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13th Meeting of the Informal Working Group on Hydrogen and Fuel Cell Vehicles

Global Technical Regulation No. 13 (Phase 2)

15-17 Mar 2022 – Online

	Agenda Item	Presenters	Documents
1	**Opening Remarks**	**M. Koubek**	--
	a. The following CPs are represented: JP, KR, CA, CN, EC, UK, FR, US. b. The Chair welcomed the participants. c. The Chair noted that the former representative of the European Commission, Peter Broertjes, took new assignment in the other area at DG GROW, and appreciated his contribution for this activity. Romain Ladret Piciorus and Antony Lagrange joined the IWG as EC representatives along with Beatriz Acosta Iborra. d. The co-chair, Mr. Sato, METI Japan, highlighted the importance of this area toward the carbon neutral society.		
3	**Approval of agenda**	**M. Koubek**	GTR13-13-01
	a. The US, following the instruction from its management, requested to review some of the CP options that may cause material differences of technical requirements. TF3 does not require discussion time for this session and that time is now allocated for TF0 topics. b. The agenda is approved with above changes.		
4	**Approval of the meeting minutes of the 12th meeting**	**Secretary**	GTR13-12-12
	• Meeting minutes from the 12th IWG (GTR13-12-12) were approved.		
5	**Update of the project schedule**	**Secretary**	GTR13-13-02
	a. The Secretary introduced GTR13-13-02. b. IWG will aim for submitting informal document for by 6 May ahead of the 9-13 May GRSP and then the formal document for 5-9 December GRSP. c. The Chair noted that once the informal document is submitted to GRSP, feedback from GRSP delegates will be expected. Thus, another IWG may be held in the last two weeks of June (perhaps an in-person meeting.) d. If necessary, an additional IWG meeting will be planned for early Sep before submitting the formal document.		
6	**Taskforce 1 – Heavy Duty Vehicles**	**A. Schüßling / Daimler**	GTR13-13-04 GTR13-13-05 GTR13-13-06
	a. Annett Schüßling reported the outcomes of the latest TF1 discussion. b. Consensus has been achieved for TPRD direction, sled test and maximum service life of 25 years. c. The UK questioned about the choice of 11K cycles for 25 years. This number is based on the fleet data from various countries for the driving length and converted into the number of refueling instances. This study showed that the current requirement is quite conservative. d. TF1 noted that the direction of other PRD may need to be reviewed. i. Glenn Scheffler commented that "exposed" should be changed to "unprotected". He also reminded that such devices are located outside CHSS and therefore relatively low flow rate. Accumulation and ignition should be considered, although this was not considered as part of TF1 scope of work. ii. Graham Meadows suggested to remove this paragraph. He noted that low pressure relief vales are categorized with different terms (PRV vs PRD). iii. The Secretary noted that (b) is for TPRD under fire situations while (c) is for PRD in a non-fire situation with a small amount of discharged gas. iv. Annett Schüßling will prepare the revised document for further discussion at a later occasion during this IWG session. See GTR13-13-06.		

