

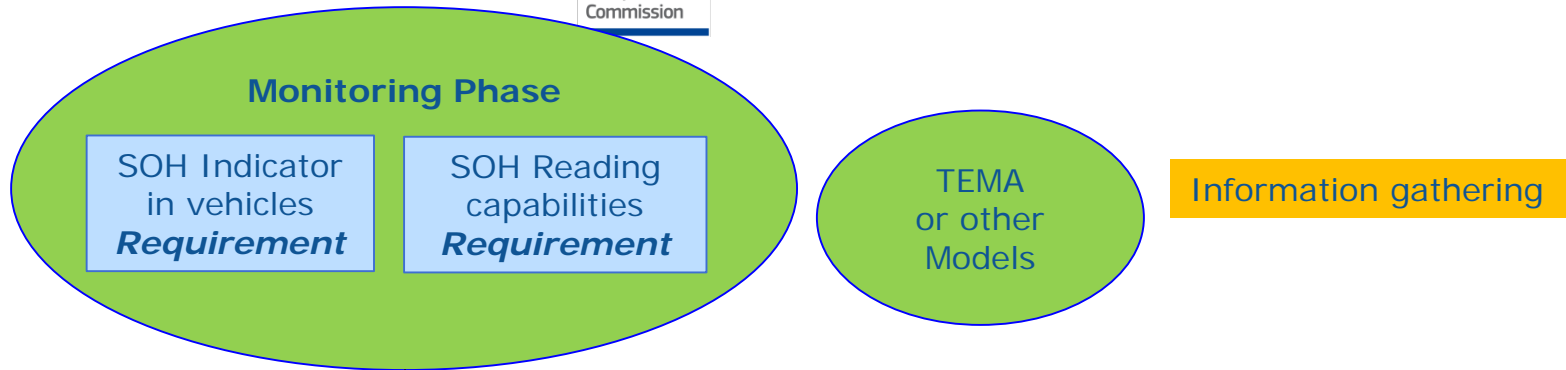


In-vehicle Battery Durability: EC proposal

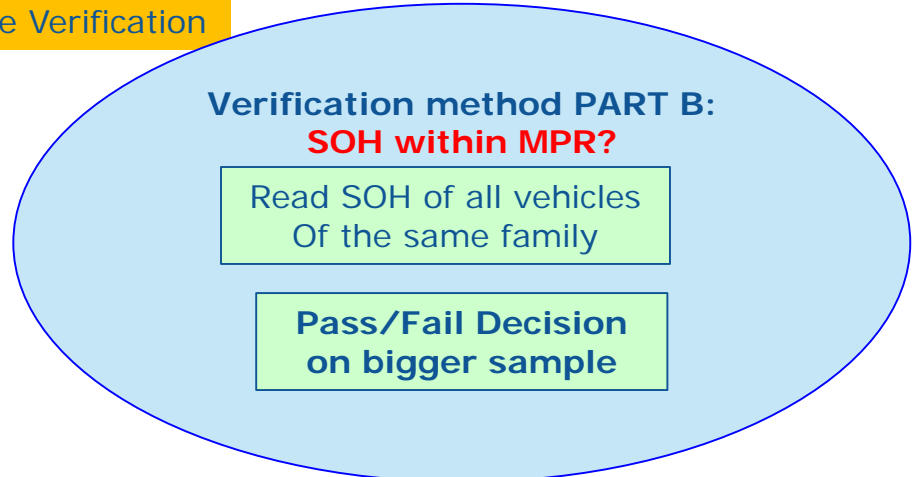
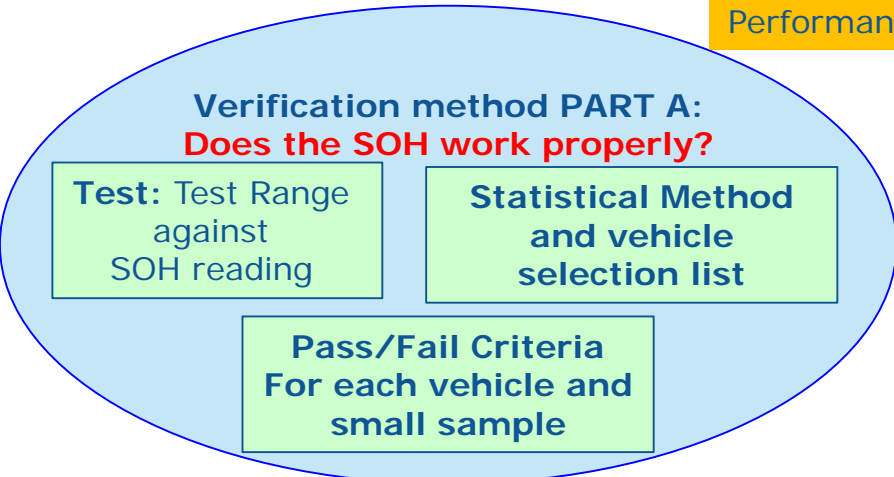
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EVE IWG 8-9 Sept 2020

Last proposal



Performance Verification



Both capacity and range needed as metrics

Range:

Important for performance of vehicle and as accurate measure for second-hand sales of vehicles

