion.

Review Proposal in 8<sup>th</sup> IWG

# 03 Pressure cycle test(Container)

## 6<sup>th</sup> IWG Meeting

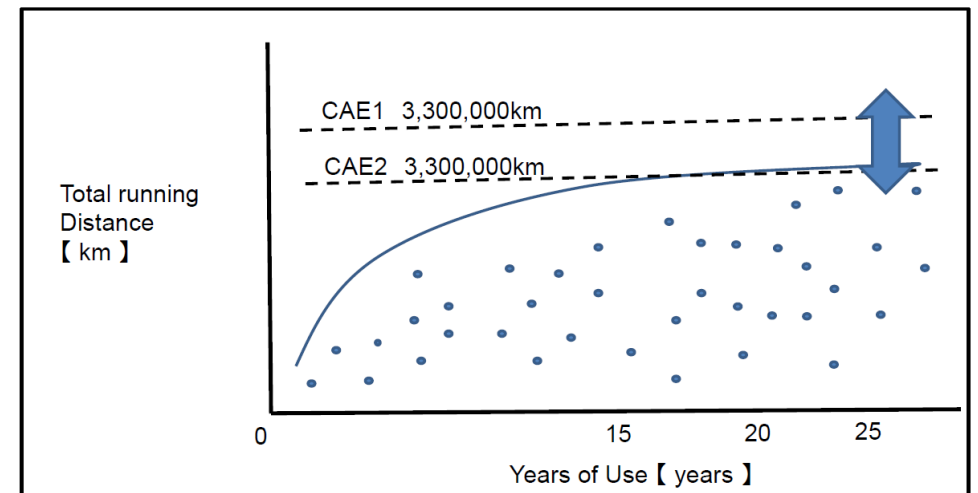
### ■ Agreement

- 11,000 test cycles and 15yrs service life in HDV
  - \*  $350(\text{working day}) \times 2(\text{refueling/day}) \times 15\text{yrs} = 10,500$
- Since Generally used more than 15yrs in HDV, Need additional Discussion for Extension of Service Life

## 7<sup>th</sup> IWG Meeting

### ■ JAMA

HDV(more than 25yrs) Mileage is less than 3,300,000km .  
11,000 test cycle can guarantee 25yrs Service Life



### ■ Result

Not enough mileage data in HDV. Discussion is needed over the long-term