



UNECE EVE-IWG

In-Vehicle Battery Durability

OICA position on Family Concept

EVE-IWG #49

26.05.2021

6.1.1. For Part A: Verification of Monitors

Only vehicles that are identical / substantially similar with respect to the following elements may be part of the same monitor family:

- (a) Algorithm for estimating SOCR and SOCE whether included or not in the Battery Management System, and for determining flag conditions described in Annex 2, including software version*
- (b) Sensor configuration (for sensors used in determination of SOCR and SOCE estimates and flag conditions)
- (c) Characteristics of battery cell which have a non-negligible influence on accuracy of monitor Type and dimension of cell (including format and chemistry)
- (d) Battery management system (BMS)* (with regards to battery durability monitoring and estimations)
- (e) Type of vehicle (PEVs or OVC-HEVs)

* At the request of the manufacturer and the approval of the responsible authority the monitor family may be extended in the case of a different algorithm or BMS if there is sufficient evidence that the performance of the monitor will not be affected.

OICA supports the text in the latest GTR draft after EVE # 48

6.1.2. For Part B: **Verification of Battery Durability**

Only vehicles that are **substantially similar** with respect to the following **elements** may be part of the same **battery durability family**:

- (a) Type and number of electric machines: construction type (asynchronous/ synchronous, etc.), type of coolant (air, liquid), method of cooling and any other characteristics having a non-negligible influence on battery durability;
- (b) Type of traction REESS (dimensions, type of cell, including format and chemistry, capacity (Ampere-hour), nominal voltage, nominal power, ~~type of coolant (air, liquid)~~);
- (c) Battery management system (BMS) (with regards to battery durability monitoring and estimations); **Addressed by (d)**
- ~~(d) Insulation/packaging **and placing** of the battery **in vehicle**; (d) Passive and active thermal management performance~~
- ~~(e) Transmission type (e.g. manual, automatic, CVT) and transmission model (e.g. torque rating, number of gears, numbers of clutches, etc.);~~
- ~~(f) Number of powered axles;~~
- (g) Type of electric energy converter between the electric machine and traction REESS, between the recharge-plug-in and traction REESS, and any other characteristics having a non-negligible influence on battery durability;
- (h) Operation strategy of all components influencing the battery durability;
- ~~(i) n/v ratios (engine rotational speed divided by vehicle speed). This requirement shall be considered fulfilled if, for all transmission ratios concerned, the difference with respect to the n/v ratios of the most commonly installed transmission type and model is within 8 per cent.]~~
- ~~(j) Maximum power rating of the electric drivetrain~~ **Addressed by (a) and (b)**
- ~~(k) Certified vehicle energy consumption (within x percent)– better to strike it out at this stage (x cannot be defined in the short timeframe)~~
- (l) Maximum charging power

*With the approval of the responsible authority, the manufacturer may deviate from the above criteria for families with appropriate technical justification.