

**Report of the 1st Meeting of the informal group on
Electrical Vehicle Safety - Global Technical Regulation
(EVS-GTR)**

Venue:

1200 New Jersey Avenue, SE
Washington, DC 20590, USA

1. Welcome and practical arrangements:

- Welcoming remarks:
 - Christopher Bonanti, Associate Administrator for Rulemaking
 - Dan Smith, Senior Associate Administrator
 - Kevin Vincent, Chief Counsel

2. Working group organization: EVS – Leadership roles:

Organization is acknowledged by EVS members:

- Chairman: Nha Nguyen (NHTSA, US)
- Co-vice chairpersons: Johan Renders (EU), Chen Chunmei (MIIT, China)
- Secretary: Kazuyuki Narusawa (NTSEL, Japan)

Attendees included:

- Contracting parties under the 1998 Agreement: US (NHTSA, EPA and DOE), EC, Canada, China, Korea, Japan, Germany and France.
- Industry organizations: , Association of global automakers, CLEPA, MEMA, Johnson Controls, COBASYS, Autoliv, , CATARC, , OICA (Alliance ,Volvo, Daimler, BMW, BAIC Group, Chang' An NEV, GM, Toyota, Nissan, Honda, Ford, Renault and VW).

3. Approval of the agenda:

- The agenda was discussed and agreed

4. EVS mandate:

Minutes of WP29 March (ECE/TRANS/WP.29/1095) and ECE/Trans/WP.29/2012/36 and its Corr1 were explained:

- **June 2011** – The US (NHTSA, EPA), the EC and Japan agreed to co-sponsor such a group.

- **November 2011** – the US, EC and Japan presented the draft proposal to establish 2 working groups address safety and environmental issues of EVs. NHTSA Chief Counsel gave a presentation on the NHTSA battery research plan to WP.29. The executive committee (AC.3) and WP.29 gave general approval.
- **March 2012** – AC.3 adopted ECE/TRANS/WP.29/2012/36 and its Corr.1 and welcomed the co-sponsorship of China. The representative of the United States of America offered to chair while China and EU offered to Vice-Chair the EVS group. Japan committed itself to take on the role of the secretarial.

5. **Draft terms of reference for EVS:**

- The terms of reference (TOR) were discussed and updated based on the group agreement. Most of the edits were incorporated to provide better clarification to the text. Some of the relevant items are as follows:
 - Changed RESS to REESS as RESS has already been used by another working group under the GRB .
 - The group decided to keep the description for high voltage vehicles broad and use EV in the TOR instead of specific types of vehicle such as PEV, HEV, PHEV, HFCV, etc. The specific definition can be decided in the GTR.
 - Insert a paragraph to include a WP29 decision: “The WP29 Committee has adopted this proposal with China as one of the co-sponsors together with the United States, Japan and the European Union, and recorded in the reports.”
 - Post-crash was changed to “During and post-crash.”
 - EC proposed that this group should also consider the different standards for electro-mobility (vehicle inlets for charging) and for vehicle-to-grid communication (intelligent charging), in so far these topics may be relevant for the technical requirements to be developed.
 - The group agreed to exclude the noise and EMC items from this effort.

6. **Update on ongoing and planned research and rulemaking activities:**

The working group members provided presentations on the status of their national/regional legislation, research and testing activities on EVs. Industry members also provided their current activities and standardization efforts. The presentations are posted on the UNECE website: http://www.unece.org/trans/main/wp29/wp29wgs/wp29grsp/evs_01.html

1) **USA rule making process**

NHTSA Chief Counsel Office, Mr. Jesse Chang, made presentation for rule making process for vehicle safety. The participants are well informed of the rule making process in United States in general and that the GTR also must undergo the same process before it can be established as a US rule.

Germany asked about whether or not the rule making process can be streamlined by early participation from industry. NHTSA answered it seeks to involve all related parties from very early stage such as research phase. However, comments from the public can come from many different unanticipated parties. If they have relevant comments, they still need to be addressed.

OICA (BMW) asked the possible usage of private research e.g. industry, and received the answer that all the data, studies, and/or information are appreciated.

EC asked regarding the process of non-compliance for the regulations and whether or not a manufacturer's certification may have a different conclusion than NHTSA's compliance test. NHTSA answered that this can happen. However, there is a dedicated office for compliance matters and that the compliance is evaluated against the objective test in the regulations.

