

## Terms of Reference for the informal working group of Phase 2 of GTR No.13, Hydrogen and Fuel Cell Vehicles

### A. INTRODUCTION

In June 2013, the World Forum for Harmonization of Vehicle Regulations (WP.29) and the Executive Committee of the 1998 Agreement (AC.3) established a global technical regulation (GTR No. 13) for hydrogen and fuel cell vehicles (HFCV). The GTR No. 13, was developed during phase 1 by the subgroup safety (SGS), consists of safety provisions for the hydrogen fuel vessel, fuel system and high voltage system of HFCV. Subsequently, the GTR has been adopted and transposed into national regulations by several contracting parties under the 1998 Agreement. Some of the provisions that required long term research were deferred to phase 2.

In March 2017, the executive committee of the 1998 Agreement (AC.3) gave a general support to a joint proposal submitted by the Japan, Republic of Korea and the European Union to establish an informal working group (IWG) to work on phase 2 of the GTR No. 13 under the framework of the 1998 Agreement.

The purpose of this document is to set forth the Terms of Reference (ToR) for the IWG including objective, scope, operating principles, timeline and deliverables.

### B. OBJECTIVE OF THE WORKING GROUP

The objective of the IWG is to develop additional safety provisions that were either not ready for adoption in phase 1 and/or required additional research. The IWG will also update/clarify existing requirements and test procedures in GTR No.13 based on new data and on-road experience.

The provisions **that attain equivalent levels of safety as those for conventional gasoline powered vehicles** will be performance-based and supported by science and data to the extent possible so as not to restrict future technology development. Scope of work for IWG in Phase 2 shall include, the following items. **Should additional items be proposed, the IWG will decide by consensus on their inclusion.**

- A. Potential scope revision to address additional vehicle classes;
- B. Potential to harmonize vehicle crash test requirements;
- C. Potential to refer the GTR's existing high voltage requirements to the GTR for electric vehicles;
- D. Requirements for material compatibility and hydrogen embrittlement;
- E. Requirements for the fuelling receptacle;
- F. Evaluation of performance-based test for long-term stress rupture proposed in Phase 1;
- G. Consideration of research results reported after completion of Phase 1 – specifically research related to electrical safety, hydrogen storage systems, and post-crash safety; and

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- H. Consideration of 200 per cent Nominal Working Pressure (NWP) or lower as the minimum burst requirement for certain type of fuel containers;
- I. Consider safe guard system for the case of isolation resistance breakdown.

## C. OPERATING PRINCIPLES

1. The informal group will be sponsored by the European Union, Japan and Republic of Korea. The IWG will be led by co-chairs (the United States and Japan), vice-chairs (Republic of Korea and China), and a secretary (OICA).
2. The IWG is a sub-group of Working Party on Passive Safety (GRSP) and is open to all participants of GRSP including contracting parties and non-governmental organizations to the 1958 and 1998 agreements.
3. The IWG will report to the GRSP and WP.29 and AC.3.
4. The official language of the IWG will be English.
5. All documents must be submitted to the Secretary of the group in a suitable electronic format at least (10) working days before the meeting. The documents will be posted on the UN website at least (5) working days in advance of the meetings.
6. The Secretary of the IWG will distribute a draft meeting minutes to all members within (15) working days after the meeting with the view to be formally adopted at the next meeting.
7. Decisions and proposals of the group shall be reached by consensus. When consensus cannot be reached, the chairs of the group may present the different points of view and seek guidance from GRSP, as appropriate.
8. Meetings shall be held in agreement with the majority of the participants based on the joint proposal by the chairs of the IWG. Meetings may be in person or virtual using web-based technology.
9. A provisional agenda shall be drawn up by the IWG leadership. The first item of the provisional agenda for each session shall be the adoption of the agenda. The second item shall be the minutes of the previous session followed by technical discussions and miscellaneous items.

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## D. TIMELINE and DELIVERABLES

1. **October 2017:** First IWG meeting

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2. **November 2017:** Report to the World Forum for Harmonization of Vehicle Regulations (WP.29) and the Executive Committee for the 1998 Agreement (AC.3)
3. **December 2017:** Report to GRSP
4. **February 2018:** Second IWG meeting
5. **May 2018:** report to GRSP
6. **June 2018:** third IWG meeting
7. **June 2018:** Report to the World Forum for Harmonization of Vehicle Regulations (WP.29) and the Executive Committee for the 1998 Agreement (AC.3)
8. **October 2018:** fourth IWG meeting
9. **November 2018:** Report to the World Forum for Harmonization of Vehicle Regulations (WP.29) and the Executive Committee for the 1998 Agreement (AC.3)
10. **December 2018:** Report to GRSP
11. **2019-2020:** 3 IWG meetings per year and provide regular reports to WP.29 and GRSP sessions
12. **End of 2020:** Estimated completion of Phase 2 of hydrogen and fuel cell vehicle GTR.

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