Status report of OBD Task Force

24th Sept., 2019

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Schedule of OBD TF

2019

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
GRPE	★10-11				★22-23							
WLTP IWG				★15-18	★20-21				★23-27 ○**Report the status**			
OBD TF		★25		★10 f2f	★17		★18		★27	★30 f2f ★1 f2f	★28	★28-29 f2f

Step 1: Discussion based on UNR83 text

Technical discussion

Drafting

2020

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
GRPE	★16-17 ●**Submit ID**		●**Submit WD**			★TBD ●**Submit ID to modify WD, if necessary/Approval**						
WLTP IWG	★13-14 ●**Agree on ID proposal**	★TBD ●**Agree on GTR text for WD**		★TBD		★TBD ●**Agree on final text**						
OBD TF	**Step 1: Discussion based on UNR83 text**				★TBD f2f?	★TBD	★TBD			**Step 2: Update requirements, if necessary**		

Drafting/plan next step, if necessary

3 meetings were held after 26th WLTP IWG (No status report in 27th WLTP IWG)

Status of OBD TF (1/2)

Main Discussion Points		Stance				Status
		EC/JRC	UTAC	ACEA	JPN	
Definition of "OBD"		Agreed to revise "OBD" definition and use term "OBD system"				Close
Definition of "emission control system"		Under discussion	Under discussion	Update	Under discussion	Under discussion
Test vehicle		Under discussion	No Position	Vehicle H	Worst case vehicle	Under discussion
Harmonised demonstration cycle	Monitoring	4 Phase	No Position	4 Phase WLTC Or alt. cycle	2×3Phases WLTC	Under discussion
	Emission	4 Phase	No Position	3 Phase Or 4 Phase	4 Phase WLTC (check threshold with both 3 Phase & 4Phase)	
	Notes	Japan propose to use L1/2 concept L1a- 4Phase, L1b- 3Phase, L2- harmonised cycle				
Number of failure modes to be tested		No change in maximum number to be tested Correct the inconsistency between different paragraphs				Text discussion
Test mode of hybrid vehicles		Agreed to test with charge-sustaining mode				Close
Demonstration procedure of faults with default action which immediately exceeds OBD threshold		Under discussion		Use CARB method	Against using CARB method Need technical explanation & TA's approval	Under discussion

Status of OBD TF (2/2)

Main Discussion Points	Stance				Status
	EC/JRC	UTAC	ACEA	JPN	
***Fault code erasing in cold regions and high altitude**	Under discussion		Allow erase <-7°C and 2440 m<	Against to erase	**Under discussion**
***Use of special denominator**	Under discussion		OEMs may request to use special denominator with Need technical explanation & TA's approval	No position	**Under discussion**
***Definition of Limp-home mode, "permanent", and clarification of MI illumination**	Under discussion		Proposed to add definition and change wording for clarification	Under discussion	**Under discussion**
Inclusion of IUPR	Under discussion?		Under discussion?	Exclude IUPR from WLTP OBD	**Under discussion**
OBD family	Agreed with UNR83 concept. Re-wording is considered to avoid "extension".				**Text discussion**

*Informal documents submitted for 79th GRPE (May 2019)

Still under discussion in main discussion points

Definitions

■ Agreed definition of “OBD system”

2.13. "*On-Board Diagnostic (OBD) system*" means in context of this regulation (or this GTR), a system on-board the vehicle which has the capability of detecting malfunctions of the monitored emission control systems, identifying the likely area of a malfunction by means of fault codes stored in computer memory, and illumination of the Malfunction Indicator (MI) to notify the operator of the vehicle.

■ Under discussion definition of “Monitored Emission control systems”

2.4. "*Monitored emission control systems*" means, in the context of OBD, any electronic emission-related powertrain controller or any electronic emission-related component.