For PHEV important as it will also determine CO₂ and pollutant emissions

Capacity:

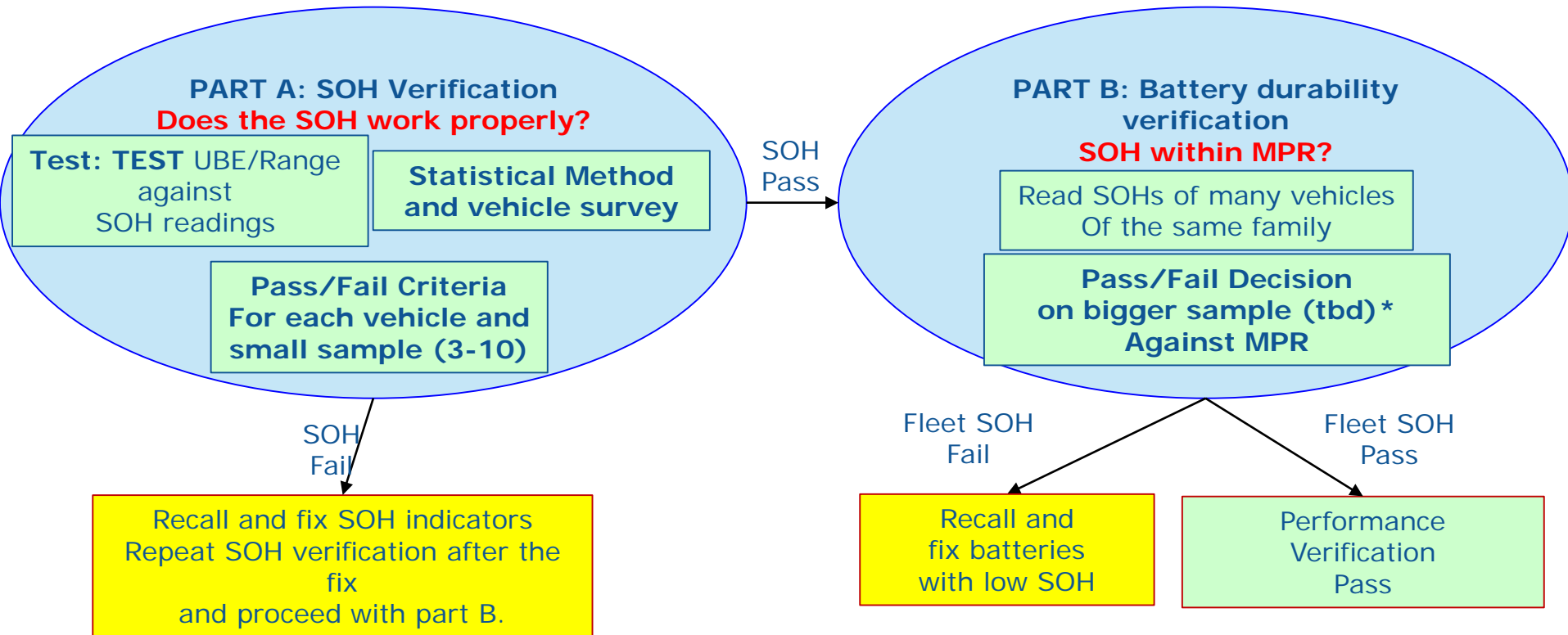
Important for second-life of vehicles

More stable as quantity to show on-board for consumer information

New proposal



Battery Performance Verification For capacity and range



*If sample is below x, then the vehicle survey shall be used

PART A: Elements needed

Information Elements

- *Annual report on warranty claims, repairs for batteries to be provided by manufacturer to the authorities*
- *List of faulty vehicles found during ISC vehicle selection*

Definition of SOH

- *Algorithm can be OEM proprietary, but verifiable*

PART A: Selection Criteria for vehicles

Vehicle examination and interview with owner

- *Using the survey*
- *Regular and appropriate maintenance (with proof)*
- *No unauthorised major repair to engine or vehicle*
- *No unauthorised change or repair of battery*
- *No evident safety problems*

PART A: Testing

- *Families with similarities on their battery characteristics/drivetrain need to be defined*
- *Testing performed every 2 years throughout lifetime of vehicle*
- *Method of testing according to what was used for the original definition of range/capacity*
 - **WLTP in Europe**
 - **USA?**

PART B: Data collection

- *Data may be collected yearly*
 - **from all registered vehicles during Periodic Technical Inspection or**
 - **over the air or**
 - **through a selected number of vehicles**
- *Number of Vehicles to be included in the sample shall be based on risk analysis*
- *If number of vehicles is less than x , then the vehicle survey shall be used to exclude vehicles*

PART B: Verification of Fleet SOH

- *Appropriate analysis to show if fleet SOH is above the Minimum Performance Requirements*
- *Recall may be necessary for those vehicles with SOH below MPR only, but to be agreed with approval authority*

Conclusion

- *New method proposed is simpler and avoid taking decisions on the battery durability based on testing few vehicles*
- *Testing of few vehicles is required to prove whether SOH is accurate*
- *Both capacity and range shall be verified*
- *Collection of SOH from many vehicles can support analysis of fleet average values*



Thank you for your attention!