

7th IWG Meeting of GTR13 Phase2

Draft Proposal to Improve GTR13 through Development of Safety Assessment Technology & Test Devices of HFC Bus

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01 Draft project plan for Improving the Safety of HFC Bus

- ✓ Title: Development of Safety Assessment Technology & Test Devices of HFC Bus
- ✓ Period / Budget : 2020 ~ 2024 / \$25 million(grant)



Goal

Development of Safety Assessment & Inspection Technology and Test Devices for HFC Bus And Its Components through Operational Data Collection to Ensure Operational Safety of HFC Bus. International harmonization of Safety Regulations of HFC Bus.



Subjects

Part1- Development of Safety Assessment Technology and Int'l Harmonization

1. Analysis of Bus accidents and develop Safety Assessment Scenarios in accidents
2. Develop Rollover/Side Impact Test Method
3. Regulations for Assessment & Int'l Harmonization

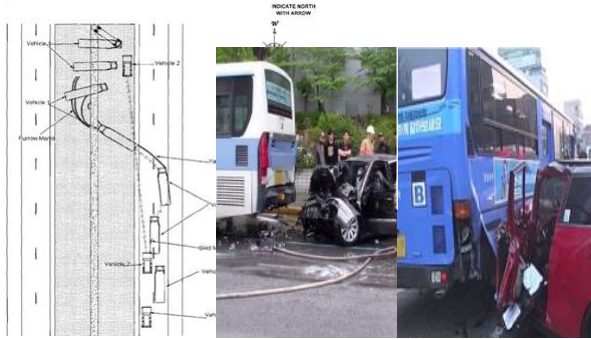
Part2-Development of Inspection Technology and Test Devices for in-use HFC Bus

1. Inspection & Test Device of Hydrogen Permeation of CHSS
2. Inspection & Test Device of Hydrogen Exhaust system in Vehicle
3. Test Method & Facilities of Power Performance

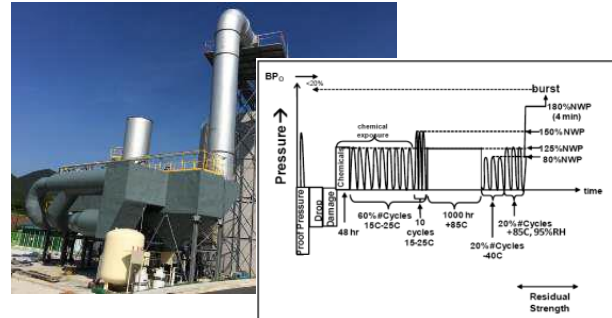
Part 3-Development of Safety Assessment Technology and Test Devices for Hydrogen Parts, Equipment

1. Safety Assessment of Fire Test of CHSS
2. Int'l Harmonization of Test Devices for Hydrogen Components
3. Develop Assessment Technology and Devices for CHSS
4. Research for the Non-destructive Inspection of Container

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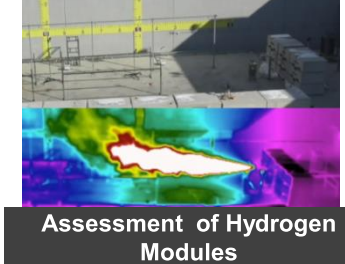
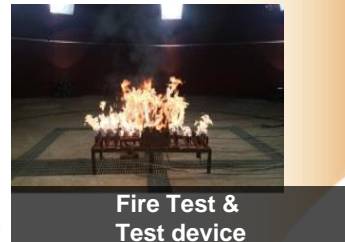
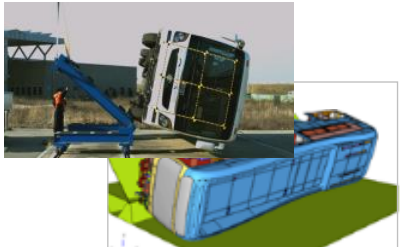
Collect & Analysis of Accident Data



Response of Domestic equipment to International Specification

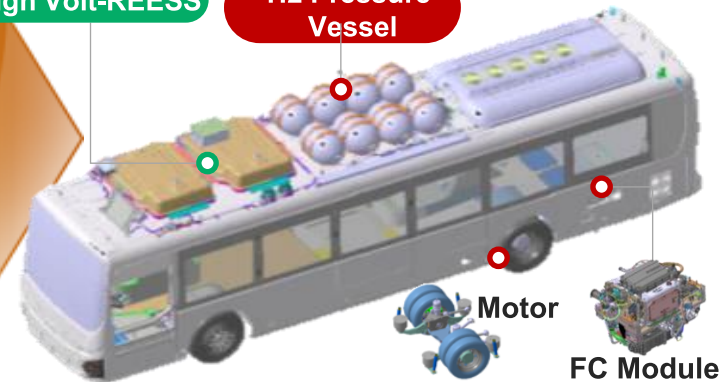


R & D



High Volt-REESS

H2 Pressure Vessel



Assessment of Crash Safety of HFC bus

Development of Periodic Inspection & Test Devices of In-use HFC Bus

Assessment of Hydrogen Component Safety, Test Devices

Secure the Operational Safety of HFC Bus

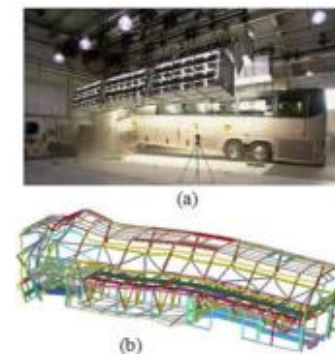
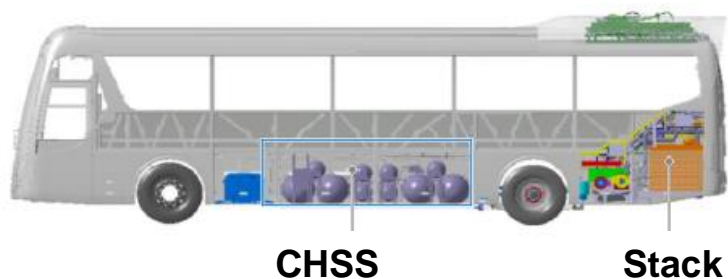
02 Draft plan to Propose Items For GTR 13

❖ Rollover & side Impact Test Procedures for Fuel System Integrity of HFC BUS

- ✓ Need to develop test procedures in detail for HFC Buses subject to rollover test and simulation verification
 - ➔➔ '21: Propose Draft Amendments for rollover test & simulation verification procedures through objective researches



- ✓ In case CHSS installed in the lower superstructure, Need to Verify the Safety of CHSS in the Event of Side or rear Impact
 - ➔➔ '23: Propose Draft Amendments through Crash Tests, Sled test, Provisional Installation Requirements, Simulations, etc.





❖ HDV CHSS Fire Test Procedures & Equipment

- ✓ **Need to Improve Assessment Technology & Test Facilities for the Fire Safety of CHSS. In addition to provide the Objectivity & Justification of Assessment Technology**

→>'20: Propose Draft Amendments for Fire Test through Researches on Improving Fire Sources(Burner, Flame Specification, etc.)

❖ Upgrade the HDV CHSS Test Procedures

- ✓ **Need to Improve Evaluation Efficiency by reducing the long test time of CHSS.**

→> '20, '21: Propose Draft Amendments by reducing the time for Pressure Cycling Tests, and shortening the time to reach the target pressure through development of test devices could be inserted in the container



Ministry of Land,
Infrastructure and Transport



Korea Automobile
Testing and Research Institute

Thank you