Review of Battery Durability

EVE-37 teleconference
8-9 September 2020
GTR Framework for Phase 1, as discussed at EVE 36

1. Minimum performance requirement (MPR)
   • Percentage retention of certified range [or capacity] after “x” years 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 [or capacity] / certified range [or 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.
  a. EVE revises draft proposal based on recommendations from GRPE
  b. Transmission of the draft GTR as a working document twelve weeks before the June 2021 session of GRPE;
  c. Endorsement of the draft GTR based on an informal document by GRPE.
- (vii) January 2021- March 2021
- (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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Original target

Still pending

Phase 1 GTR November 2021

TODAY
Key considerations to maintain progress:

• Reach consensus soon on the framework of Phase 1
  • Agree on the main components of the program
  • Agree that each component “can” be achieved (not exactly how to achieve)

• Identify key milestones
  • Identify each component that calls for a solution
  • Identify a timeline for each

• Identify existing regulatory text that can be incorporated or serve as a template for any/all of the components

• If possible, avoid solutions that would require more lead time
  • Avoid need for NUI algorithms by identifying an appropriate statistical design
  • Identify a framework that does not depend on a technical validation phase
Meeting roadmap

• Recent meetings:
  • EVE 34 teleconference (23-26 March, 2020)
  • EVE 35 teleconference (19 May, 2020)
  • EVE 36 teleconference (29-30 June, 2020)
  • This meeting (8-9 September, 2020)

• Three monthly meetings possible before 82\textsuperscript{nd} GRPE:
  • October 2020
  • November 2020
  • December 2020