GRSP TF on the transposition of GTR 13 Phase 2 to UN-R 134 (5)

Meeting Date: 04/10/2022 09:30 – 11:00 (CET) Location: Microsoft Teams Meeting

Participants:

- 🗹 Alessia Bolla (Iveco/OICA)
- Anais Garo (Utac, France)
- ☑ Andres Fernandez Duran (Iveco/OICA)
- ☑ Annett Schuessling (Lifte H2)
- Gerhard Gissibl (BMW/OICA)
- ☑ Hans Lammers (RDW, Netherlands)
- 🗹 🛛 Ikuya Yamashita (Honda/OICA)
- ☑ Karine Pelletier (Volvo/OICA)
- 🗹 Masaaki Iwasaki (Toyota/OICA)
- ☑ Matthias Kuntz (Bosch)
- ☑ Mike Levet (DfT, UK)
- ☑ Patrick Breuer (Hexagon Purus)
- ☑ Richard Trott (Forvia/CLEPA)
- ☑ Romain Ladret-Piciorus (EU Commission)
- ☑ Salim Abdennadher (Renault/OICA)
- 🗹 🛛 Saya Tanaka
- Seonghoon Kim (Hyundai/OICA)
- Shinya Yamamura (MLIT, Japan)
- ☑ Shougo Suda
- 🗹 🛛 Takehana Tatsumi (KHK, Japan)
- 🗹 🛛 Tohru Nakanishi (METI, Japan)
- 🗹 🛛 Toshinori Narumiya (KHK, Japan)
- 🗹 🛛 Wataru Okuyama (MLIT, Japan)
- Ylva Castenhag Blomström (Scania /OICA)
- 🗹 Yoshio Fujimoto (Toyota/OICA)

Agenda

- 1. Welcome & Roll call
- 2. Review of comments document
- 3. Other
- 4. Next meeting

Minutes

- □ Comment from Livio Gambone (Nikola):
 - *I wanted to raise attention to a potential issue in the latest draft of ECE R134. It appears that Annex 8 of the latest draft has some material requirements built in: <u>https://wiki.unece.org/download/attachments/172852512/R134-03-05_R134-02e_consolidated_v9_20220719.docx?api=v2.</u>*

I wonder if Annex 8 should be included at all, instead indicating that materials shall conform to ISO/TR 15916, which is a similar approach to what various ISO/TC 197 working group standards are doing for hydrogen components (WG 5, 18, JWG 30). Or if there is a burning need to keep Parts 1 and 2, which recall is from GTR 13, Part I, then perhaps you could include a Part 3 which references ISO/TR 15916 (which will avoid any copyright issue

- □ Alexandra Mulot (Utac, France)
- □ Amy Ryan (Toyota/OICA)
- □ Ansgar Pott (Hyundai/OICA)
- □ Anton Weiler (IAV)
- □ Ayako Sugita (Toyota/OICA)
- □ Harald Beck (MAN/OICA)
- □ Hisamoto (KHK, Japan)
- Hyungki Kim (Hyundai/ OICA)
- Junichi Tsukada (JASIC, Japan)
- □ Kazumi Watanabe (JASIC, Japan)
- □ Klaus Keck (Daimler Truck/OICA)
- □ Marco Aimo-Boot (Iveco/OICA)
- □ Marta Angles (IDIADA, Spain)
- □ Martin Koubek (NHTSA, USA)
- □ Myrna Cashatt (Linamar)
- Paul Dijkhof (Kiwa)
- □ Volker Rothe (Stellantis/OICA)
- Yoshinori Tanaka (NTSEL, Japan)
- \Box Yves van der Straaten (OICA)

by not directly using the SAE J2579 table), but will still leave SAE J2579 (and other methods) as an option to demonstrate material compatibility.

My concern is that R134 will be adopting into regulation, a part of GTR 13 (Part I) which is the non-mandatory section, meaning it is not yet well supported by industry, and at the same time forcing manufacturers to source expensive testing of materials at a very limited number of test facilities in the world that can perform this work on a contract basis. At a minimum, a Part 3 as proposed above is required.

