WWH-OBD

45th session of GRPE
Geneva 15 January 2003
Status report
Meetings

- **2\textsuperscript{nd} WWH-OBD meeting**
  - Paris November 2002
  - 2 days meeting

- **3\textsuperscript{rd} WWH-OBD meeting**
  - Geneva January 2003
  - 1 day meeting

- **4\textsuperscript{th} WWH-OBD meeting**
  - Windsor (Canada) April 2003
  - 2 days meeting
Summary

Definitions / Scope
- Heavy investment of the group to facilitate further developments
- Definitions will remain specific to the OBD-GTR

Major points currently under work
- Failure classification and associated alerts
- Communication issues
- Thresholds

Timing
- Editorial committee to start its work in January
- No delay expectation at the present time
**Definitions**

*Already agreed definitions*

- **General definitions**
  - OBD
  - Engine system
  - Malfunction

- **OBD specific definitions**
  - Malfunction indicator
  - OBD test cycle
  - Operating sequence
  - Deteriorated Component
  - Standardised information
  - Unrestricted information
Proposed definition of OBD

‘On Board Diagnostic system (OBD)’ means a system on-board a vehicle or engine which has the capability

- of detecting malfunctions or failures,
- of indicating their occurrence by means of a malfunction indicator, and
- of identifying the likely area of malfunction by means of fault codes stored in computer memory;

Note:

For the present stage of the GTR, OBD definition is restricted to emission related malfunctions /failures of the engine system
Failure classification
2 types of classification

- Classification per importance to the legislator
  - From failures not affecting the environment to failures needing an urgent action
  - Codification of the recorded failure appropriately

- Technical classification
  - Electrical failures
  - Failures monitored to emissions
  - Failures monitored to other functional criteria
Hierarchy of alerts

- The group is currently looking to determine
  - The failures that justify an alert of the driver under driving conditions
  - The failures that will provide an alert when Key ON / engine OFF
  - The failures accessible through a remote procedure (access to the OBD memory)

- The constraints taken under consideration
  - Coherence with the failure classification
  - The need of non-ambiguous information for controls by the authorities
Alert to the driver

Environmental considerations the group will have to consider

- Is it better to activate the MI
  - On a presumptive fault (manufacturer defined), or
  - Wait until a definitive emission related fault activates the MI
Communication protocols
Agreed principle

- 2 sets of protocol communication possibly available today
  - The current standard used for LDVs
  - The current standard used World-Wide for general communication purposes in the HDV world

- WWH-OBD: One single communication protocol
  - Able to address all future needs (2010 and later)
  - Need for a new standard
  - Requisites and detailed content available by June 2004
  - Final standard available early 2006
  - Concern: those vehicles at the LDV border (other standard)
**Communication protocols**

**Agreed timeline**

- **Timeline (short term):**
  - First draft requisites available to ISO/SAE late January
  - First meeting of the ad-hoc ISO/SAE mid-February to provide answers/comments
  - Second meeting of the ad-hoc ISO/SAE mid-March to finalise a 1st draft answer
  - Validation by the 4th WWH-OBD of the achieved work and commitment for future work.
**Thresholds**

**Agreed principle**

- **To address the political requests**
  - Additive or multiplicative WW-set of factors will be defined by the group that could be added to the regional set of emission limits to get regional WW-OBD threshold.

- **To address technical constraints**
  - A WW-lower bound will be defined by the group that will maintain the above calculated regional WW-OBD threshold technically feasible.
WWH-OBD

**Thresholds**

*WW-set of factors*

- The factor will be set by considering consequences of malfunctions on Air-Quality

- Possible options for further decisions
  - Option 1: WWH-OBD is aiming at catching individual outliers. WWH-OBD is essentially designed to improve maintenance and repair where the factor has to relate to acceptable roadworthiness levels.
  - Option 2: WWH-OBD is aiming at catching non-complying productions. WWH-OBD is essentially designed as an in-use conformity tool such that the factor is close to the certification levels.