Proposal for an Authorization to develop Phase 3 of the UN GTR No. 20

The text reproduced below was prepared by the representatives of [Canada, China, Japan, Republic of Korea and] the European Union to develop Phase 3 of United Nations Global Technical Regulation (UN GTR) No. 20 by the Informal Working Group on Electric Vehicles Safety (IWG-EVS). It is planned to be adopted by the Executive Committee (AC.3) of the 1998 Agreement at its March 2026 session. This authorization, if adopted by AC.3, will be transmitted to the Working Party on Passive Safety (GRSP).

I. Background

1. The Electric Vehicle Safety (EVS) UN GTR is a result of numerous meetings and the excellent cooperation between the governments of Canada, China, Japan, Republic of Korea, the United States of America, and the European Union including standards organizations, testing authorities and industry experts. In 2012, the World Forum for Harmonization of Vehicle Regulations (WP.29) and the Executive Committee of the 1998 Agreement (AC.3), adopted a joint proposal by China, the European Union, Japan and the United States of America to establish two Informal Working Groups (IWG) to address the safety and environmental issues associated with electric vehicles.

2. The objective of the two working groups was to seek regulatory convergence on the global scale via the work in the framework of the 1998 Agreement. Consequently, an IWG was established to develop provisions to address the safety of electric vehicles during in-use and post-crash of electric vehicles using science-based, data driven and performance-based approach. IWG-EVS has conducted numerous meetings and necessary research and testing to complete the first phase of the efforts which resulted in the adoption of UN GTR No. 20.

3. Phase 2 efforts and discussions focused primarily on single-cell thermal runaway and propagation due to an internal short-circuit. Canada, China, France, Germany, Japan, Republic of Korea, Netherland (the Kingdom of), the United Kingdom of Great Britain and Northern Ireland, the United States of America, the European Union and International Organization of Motor Vehicle Manufacturers (OICA) shared progress in thermal propagation research and field data. In October 2021, the informal working group established the thermal propagation task force (TP-TF), led by China, Japan, and Canada, and a thermal propagation documentation sub-group, led by the United States of America. Between 2023 and 2024, the work of the Ad-hoc Special Interest Group on model regulation regarding the safety of electric vehicles with a focus on a thermal propagation test method, also laid an important foundation for the development of Phase 2 of the regulation.

4. Since several Contracting Parties already adopted national requirements on thermal propagation, the IWG agreed to formulate Phase 2 regulatory by capturing the minimum common elements between Contracting Party positions and approaches, and in a manner that would not require any changes to the recently published regulatory documents.

5. As a result, two compliance paths were further developed by the IWG over the course of Phase 2. The first safety path was a physical test of vehicles or Rechargeable Energy Storage Systema (REESS) and the second safety path was the risk management approach. For the Contracting Parties electing to incorporate the test approach in their respective jurisdictions, there are 5 initiation methods. For the Contracting Parties electing to pursue a risk management approach (RMA), the intent was to (1) document the known risk to vehicle occupants caused by thermal propagation which is triggered by an internal short-circuit leading to single cell thermal runaway, and (2) document the reduction of risk resulting from implementation of the identified risk mitigation functions or characteristics at the cell, REESS, or vehicle level.

6. While the draft amendment to UN GTR No. 20 complements the original UN GTR No. 20 with important safety provisions, the electric vehicle technologies continue to evolve including new lithium-ion chemistries, new chemistry families, new or enhanced battery diagnostic capabilities, higher power, energy and/or voltage system designs, and these developments need to be further researched and tested. Other areas related to electric vehicles safety remain unregulated (see the Proposal). The IWG-EVS seeks approval to start

Phase 3 immediately after the end of the mandate of Phase 2 to start preparing the work on future technical items with physical meetings resuming the activity in the second half of 2026.

II. Proposal

7. An extension of the mandate for the IWG-EVS shall address the remaining safety issues. Phase 3 activities should be started immediately after the endorsement of this authorization by WP.29 and AC.3.

8. Phase 3 of the IWG-EVS will be co-chaired by Canada and the European Union. Vice-Chairs will come from China and Japan, with Japan providing the Secretariat.

9. The scope of work in Phase 3 should cover the following items:

(a) Expansion of protection scope of thermal propagation test;

(b) Post-crash REESS safety assessment, stabilization procedures and non-occupant and surroundings safety;

(c) Maintaining the EV battery safety during the in-use phase;

(d) Safety of swappable batteries;

(e) Micromobility, light-category vehicles, e-trailers safety;

(f) Quantitative criteria on flammability, toxicity and corrosiveness of vented gases and smoke; and

(g) Bottom protection.

III. Timeline

6. Authorisation for Phase 3 of the work of the IWG-EVS is requested for an initial period of four (4) years.