



GFV-TF – amendments to R49  
"OBD for EURO VI"

Informal document No. GRPE-58-21  
(58th GRPE, 8-12 June 2009,  
agenda item 2(d))

# UN-ECE GFV informal group Task-Force "OBD" for gas fuelled engines"

Status Report from the GFV informal group  
11 June 2009

GFV-TF – amendments to R49  
"OBD for EURO VI gas-fuelled engines"

## GRPE Jan.09 decision

- Extend the mandate given to the GFV Task-Force to finalise Annex 9B of R49 rev.4 and create an Annex 9C specifying the technical provisions for OBD in-use performance monitoring;
- Present a formal amending proposal to GRPE 58 (June 2009) in view of adopting the amendments by WP29 in November 2009
  - Formal Document ECE/TRANS/WP.29/GRPE/2009/14

GFV-TF – amendments to R49  
"OBD for EURO VI gas-fuelled engines"

## Applicability of Annex 9B & 9C

- The TF agreed to limit the scope of annex 9B to gas engines and not to address dual- or bi-fuelled engines
- The TF agreed not to further extend Annex 9B to other fuels such as gasoline and ethanol
- The TF agreed to limit the scope of annex 9C to Diesel engines

GFV-TF – amendments to R49  
"OBD for EURO VI gas-fuelled engines"

## Amendments to be finalised by GRPE (Annex 9B)

- In order to avoid any misunderstanding the GFV-TF suggests to introduce a note specifying that the provisions of item 1 shall apply to all electric-electronic components, even if they belong to any of the monitors described in the other items of appendix 3.
  - GRPE to validate
- In case of gas-engines, the EGR system's ability to maintain the commanded EGR flow rate, detecting both "flow rate too low" and "flow rate too high" conditions and the turbo boost system's ability to maintain the commanded boost pressure, detecting both "boost pressure too low" and "boost pressure too high" conditions may be either an emission threshold monitoring or a performance monitoring
  - The GFV-TF suggested to leave time for the contracting parties to decide and ask the decision be taken during this GRPE
- The GFV-TF suggests that in case of gas engine, misfire that may cause catalyst damage (e.g. by monitoring a certain percentage of misfiring in a certain period of time) be monitored through performance monitoring
  - GRPE to validate

GFV-TF – amendments to R49  
"OBD for EURO VI gas-fuelled engines"

# REQUIREMENTS FOR CALCULATING IN-USE PERFORMANCE RATIOS

## Annex 9C

- **For each monitor  $m$ , the in-use performance ratio is calculated with the following formula:**  
$$\text{IUPR}_m = \text{Numerator}_m / \text{Denominator}_m$$
- **The proposed rules for incrementing the numerator and denominator and general denominator are inspired by the US legislation**
- **Groups of monitors to be considered are listed in a specific appendix that has been set in a consistent manner with appendix 3 to Annex 9B**

GFV-TF – amendments to R49  
"OBD for EURO VI gas-fuelled engines"

## Requirements for storing and communicating in-use performance data

- Communication of the in-use performance data is a new use-case and is not included in the three existing use-cases which are dedicated to the presence of possible malfunctions
- Information about in-use performance data consists of
  - (a) the VIN (vehicle identification number),
  - (b) the numerator and denominator for each group of monitors
  - (c) the general denominator,
  - (d) the value of the ignition cycle counter,
  - (e) the total engine running hours.
- Information shall be retrieved by using the same communication protocols as in ANNEX 9B