UNECE GRPE Informal Group on Environmental and Propulsion Performance Requirements of L-cat Vehicles (EPPR L-cat) State of Play

Adolfo Perujo (IWG chairman)
EPPR meetings in 2019

- 08-09 Jan 2019: EPPR 26th (GRPE Geneva summary; GTR2 & OBD2)
- 19-22 Feb 2019: EPPR 27th (JRC Ispra; GTR2 & OBD2)
- 26-29 Mar 2019: EPPR 28th (Geneva; GTR2 & OBD2)
- 22-23 May 2019: EPPR 29th (Geneva; GTR2 & OBD2)

Web conferences

NEXT F-2-F MEETING: EPPR 30th 15–18 October 2019 (Location: CARB- tbc)
Amendment 4 to UN GTR 2

• Renewed mandate to the IWG EPPR L-cat (45th session)
  ▪ AC.3 adopted ECE/TRANS/WP.29/2015/113 (ECE/TRANS/WP.29/AC.3/36/Rev.1)
  ▪ Mandate was extended for the period 2016 - 2020

• Mandate:
  ▪ harmonized test procedures\(^\text{§}\) for two-wheeled vehicles equipped with conventional combustion engine technology but the objectives also includes three-wheeled vehicles and other propulsion types in the next stage of work.
  ▪ the scope of discussions does not cover light four-wheeled vehicles on emission related GTRs

\(^\text{§}\)to establish amendments to UN Global Technical Regulation (UN GTR) No. 2 (Worldwide harmonized Motorcycle emissions Certification/test procedure (WMTC)) with respect to Environmental and Propulsion unit Performance Requirements (EPPR),
Amendment 4 to UN GTR 2

• **Mandate (cont.):**
  - the IWG will continue to **first develop requirements for 2-wheeled vehicles** with conventional combustion engine technology.
  - Progressively other vehicles categories and other propulsion unit types will be considered to be included.
Amendment 4 to UN GTR 2

• Status:
  - The IWG has issued Informal Documents (draft text) indicating the progress toward issuing an amended GTR2
  - The IWG has issued a working document (formal text) containing the Amendment 4 to UN GTR No. 2(*) for consideration at the following session of GRPE (May 2019) (ECE/TRANS/WP.29/GRPE/2019/12)
  - Informal document GRPE–79–21e: Consolidated version with the editorial corrections and the inclusion of the Statement of technical rationale and justification

(*) on the measurement procedure for two-wheeled motor cycles equipped with a positive or compression ignition engine with regard to the emissions of gaseous pollutants, CO2 emissions and fuel consumption.
Amendment 4 to UN GTR 2

• **Purpose:**
  - entire revision of GTR No 2 to dedicate separate sections to test types I (tailpipe emission after cold start), II (idle / free acceleration emissions) and VII (energy efficiency)
  - update the GTR for technical progress.
  - text as closed as possible to EURO 5\(^{(*),+}\) (based text provided by the European Commission - EPPR-11-15\(^{(§)}\) )


Amendment 4 to UN GTR 2 - Scope

Two-wheeled motor vehicles equipped with a propulsion unit in accordance with the following table:

<table>
<thead>
<tr>
<th></th>
<th>Vehicle with PI engines (Petrol)</th>
<th>Vehicle with CI engines (Diesel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I Test</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Type I Test particulate mass</td>
<td>Yes (only for DI)</td>
<td>Yes</td>
</tr>
<tr>
<td>Type II Test</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Type VII Test</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The EPPR IWG may add other vehicle types in a second stage.
Some CPs were having concerns for implementing Class 0 vehicle in domestic regulation due to different maximum speed. Hence it was decided to leave the details of Class 0 vehicles as Contracting Party option.
Amendment 4 to UN GTR 2

Performance Requirements:

• Due to the disparity of level of stringencies present in different regions of the world, it was decided to define performance requirements at two levels:
  • Principal performance requirements (or the most stringent ones for two-wheeled motorcycles) GTR 2 is largely harmonised with Reg. (EU) 168/2013 (EURO 5)
  • Alternative performance requirements (or less stringent) and corresponding to performances already in application in some Contracting Parties.
Reference fuel.

The principal performance requirements of this UN GTR are based on the use of reference fuels:

- For Type I Principal norms, the reference fuel for PI vehicles shall be either E0 or E5.
- For Alternate norms, regional reference fuels available with contracting parties can be used for Type I test (Alt A = India BS IV, Alt B = Euro 4 Alt C = Euro 3).
Amendment of UN GTR 18 to include OBD 2

• **Purpose:**
  - To develop functional aspects of On-Board Diagnostic (OBD) systems.

• **Mode of Operation:**
  - Creation of a “Corresponding Group” within the IWG EPPR L-Cat (agreed by all parties) to concentrate in the development of OBD 2
  - The speed up of the process necessary because of a CP (i.e. JPN) required the development of OBD 2 for regional legislation (timing)
  - The CG is lead by a vice-chair (Mr MATSUKAWA - JPN)
  - The base document is again the text referring to OBD 2 in EURO 5
  - Final responsibility of the work and the submission of Informal/Working documents remains with the EPPR IWG
Amendment of UN GTR 18 to include OBD 2

- Content:
  - The work of the OBD 2 (amendment to GTR 18) is also based on the European EURO5 regulation

<table>
<thead>
<tr>
<th>I. Statement of technical rationale and justification</th>
<th>Part 1</th>
<th>Part 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Introduction</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>B. Procedural background and future development of the gtr</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>C. Existing regulations, directives and international voluntary standards</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>D. Discussion of the issues addressed by the gtr</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>II. Text of the global technical regulation</th>
<th>Part 1</th>
<th>Part 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Purpose</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>2. Scope and application</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>3. Definitions</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>4. List of acronyms and symbols</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>5. General requirements</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annexes</th>
<th>Part 1</th>
<th>Part 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Functional aspects of On-Board Diagnostic (OBD) systems</td>
<td>Yes Except for IUPR and access to OBD information</td>
<td>Yes Only for IUPR and access to OBD information</td>
</tr>
<tr>
<td>2. Minimum monitoring requirements for electric circuit diagnostics</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>3. In-use performance ratio</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>4. Selecting criteria for vehicles with respect to in use performance ratios</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>5. On-board diagnostics family for IUPR</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>6. Test type VIII requirements: OBD environmental tests</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>7. Propulsion unit family definition with regard to on-board diagnostics</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>8. Administrative provisions</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>
Amendment of UN GTR 18 to include OBD 2

• Progress:
  ▪ **Informal document GRPE-79-23**: This is the consolidated document addressing the phase 1 of the work of the IWG and in particular of the work of the Correspondent Group as defined by the IWG in its formation (EPPR-24 and its term of reference.
  ▪ Discussion of phase 2 is divided into 3 sessions and is planned to be completed by Mar 2020.
  ▪ Working document including phase 1 and 2 is planned to be submitted to GRPE in Jan 2021.
  ▪ Amendment of GTR No.18 is planned to be adopted by WP29 in Jun 2021.
IWG EPPR L-cat work outlook

• Next areas of activities:
  ▪ **Durability – Decided by CPs & stakeholders**
  ▪ Propulsion Unit Performance
  ▪ GTRs to be transposed into UN Regulations (?)

[possibly in parallel]

https://wiki.unece.org/pages/viewpage.action?pageId=63308245
Any questions?
You can find me at adolfo.perujo@ec.europa.eu