	e. On the Day 2, IWG agreed with the new proposal on PRD in GTR13-13-05 provided by the ad-hoc group, where para. 5.2.1.4.1. is slightly modified to cover low pressure release and instead deleted sub-para. (c) from 5.2.1.3.1.		
10	**Taskforce 4 – Fire Test Reproducibility**	**G. Scheffler / SAE**	GTR13-13-03
	a. Glenn Scheffler reported the progress of TF4. Some results of round-robin test have not been included so far. If additional data is received, they may be incorporated into the final document. However, there is enough confidence in the proposal with the data collected so far and no major changes to the test method is expected. b. The withstand option should be considered as a future issue since several factors need to be considered after the fire event. c. Yuntang He asked if the fuel parameters are defined (quality, heating value). Glenn Scheffler stated that LPG gases are used since it is widely available, but the composition of the LPG was not considered. As HRR/A is determined at each test, exact fuel specification is not necessary.		
11	**Taskforce 0 – Editing**	**I. MacIntire / NHTSA**	GTR13-13-06
	a. Ian MacIntire briefed the recent progress of TF0, where version 9 of the draft has been distributed. b. NHTSA would like to reduce the number of CP options and seek harmonization. NHTSA requested to review the following three items: c. Para. 5.1. Primary closure requirements (mounted directly on the container) and remote TRPD requirements: i. Livio Gambone noted that the on-tank primary closures requirement is mandatory for CNG in UNR110 as well and contributed for ensuring the safety and therefore (b) could be mandatory. On the other hand, (c) should be a CP option since certain CPs are in position not to allow such a system. JRC considered (a) and (b) are essential while (c) could be moved to Part I. This idea is supported by CN, JP, KR, UK, while CA made reservation. ii. GTR13-13-06 was introduced. Livio noted that 5.1 (b) (i) is already mandatory in several CPs already require primary closure mounded directly on container. The EC did not agree with the text and repeated the same view as yesterday. iii. NHTSA felt that the current provision was design restrictive and prefer to delete (b), while the EC made reservation on that idea. iv. JP clarified that it will require primary closures directly mounted on the container anyway and it will be the same for 58 Agreement contracting parties. Therefore, from the harmonization point of view, deleting (b) is questionable. KR indicated its concern on the safety of the piping to remote TPRD and that (i) is necessary. v. Livio Gambone suggested to move (b) (ii) to Part I while maintaining (b) (i) as a CP option. vi. Glenn Scheffler noted that the high-pressure line would be considered as a part of container and should be included into the CHSS tests. d. Para. 5.1. Initial burst pressure for carbon fiber composite containers i. 225% NWP for 35 MPa: The US asked if this CP option can be removed. CN wished to maintain 225% NWP for 35 MPa and suggested to require 200% for 70MPa and 225% for 35MPa. ii. CN proposal was generally supported and will be discussed again tomorrow. iii. CN commented that the data to reduce 200% for 35 MPa was not included in the original proposal while such data for 70 MPa were given. iv. The US and CN were requested to review the rationale given in the Part I of the draft. e. Para. 5.2.2. Sled test i. The US asked if this test would bring safety improvements. ii. Acknowledging the existence of sled test in UNR, it was suggested to remove from GTR Phase 2 and postpone to Phase 3. f. Para. 7. Liquid Hydrogen i. The US requested to remove LHSS section that was not revised in Phase 2. ii. However, it was noted that LH2 has been included in the EU regulation and there has been no discussion to remove this section.		
11	**Summary of meeting and pending items**		

- The informal document of the proposed amendment to GTR13 will be submitted for review by CPs for the May GRSP meeting.
- The formal document for December GRSP shall be submitted by the beginning of September.

11	**Next IWG Meetings**	**Secretary**	--

a. Cosponsors+ Meeting: 29-31 March
b. IWG #14 - Apr 25-26
c. Starting times for both meetings, two hours each
   USA: 0600 PDT, 0900 EDT
   Europe: 1500 CEST
   Asia: 2100 CST, 2200 JST/KST

14 APPENDIX: Attendees List

A. Murra Consulting	Japan/JARI	OICA/Cellcentric	Powertech Labs
Arkema Inc.	Japan/JASIC	OICA/Daimler AG	Quantum Fuel Systems
Bosch GmbH	Japan/KHK	OICA/Ford	RISE Sweden
Canada/Transport Canada	Japan/METI	OICA/Mercedes-Benz AG	Tokyo University
CEA France	Japan/MLIT	OICA/General Motors	TUV SUD
China/CATARC	Kiwa Netherlands	OICA/Hino	UK/Dept for Transport
EU/European Commission	Korea/KATRI	OICA/ Honda R&D	Ulster University
Faurecia	Linamar	OICA/Hyundai Motor	USA/Dept of Energy
France/UTAC	Luxfer Gas Cylinders	OICA/MAN EU	USA/NHTSA
Go Ahead Engineering	Maximator GmbH	OICA/Renault	VDA/Germany
GWS Solutions of Tolland	Nikola Motor	OICA/Stellantis	Westport Power Inc.
Hexagon Lincoln	North Trains Limited	OICA/Toyota	Zhejiang University
Hopium	OICA/BMW	OICA/Van Hool NV	UK/Dept of Transport