■ UNR83 definition of “Emission control system”

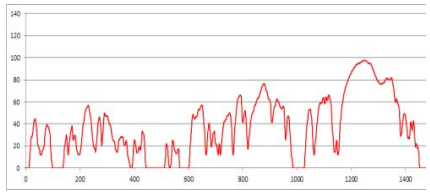
2.4. “*Emission control system*” means the electronic engine management controller and any emission-related component in the exhaust or evaporative system which supplies an input to or receives an output from this controller.

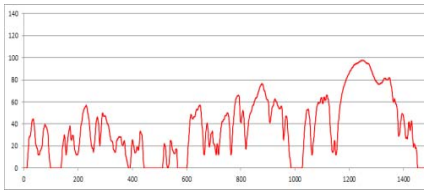
Harmonised demonstration cycle proposal (JPN)

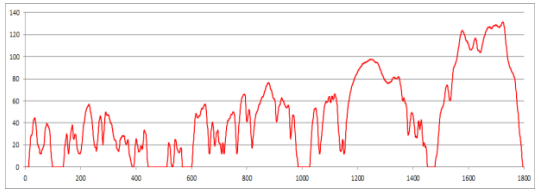
Proposal A

←Preconditioning→ | ←Emission Measurement→

L M H | L M H | L M H ExH







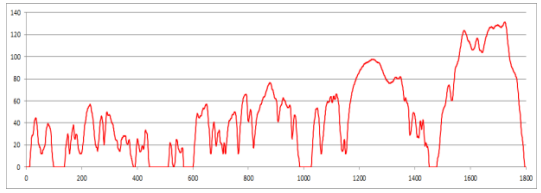
Requirement for Lv.2→ ←Failure shall be detected→ ←MIL shall be illuminated→

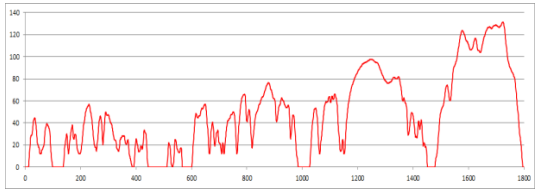
*It is possible to add ExH at the end of last preconditioning cycle to meet the requirement for 4phase preconditioning for emission measurement cycle (failure shall be detected before starting ExH phase)

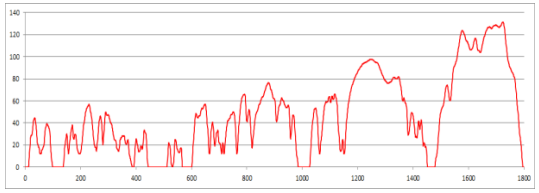
↑ Key OFF

Proposal B

L M H ExH | L M H ExH | L M H ExH







Requirement for Lv.2→ ←Failure shall be detected→ ←MIL shall be illuminated→

↑ Key OFF

JPN Comment: JPN can accept proposal B since proposal B can judge whether the vehicle meets JPN requirement. But this may be too stringent requirement. JPN propose proposal A for harmonisation. This can also judge whether the vehicle meets EU requirement.

