

## Open points – OICA positions

- Definitions
  - No further comments → ok
- Virtual Distance
  - Keep propulsion based formula
  - Verification method part c must be updated by the propulsion based formula
- Annex I - Vehicle survey
  - Single stage: Date of manufacture based on regional provisions (e.g. date of issuing the certificate of conformity in EU of base vehicle)
  - Multi stage: date of manufacture - what about multistage vehicles?
  - [Average fuel consumption for HD-OVC-HEVs] → not available as standardized value such as for LDV (WLTC not applicable for HDV), which value should be chosen (depending on local rules such as VECTO in EU, GEM in US, etc.)
  - On average how often were fast or ultra-fast\* or MegaWatt\*\* chargers used in a month? → must the ambient temp measurement during charging be ensured? How is averaging ensured (see Annex 2, 5.) OBD signal available?
- Annex II – values to be read
  1. On board SOCE value (in %) → ok
  2. Odometer (i.e., distance driven by the vehicle) (in km) → ok
  3. Date of manufacture of the vehicle → not feasible from current point of view
  4. Elapsed time since last charged by more than 50 per cent state of charge swing [Days] → ok
  5. Average battery temperature while propulsion system is active, during charging and (if equipped) during non-usage of the vehicles (i.e. non-propulsion system active, non -charging) → from our point of view, min and max temperatures can be monitored,
    - in case averaging:
      - what is the intention?
      - what would be the frequency and time increment?
      - Per pack or cell?

~~Maximum, minimum, average ambient battery pack temperature\* the vehicle battery was exposed / experienced to during its lifetime → not feasible~~

  6. Total distance (sum of the distance driven as reported by the odometer and the virtual distance) [km], if applicable → ok, could that be dismissed in favor of 2.?
  7. Virtual distance (in km), if applicable → ok
  8. Total energy throughput in V2X and/or PTO and/or non-traction purposes [kWh], if applicable → ok with changes to energy throughput only
  9. Energy throughput , [kWh] → ok
  10. Capacity throughput → ok
  11. Total time of use of the battery → ok
  12. Total discharge energy while driving (propulsion system) [kWh], if available → ok, availability should be obligatory due to our position on virtual mileage based on propulsion energy

- Annex 3:
  - Vehicle selection → open to authority and OEM
    - Part A - certification: based on local requirements instead of lowest energy demand configuration (based on which energy demand evaluation?)
    - Part A – in-service verification: add "if applicable" in the first phase to evaluate how that vehicle selection based on different Part B families does work in reality (availability of customer vehicles)
  - Measurement items and accuracy
    - → no input from OICA members so far which could justify a deviation from current text
    - To be dismissed:
      - → Battery cell temperature normally distributed with average temperature at Y C and variance <Z
      - → Average SOC normally distributed with average value Y\*\*% and variance <Z\*
      - → Depth of discharge (DoD): share of cycles with DoD >Y\*\*% must be below Z\*\*%]
  - Alternative test method → technical procedure and requirements to be discussed in phase 2
  - Equivalency of test methods (in terms of accuracy, reproducibility, feasibility) → to be verified within phase 2
  - Test track and on-road surface → No new input so far (same topology, same surface)
  - Vehicle speed determination method 1a and 1b → No new input so far:
    - 1a: constant speed possible (until break-off)
    - 1b: follow traffic signs and traffic flow. Remaining same speed from certification to in-service is thereby impossible
    - 2: follow load profile (stationary or transient c-rate)
    - c/d: follow load profile (stationary or transient dyno-speed & load)
  - Highest normal charging power → Manufacturer recommendations (charging phase shall be defined by e.g. max. duration):
    - Minimum 6h should be changed to max. 6h
  - Charging to full by slow charge → Manufacturer recommendations, see highest normal charging power
  - Break-off criterion
    - → By auxiliary or extrapolation for 1A and 1B (it is the ultimate intrinsic target of each OEM to provide the most accurate SoC monitor to the customer)
    - → unless, measurements will be invalid especially for 1b (no possibility to run vehicle to 0% SoC in live traffic)
    - 4 second rule shall not be the decisive criteria, since the discharge procedure in method 2 allows to run until 0% SoC is reached
  - Use of auxiliaries → see break-off criteria
  - Pure electric operational mode → tbd., Hybrid OEMs?
  - Method 2 steps → JAMA
- Annex 4: MPRs
  - No further comments → ok
- Review clause for Phase 2:
  - Chassis dyno method
  - Pass/Fail criteria review
  - Measurement equipment accuracies
  - MLR (minimum lifetime requirement – km, age, energy throughput) and MPR (SOCE requirement)

