

# Review of Battery Durability

EVE-37 teleconference

8-9 September 2020

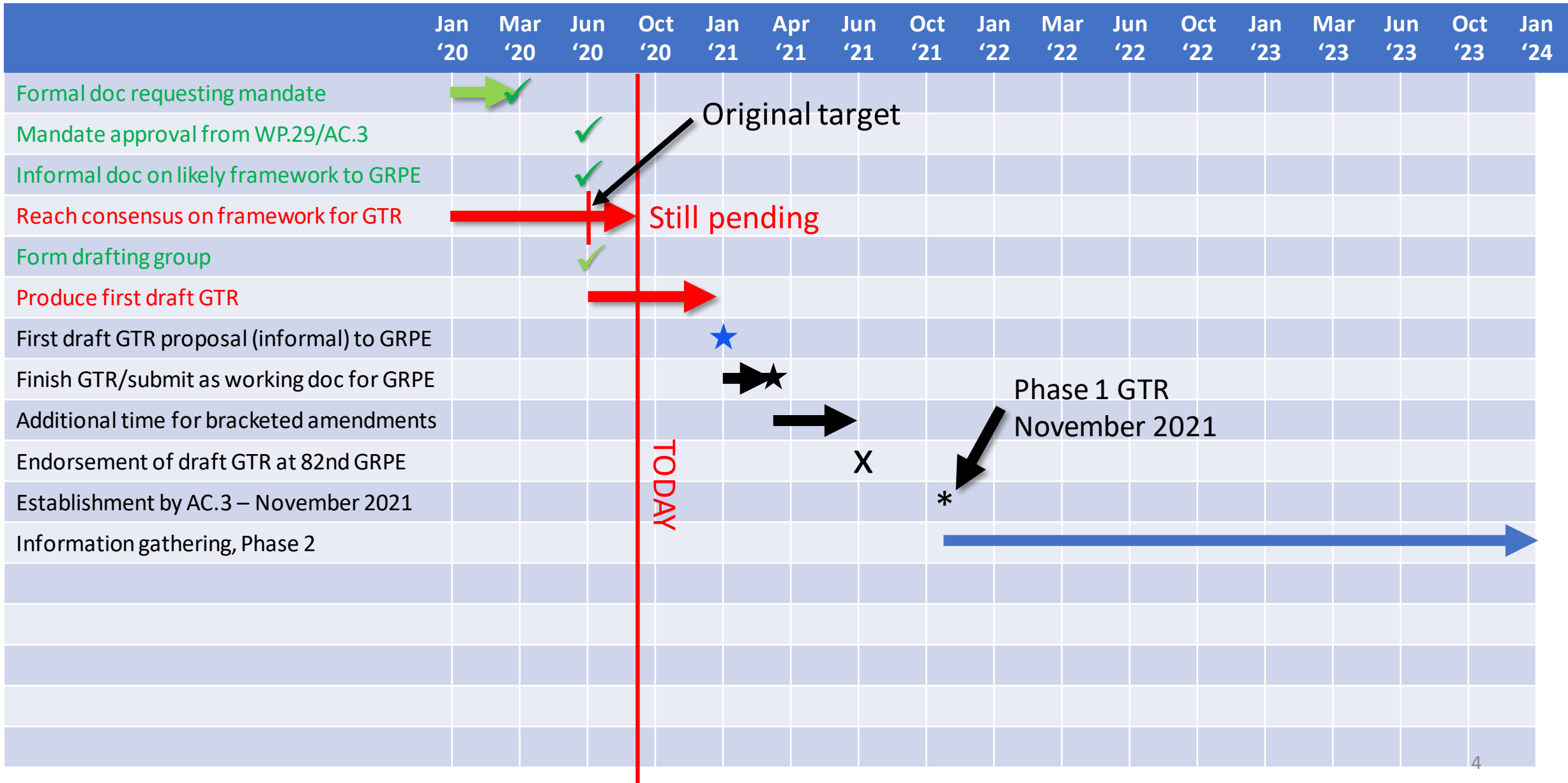
# GTR Framework for Phase 1, as discussed at EVE 36

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.**
- (vii) January 2021- March 2021
  - 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.
- (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)



# 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<sup>nd</sup> GRPE:
  - October 2020
  - November 2020
  - December 2020