

Proposal to amend Working Document ECE/TRANS/WP.29/GRPE/2025/21

The text below proposes an amendment to UN R177 in Working Document ECE/TRANS/WP.29/GRPE/2025/21 prepared by the experts of OICA, on the definition of vehicle types and families. The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

I. Proposal

Paragraphs 9.1. to 9.3., amend to read:

"9.1 Vehicle type with regard to system power

9.1.1. Only vehicles that are the same with respect to all of the following elements may be part of the same vehicle type:

- (a) Powertrain system configuration, including number, type, and mechanical arrangement of power sources and operating strategy;
- (b) ICE power rating.
- (c) ~~Net power and construction type (for example, asynchronous, synchronous, or other specific construction type) of all electric machines in the powertrain, and type of electric energy converter(s) between the electric machine(s) and the battery;~~
- (d) **Construction type (for example, asynchronous, synchronous, or other specific construction type) of all electric machines in the powertrain, and type of electric energy converter(s) between the electric machine(s) and the battery;**
- (e) Type of battery cell, including format, capacity, voltage, and chemistry;
- (f) Type of battery pack, including battery configuration (number of cells in series and mode of connection);
- (g) Nominal voltage of the battery;
- (h) Maximum current of the battery; and
- (i) Type of vehicle (PEV, OVC-HEV, or NOVC-HEV).

At the request of the manufacturer, with the approval of the Type-Approval Authority and with appropriate technical justification, the manufacturer may deviate from the above criteria.

If vehicles differ in (b) and (c) solely due to different software, they may be considered part of the same type."

9.2. Families

Within a vehicle type, vehicles ~~having the same characteristics with respect to their evaluation for system power~~ may be grouped into vehicle families as described below:

9.2.1. **If, within a vehicle type, multiple indicated figures for peak and sustained system power exist, they shall all be based on tests conducted according to the specified procedures in this regulation and shall be traceable to a family.**

9.2.2. At the request of the manufacturer and with the agreement of the type approval authority or technical service, a family may be duplicated into various distinct families without the need to conduct additional tests (e.g. to distinguish between different K-factors derived according to paragraph 8.1.1.2.).

9.3. Identification of families for type-approval

To differentiate between different families within the same vehicle type, e.g. ~~when different K factors do not affect the parameters in paragraph 9.1.~~, the manufacturer may specify a unique identifier of the following format:

SP-nnnnnnnnnnnnnnn -WMI

nnnnnnnnnnnnnnnn is a string with a maximum of fifteen characters, restricted to using the characters 0-9, A-Z and the underscore character '_'.

WMI (world manufacturer identifier) is a code that identifies the manufacturer in a unique manner defined in ISO 3780:2009.

It is the responsibility of the owner of the WMI to ensure that the combination of the string nnnnnnnnnnnnnnn and the WMI is unique to the family."

II. Justification

1. The proposed amendment aims to reduce the number of required approvals (paperwork) when different system powers exist due to varying software.
2. To achieve this, the Net Power of the electric machine is listed separately from other engine properties, such as construction type.
3. If different system powers exist within the same type due to different engine software, the type must include test reports for both system power declarations.
4. The number of tests or information within the type does not change, but the number of required approvals can be reduced.