

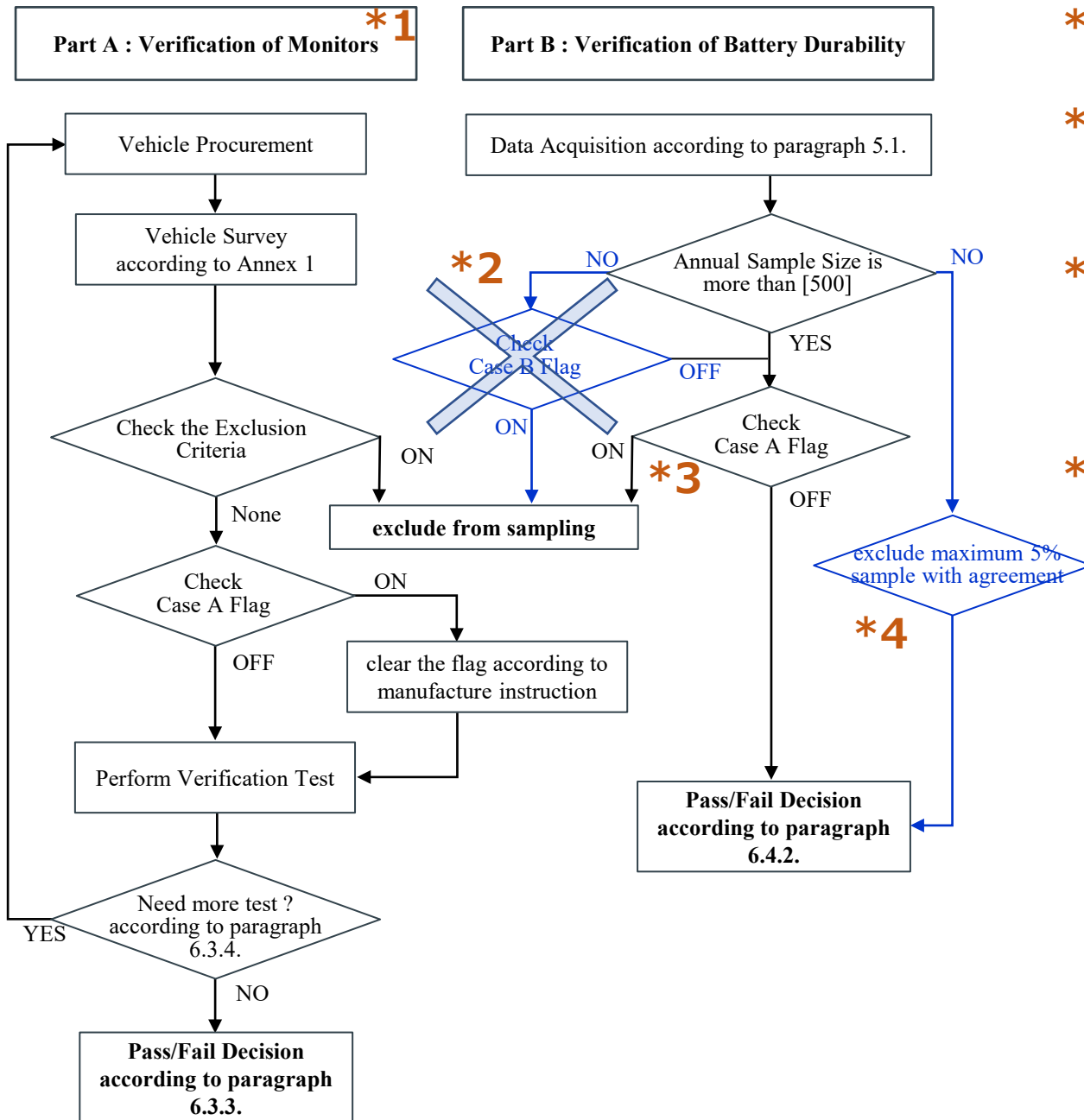
Japan Positions for Battery Durability GTR @EVE50

21. June.2021

Japan Positions on Open Issues

Open issues	Brief description	Japan Positions	notes
Case A flag	Ensure the accuracy of SOCE/SOCR	under Part A : support original flow under Part B : exclude Case A flag ON vehicle from sample but <u>require additional information data (explained in page 4)</u>	
Case B flag	Identify the abnormal usage	OK to remove with applying the virtual mileage concept	hard to define the "abnormal"
Virtual mileage	Consider V2X usage	Supports USEPA proposal with slight modification. Clear definition of "V2X" is necessary(plan to provide the concrete text during 51 st IWG meeting)	slight modification : the denominator may not be unique electric consumption of each specific configuration
UBE calculation	GTR shall provide the clear process to determine the performance parameter	WLTP : hope to provide concrete calculation process during 51 st IWG meeting	
		CFR : US intends to provide the calculation formula in the Phase 1 ?	