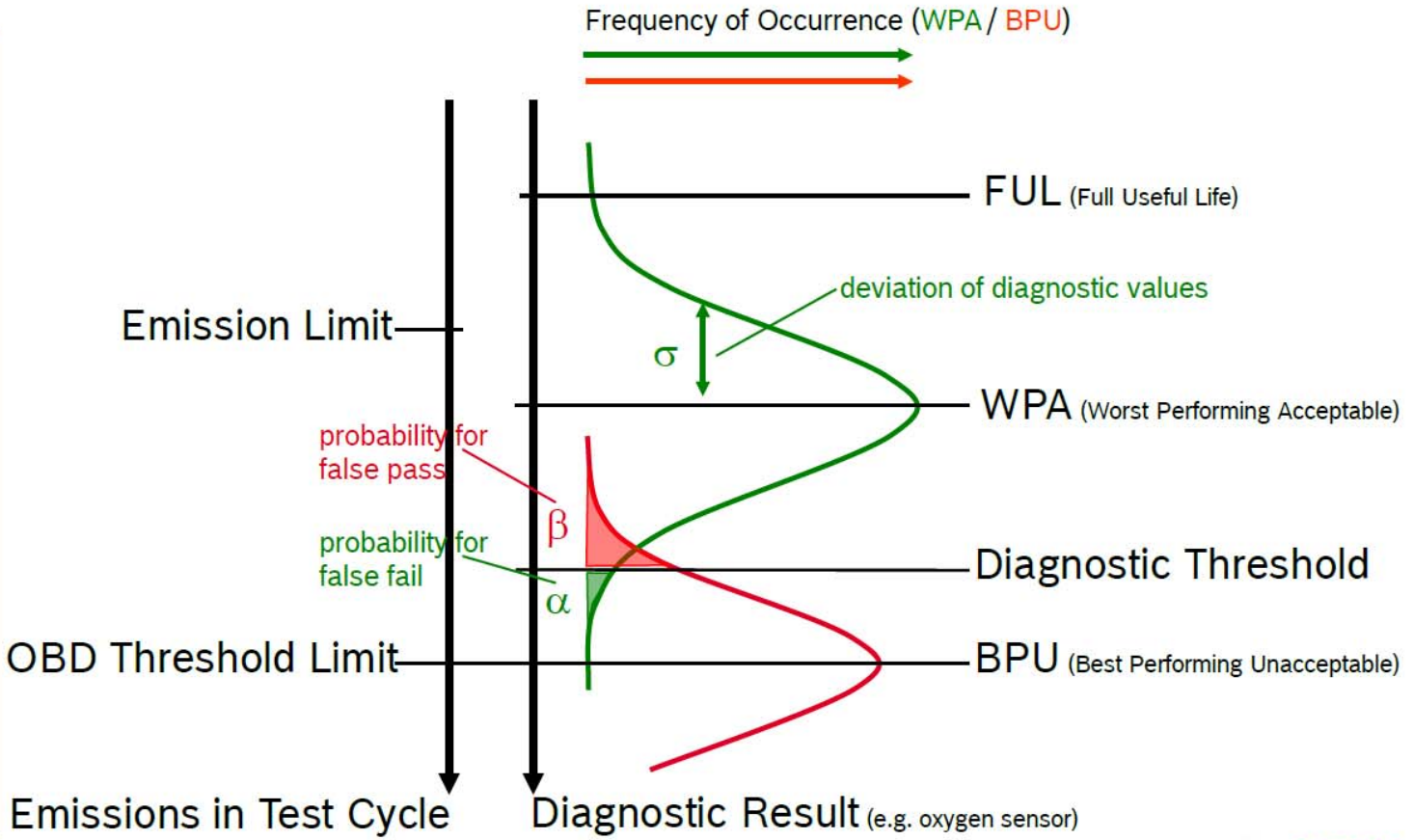
Demonstration test

■ Demonstration of faults with default action which immediately exceeds OBD threshold (Proposal by ACEA/Bosch)

Malfunctions which cause default action with increased emissions
WPA & BPU & Diagnostic Threshold

CARB/OEM terminology:

- *Best Performing Unacceptable* (BPU): This term refers to a system/component that yields performance measurements (as determined by the monitoring strategy) that are failing just beyond the malfunction criteria established by the manufacturer (i.e., the diagnostic or fault threshold). Components or systems operating at this level of deterioration or worse should be detected as malfunctioning by the OBD system and illuminate the MIL.
- *Worst Performing Acceptable (WPA):* This term refers to a system/component with performance that has deteriorated to the limit of the manufacturer's criteria for acceptable performance. The MIL should not be illuminated for a component performing at this level of deterioration or better. A component or system performing worse than this level of deterioration would not be within the manufacturer's criteria for acceptable performance, but may still be good enough to pass the diagnostic (i.e. no MIL illumination).



See WLTP-28-12e_app2 for details

Thank you very much
for your attention.