2) Safety requirement for EVs in EU

Mr. Johan Renders of EC made a presentation on Safety requirement for EVs in EU. He explained the legal framework of EU type approval for motor vehicles and the current requirements and how the objectives to address safety of Electric Vehicles in this framework have been accommodated.

Answering the question how the future GTR on EVS could/would be introduced into the EU legal framework, he explained that the procedure to be pursued would be to have the GTR provisions included in Regulations annexed to the 1958 Agreement and subsequently to require compliance with these Regulations for the purpose of type-approval in the EU.

NHTSA asked the legal difference between EU Regulations and EU Directives. The EC provided this information by explaining that Directives provide some flexibility for EU Member States to decide how to apply them nationally, but also entailed administrative burdens as they need to be transposed in the national legislation of each of the 27 EU Member States. This is why the EU legal framework is more and more using EU Regulations, which are directly applicable in the EU Member States, without the need of having them transposed in the national legislation of the Member States, and which should ensure uniform application of the requirements in the 27 EU Member States.

OICA asked for clarification about the interaction between the General Safety Regulation and the EU Directive for the Type Approval of motor vehicles. EC answered that this is an example of the trend to move from Directives to Regulations, but in this case the provisions of the General Safety Regulation have to be referred to in the EU Directive, which results also in some administrative burden. For the future it is not to be excluded that the Regulation and the Directive will be merged into one legal instrument (most likely a EU Regulation).

3) EV status in Japan

Mr. Ryugo Toji of MLIT explained and presented the EV market situation in Japan and its governmental effort for the related regulation including introduction of GTR. OICA asked whether Japanese manufacture must follow Japanese national requirement or ECE. MLIT answered the national requirement will be valid till the official introduction of ECE regulation such as ECE-R100 in 2014. He also answered to the question from EC as MLIT has an intention to harmonize current existing national supplemental requirement with ECE once it would be established.

4) REESS status

The chairman of REESS informal group, Mr. Gerd Kellermann, presented the status of REESS (ECE-R100 02 series amendment).

US DOE questioned whether the definition of REESS includes another type of battery other than Li-Ion battery / capacitors. Mr. Kellermann answered that the REESS group

has carefully considered many types of battery and provided common test procedures that would be applicable for all types of battery.

5) China standard for EV

The representative of China, Mr. Sun Zhendong, gave a presentation on the process and status of Chinese standards for EVs.

OICA questioned how the Chinese government differentiates the mandatory standard and voluntary standard such as industrial standard. China representative answered that MIIT will decide whether it is mandatory or not. In general, the standard started with the “GB” means it will be enforced, start with “GB/T” means recommendation. “QC” means industrial standards, voluntary requirement in general. He also stressed that QC/T standards may also become mandate per MIIT decision. China is planning to revise more EV standards in the future. All GB and GB/T standards are available on SAC’s web-site, however, written in Chinese.

6) EV Status in Korean

Korean delegation, Mr. Hyuk Jung, presented the status of Korean EVS regulation including the report of Korean research activities for EVs.

He explained that the revision to the test procedures is expected in 2012. He also expressed that Korea’s KMVSS 305 will harmonize with FMVSS 305.

7) Battery safety research by NHTSA

Ms. Barbara Hennessey from NHTSA’s Office of Vehicle Crashworthiness Research provided a presentation on their battery safety research program. Topics included the development of:

A high level FMEA for current and near term electric vehicles and hybrids to guide the development of other safety assessment projects;

Test procedures to assess battery stability under normal and abnormal use conditions;

Test procedures to assess minimum control system requirements including active, passive and redundant control mechanisms, diagnostics, predictive thresholds and operator indicators and messages;

Field discharge procedures for inoperative/post-crash vehicles.

In response to questions from the audience, NHTSA indicated that ECE-R100 will be considered in developing test procedures, and that the results of the FMEA should be available for discussion at the next EVS meeting in the fall.

8) JRC presentation on EV research

On behalf of the Joint Research Centre, the European Commission’s Research Department, Mr. Johan Renders delivered the presentation on JRC support for EV technical research. The EC representative also mentioned that JRC might participate at the next meeting to provide more details on their research activities.