Proposed Flow Chart



***1** : supports originally agreed within IWG

***2** : OK to remove with applying the virtual mileage concept

***3** : exclude Case A flag ON vehicle from sample but require additional information data

***4** : supports the proposal by EC

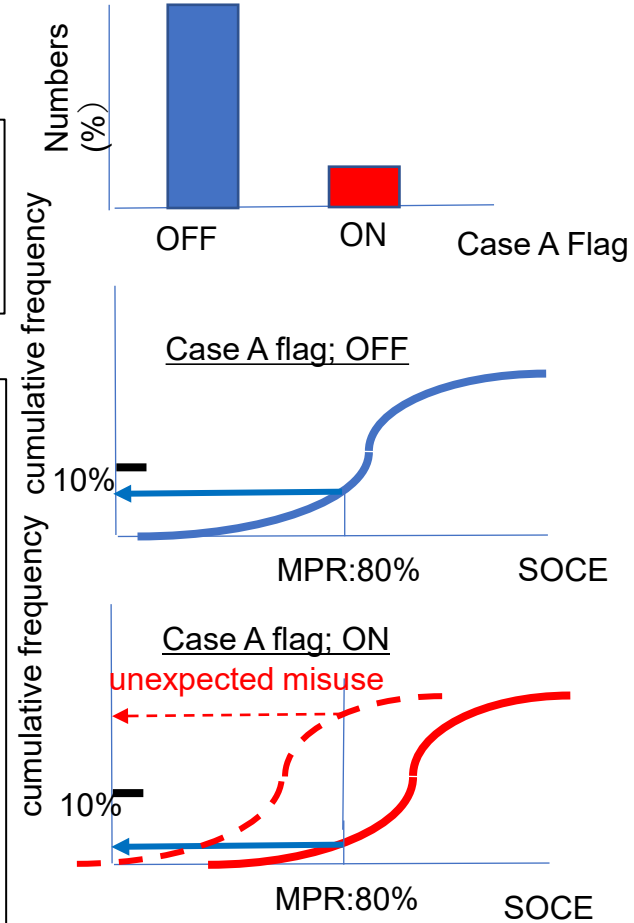
Blue : no change from originally agreed within IWG
Green : NEW

Case A flag

Japan Positions

under Part A : support original flow
under Part B : exclude Case A flag ON vehicle from sample but require additional information data

- The case A flag information is required and when the flag is ON, the vehicle data shall be excluded from the samples for Part B.
- This is because;
1. the Case A flag ON indicates that the SOCE has not been updated for more than one month, so these data are not accurately monitored,
 2. the degradation level would be qualitatively better than at time of Part B,
 3. therefore the SOCE distribution of Part B is expected to shift to the better side.
- On the other hand, concern about unexpected misuse (as shown in right picture) of Case A flag was raised.
To avoid that, the following additional information should be required to detect such misuse, then it contributes the practical and fair requirement



When SOCE is close to or less than MPR, make Case A flag ON intentionally. This causes the SOCE distribution profile with Case A flag ON (red dotted line) shifts to worse side

<Proposal> Required information data (additional)

- SOCE and the (virtual) mileage at the time of the last update even when Case A flag is ON

Virtual Mileage

Japan Positions

Supports USEPA proposal with slight modification.

Clear definition of “V2X” is necessary(plan to provide the concrete text during 51st IWG meeting)

- The idea of virtual mileage is proposed and understood based on the idea that it is necessary to properly evaluate the new value of EV which contributes to grid stability and carbon neutrality by off-board power supply.
 - The virtual mileage is an idea to reflect the discharge electric energy of V2X. The US proposal to add V2X to the actual travel mileage is in line with the purpose, so Japan supports the US proposal (the denominator may not be unique electric consumption of each specific configuration).
 - On the other hand, following concerns about definition of “V2X” are raised and Japan plans to provide the concrete text during 51st IWG meeting.
- 1.Since the definition of V2X (*) has not been discussed at EVE IWG, it is necessary to have a common understanding. (* Current GTR draft only describes V2G: vehicle to Grid)
 - 2.V2X is the concept of supplying electricity for use outside the vehicle, and is different from the discharge electricity from battery when the vehicle is stopped (not used for driving).
 - 3.If it is possible to measure the amount of discharge for the external power supply, that would be ideal, but a realistic method would need to be discussed, including whether it is possible to do and to design by each manufacture.

(reference)V2X;

V2G (Vehicle-to-Grid) for system stabilization by discharging electricity from storage batteries, **V2H** (Vehicle-to-Home, Back Up Your Entire Home) for utilizing storage batteries as emergency power sources in times of power failure, and **V2L** (Vehicle-to-Load, only connected loads and home appliances are supplied) for use in times of power failure and/or outdoor activity in normal times.