- Richard Trott (Forvia/OICA):
 - ISO/TR 15916 is a technical report that lists different methods for testing but is neither comprehensive nor finalized.
 - Prefers to postpone material discussion and not link the material compatibility test to phase 2
- Gerhard Gissibl (BMW/OICA):
 - Prefers not to wait and would use this as a change to initiate the discussions on worldwide hamonization of material compatibility testing
 - Recommends to make a strong statement to harmonize European and Japanese standards
- Nakanishi Tohru (METI, Japan):
 - Needs to check internally
- Andres Fernandez Duran (Iveco/OICA):
 - Agrees with Gerhard not to wait longer
 - Agrees with Richard that ISO/TR 15916 should not be included
- □ OICA proposals:
 - OICA will propose changes to UN regulations no. 94 and 137 to include hydrogen safety requirements and proposes changes to reflect those amendments
 - (b) Lateral impact test in accordance with UN Regulation No. 95.

This requirement is deemed to be met if the vehicle equipped with CHSS is approved in accordance with UN Regulation No. 94 (05 series of amendments or later) or UN Regulation No. 137 (03 series of amendments or later) for frontal impact and UN Regulation No. 95 (06 series of amendments or later) for lateral impact.

- OICA prefers to keep the alternative impact test and proposes to change as follows:
 - 7.2.4.1. Requirements on installation of the hydrogen storage system not subject to the *frontal* impact tests:
 - 7.2.4.3. Lateral impact test on compressed hydrogen storage system as alternative to 7.2.4.2.

Upon the manufacturer's request, for compressed hydrogen storage systems installed in vehicles to which the vehicle crash test specified in 7.2. (b) is not applicable, the additional installation requirement under 7.2.4.2. does not apply if the compressed

hydrogen storage system has passed the lateral impact test specified below:

7.2.4.3.1. Test conditions

The compressed hydrogen storage system must be filled with hydrogen or helium. The test pressure shall be agreed by the manufacturer together with the Technical Service. Tests shall be conducted on the compressed hydrogen storage system in the position intended for the installation in the vehicle including attachments, brackets and protective structures if applicable. At the manufacturer's discretion and in agreement with the Technical Service the compressed hydrogen storage system may be fixed to a representative part of the frame or on a complete vehicle. The protective structure shall be defined by the manufacturer.

7.2.4.3.2. Movable deformable barrier Impactor (striker)

The movable deformable barrier (MDB) impactor includes both a deformable face and rigid support structure. The characteristics of the deformable face shall comply with the requirements of UN Regulation No 95 Annex 5. The impactor face may either be mounted on a pendulum, a drop tower or be secured to a carriage (moving barrier).

7.2.4.3.3. Lateral impact on compressed hydrogen storage system

The impactor energy shall be 90 KJ MDB speed at the moment of impact shall be 50 ± 1 km/h. However, if the test was performed at a higher impact energy speed and the compressed hydrogen storage system met the requirements, the test shall be considered satisfactory. The impact direction shall be in an angle of 90° to the longitudinal axis of the test set-up as defined in paragraph 7.2.4.3.1. and the CHSS container shall be adjusted in a way that the middle of the front plate of the barrier matches the **target point** middle of the primary closure location container in the horizontal and vertical. In case more than one primary closure location, the worst case impact area shall be selected for the test in agreement with the technical service. The target point of the container is on the central height of the container and [300 mm apart from the far end of the primary closure devices]

After this lateral impact test the compressed hydrogen storage system shall comply with the requirements in 7.2.1. and 7.2.3.

- 7.2.4.3.4. A calculation method may be used instead of practical testing if its equivalence can be demonstrated by the applicant for approval to the satisfaction of the Technical Service and in agreement with the type-approval authority.
- Intention is not to use the same configuration as UN-R 95



- Shinya Yamamura (MLIT/Japan):
 - Future amendments of crash regulations are important
 - Need for a realistic alternative to crash tests is important
 - Needs time to assess the proposal
- OICA proposes to allow for remote TPRDs which are connected directly to the container
 - All applicable tests from paragraph 5 and 6.1
- Tohru Nakanishi (METI, Japan):
 - GTR 13 phase 2 did not define test methods for remote TPRDs
 - METI cannot decide if the test method is appropriate, this assessment needs to be done by specialized institutes
 - Difficult to decide in this taskforce
 - Prefers to continue the discussion in GTR 13 phase 3
- o OICA:
 - Would like to better understand the safety reserve
 - What needs to be done in addition to provide safety for remote TPRDs?
 - Proposes to have a side meeting to discuss further
- o Tohru Nakanishi (METI, Japan):
 - Will check with Jari & KHK
- □ Comments from Paul Dijkhof (KIWA):
 - Justification for the inclusion of specific provisions which do not match previous European legislation can be found in the rationale of GTR 13 phase 2
- □ Other
- □ Next meeting

October 25th 2022,

9.30 am to 11.30 am (CET) 4.30 pm to 6.30 pm (JST/KST)