Review of Battery Durability

EVE-36 teleconference
29 June 2020
Battery Durability GTR: Draft framework for Phase 1

1. Minimum performance requirement (MPR)
   - Percentage retention of certified range [or capacity] after “x” years and/or “y” distance
   - MPR is applicable to all manufacturers
   - Individual manufacturers can declare a better performance (declared PR, or DPR)

2. Onboard battery state-of-health (SOH) metric
   - Definition of SOH = (Remaining range / certified range) [or based on capacity?]
   - OEMs responsible for their own algorithm
   - Readable by responsible authority (via OBD or similar)

3. In-service conformity (ISC) and data collection
   - Part A: Establish reliability of SOH metric
     - Small sample of 3-10 vehicles via ISC
     - Use checklist/survey to exclude vehicles with abnormal usage
     - Measure range via range test used for type approval (commonly, WLTC)
     - Verify accuracy of SOH metric by comparing to measured range
   - Part B: Determine conformity with MPR / DPR
     - Large sample of unspecified number of vehicles (large sample may remove need for NUIs or survey)
     - Routine collection of SOH metric, e.g. at safety inspections or via telematics
     - Determine conformity by reference to collected SOH

4. Establish mechanism for ongoing data collection to inform Phase 2
   - Primarily SOH collection
   - Identify simple NUIs that can be implemented now, if any
   - Discussion may be started in Phase 1 under limited samples
Timeline in mandate request

(i) January 2020: Approval of mandate from GRPE
(ii) June 2020: Approval of mandate from AC.3
(iii) January 2020 – June 2020: EVE IWG formulates new drafting group, and begins drafting GTR with elements agreed upon by EVE IWG
(iv) June 2020: EVE IWG provides update to GRPE outlining details of draft outline of GTR
(v) June 2020 – December 2020: EVE begins validation testing of relevant aspects of the proposed procedure, assesses results and makes changes to GTR
(vi) January 2021: EVE IWG submits first draft proposal for the GTR as an informal document to January 2021 session of GRPE for further discussion and recommendation.
(vii) January 2021- March 2021
   a. EVE revises draft proposal based on recommendations from GRPE
   b. Transmission of the draft GTR as an working document twelve weeks before the June 2021 session of GRPE;
   c. Endorsement of the draft GTR based on an informal document by GRPE.
(viii) June 2021: EVE presents the final GTR to GRPE
(ix) November 2021: establishment of the GTR by AC.3 in the Global Registry.
(x) January 2022-January 2024: EVE IWG continues information gathering on possible modifications to the GTR and develops amendments to the GTR for consideration by WP.29 and AC.3, as deemed appropriate.

• Mandate request includes possibility of one additional year
Visual timeline (without use of additional year)

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Phase 1 GTR

November 2021

*pending

*pending
The proposed schedule is very ambitious

• Progress is conditional on many things, including:
  • Ability of monthly meetings to increase the pace of development
  • Ability to reach consensus on the remaining details of Phase 1, among a growing group of stakeholders who have recently expressed interest in the work
  • Availability and suitability of any existing regulatory text (e.g., ISC statistical method and questionnaire/survey) that can be adapted to the GTR
  • No need to develop prescribed NUI algorithms
  • No need for a technical validation program
  • Any prior notice needed to establish outside services to support the program (e.g. application for any new OBD PIDs)
Meeting roadmap

• Recent meetings:
  • EVE 34 teleconference (March 23-26, 2020)
  • EVE 35 teleconference (May 19, 2020)
  • This meeting (June 29-30, 2020)

• Six monthly meetings possible before 82\textsuperscript{nd} GRPE:
  • July 2020
  • August 2020
  • September 2020
  • October 2020
  • November 2020
  • December 2020
Status of DEVP/Power Determination GTR

• 17 March 2020:
  • GTR submitted to the GRPE Secretary, and became working document GRPE/2020/12

• 9-11 June 2020 (81st GRPE):
  • Working document amended by informal document GRPE-81-27e

• 24 June 2020:
  • Relevant content extracted from GTR to form separate technical report

• November 2020:
  • UN GTR on DEVP will be considered by WP.29/AC.3