9) China EV industry presentation

Mr. Luan Yunfei of the Chang’An NEV Company in China presented its development of EVs. He explained that their company sold 1.9 million vehicles in 2010 including

small vans less than 1 ton vehicle total weight. He stated that the company's EVs were designed and manufactured to comply with all safety standards in China. These vehicles were subjected to crash tests and other safety tests.

10) GM presentation for EVS

Mr. Volker Rothe presented GM's technological strategy, its technical research and development, and position towards EVs regulations and other standards. He added some detailed explanation of their test procedures to answer the questions from the participants.

11) VW presentation

Mr. Heiko Mertens presented the VW position on EV GTR, and/or another regulation. 2013 will become an important year for VW eMobility. At first, the blue-e-motion will kick-off the age of electrically propelled vehicles and the Golf blue-e-motion will follow immediately. Other vehicle models will be available in 2013/2014, which are based on plug-in hybrid technology. Regarding the EV regulation, their position is fully in line with OICA's global industrial's position.

12) Ford presentation

Mr. Domenico Gabrielli from Ford presented its strategy to electrify the vehicle including their research and development activities and product plan. Answering to the question from NHTSA, he mentioned that many committees of SAE battery safety standards are close to publish the outcome of their work.

13) OICA presentation on EVS

Mr. Scott Schmidt, representative of Auto Alliance, on OICA's behalf concluded the industry position for EV regulations. The automobile industry fully supports this regulatory activity and will work to provide preliminary proposal for consideration by the working group.

7. Brainstorming on the GTR:

- Content, structure and scope of the GTR: The GTR will follow the formal format set forth by WP.29.
- Technical report: A final technical report will be submitted with the final draft GTR for the vote by WP.29.
- OICA indicated that it will provide a preliminary draft proposal for the group's consideration at the next meeting. Chairman welcomed the offer and stressed that the draft proposal should be supported with robust technical rationale and justification.
- SCOPE: The group discussed the scope of the GTR and the discussion is summarized as follows:
 - The GTR will cover EVs (electric vehicles and hybrid vehicles) of Category 1-1 and 1-2 of under the 98 Agreement S.R.1 definition [and less than 10,000 lb (4536kg).] 2 wheelers and 3 wheelers to be excluded.
 - We may add more specific description / features such as propulsion system, dimension, or voltage level etc.
 - Another option is to use scope under the Hydrogen Vehicle (HFCV) GTR.

- Contracting Parties maintain their current crash test procedures.
- Japan stated that since time line is severely limited, we should introduce step by step approach differentiated by its priority in a timely manner.
- Only the vehicle and its components with high voltage (over 60 VDC and 30 VAC) can be the scope of this group. (Germany)
- OICA expressed that it must be clarified whether Hydrogen (HFCV) vehicle will be included in the scope.
- Germany proposed to copy and paste those requirements from the HFCV GTR, in as far they are suitable for the scope of this working group.
- Secretariat expressed that HFCV GTR discussion has not covered all electric requirements such as battery safety.
- The chairman and co-sponsors will prepare a proposal for the GTR outline for consideration at the next EVS meeting.
- Roadmap for deliverables for GTR: EC proposes to start the discussion for establishment of roadmap after next meeting.
- Co-ordination with EVE: US/EPA kindly informed the schedule of 1st EVE meeting will be held on June 8th, 2012, immediately after the next GRPE session and the 2nd meeting will be held on Sept 13th at the Environment Friendly Vehicle exhibition in Baltimore, Maryland, US.

8. Any other business:

- None

9. Actions items and future meetings:

- Chairman will provide a progress report and its TOR to the GRSP in May 2012.
- Co-sponsors will prepare the outline of GTR by the next EVS meeting and circulate it to make the discussion at the next meeting possible. (by early September)
- OICA will prepare the first preliminary draft text proposal before the next meeting and circulate it to make the discussion at the next meeting possible. (by early September)
- Distribute the meeting report and action item list which explains the remaining tasks, open issues, and/or responsive person etc, and attendance list as annex.
- Next EVS meeting is scheduled for October 23rd, 24th, and 25th, 2012 in Bonn, Germany.
- The 3rd EVS meeting will be in Tokyo, Japan, either in February or March, 2013.

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