

## **Status report of the Chair of the Informal Working Group (IWG) on Electric Vehicle Safety (EVS) GTR 20**

The 21<sup>st</sup> Meeting of the IWG for EVS GTR took place virtually on April 20-22, with the participation of 8 CPs, test laboratories, and industry associations and companies, including OICA and CLEPA.

The Chair reported on the March 183<sup>rd</sup> session of WP.29, and provided link to the meeting. Of note from that meeting was the general agreement that the work of the IWG for EVS is very important as it supports the objectives of the Framework document for Automated Vehicles and to the goal of safe and efficient deployment of EVs to reduce carbon-based fuels consumption and emissions.

We heard reports from individual CPs that are in the process of introducing the updated UN Regulations Nos. 94, 95, and 100, into their national regulations. Japan for example is evaluating comments it received during the public comment period.

US is seeking comments on its research in several areas, including thermal propagation and water immersion. The EC will be publishing the translated regulations 94, 95, 100, 137, and 153 in the Official Journal of the European Union. China informed the IWG that the three standards on EVs safety have become mandatory for new models from January 2021 and will be applied to all vehicles from January 2022. India is planning full implementation of its national standard which is based on the GTR 20 and on the transposition document for UN Regulation 100 draft revision 3. Korea reported that its new KMVSS 48 would be implemented for new types of vehicles as early as July 2021, and all vehicles as of July 2023. Canada is ready to transpose GTR 20 Phase 2 into the body of Canadian Motor Vehicle Safety Standards. The Russian experts reported on the ongoing work on water immersion, and Russia has recorded a significant increase in sales of EVs in 2021.

The technical part of the meeting focused on several critical issues:

1. Thermal propagation and methods of initiation in the battery system. There are differences in approaches and we have noted differences in the effectiveness of different methods for batteries of different sizes and configurations. We are in the process of evaluating the two candidate methods: the nail penetration and heating method. We are also considering to apply the documentation method in order to allow the manufacturer determine the most appropriate method. Connected to this issue is the emergence of predictive safety technologies to identify in advance the propensity for and risk of thermal propagation to isolate and mitigate the cell runaway and alert the driver if additional attention is needed.

Alerting in advance is very important, and not only for the occupants but for people outside the vehicle because several incidents have been recorded to have happened while the vehicles were parked with no one in them.

The OICA reported that the early detection technologies that are being developed entail proprietary information, documentation method should be considered.

2. Next issue is the vibration profile requirement which is already in the GTR, but some CPs question the appropriateness of that requirement in GTR 20 which is meant to be minimal global standard which is based on documented safety problem. The vibration profile is deemed by some CPs as necessary safety standard and by others, including OICA, as related to product reliability.
3. The third critical topic is the water immersion which has been investigated by several CPs including China, Korea and Russia. The IWG agreed that more work and discussions are needed. The IWG also discussed other issues such as overcurrent, toxicity of gases emitted from batteries.

CLEPA requested that the IWG consider and issue recommendation with respect to the proposal for the definition of “specific voltage conditions” and will submit a separate informal document at this session.

The IWG also discussed and decided on requesting an eighteen-months extension of its mandate, which would envision the formal vote on the Phase 2 amendments either at March or November 2024.