Meeting Minutes PMP 53rd Meeting

9th Jan 2023, 14:30-17:30 CET

Palais des Nations (Room XXIV) and WEBEX

DRAFT

0. Introduction & Welcome

ca. 128 participants were welcomed by Barouch Giechaskiel (BG, JRC, PMP Chairman) and Rainer Vogt (RV, OICA/Ford/Technical Secretary PMP).

1. Review Meeting Minutes last PMP meeting 13.12.2022

RV reviewed the meeting minutes of the last PMP Meeting, 13.12.2022 which are available at the UNECE website. Comments may be sent to RV/BG within the next two weeks.

2. Overview of submitted Brakes GTR

Carlos Agudelo (LINK, CA) summarized the work of the sub-groups. CA gave a systematic overview of the method, including flow charts, sketches of the test system requirements, test preparation, WLTP temperature checks, WLTP cycle quality checks, cooling flow adjustment, measurement of PM, filter weighing, PN, mass loss of brake parts.

Bill Coleman (OICA, BC) commented on the terminology of off-road versus non-road vehicles.

3. OICA presentation on the Brakes GTR

BC presented on behalf of OICA: OICA supports heavily the development of the GTR brake. Regen braking method was only available at PMP level in the close to final version since Dec 14. Certainty is needed for industry. The OICA proposal for non-friction braking is viewed positively, but only for an updated version of the GTR. OICA therefore does not support submission of the GTR proposal by PMP in its current version to GRPE 87 for adoption.
OICA proposes to move the adoption of the GTR to the GRPE 88 meeting in June 2023, thus enabling adoption of a complete and robust piece of legislation.
Due to the short deadline OICA submitted the second set of detailed comments which are available on the PMP meeting website of this meeting.

Penny Diliara (PD, EU COM) thanked everyone for proceeding with GTR and asked what is the problem to adopt it, now?
BC: The technology decisions to produce the vehicles in 2025 need to be taken now. Uncertainty in changes of the GTR until 2024 are not acceptable.

PD in chat: Thanks for the explanation. Our preference is to vote this now and do all efforts to vote an amendment in June (but this would require the help of everyone to be able to achieve it).

TG questioned the need for revising certain parts of the proposed GTR as presented by OICA (slide 5 of OICA presentation). Specifically, it was mentioned that the proposed bedding procedure has proved to be the most efficient – alternatives were proven inadequate in some ILS tests. The WL/DM concept used data from more than

300 tests to be finalized – indeed a revision might be required for lightweight materials when more data become available. Regarding LCVs, it was mentioned that the method is equivalent to other LDVs. RV clarified that OICA concerns regarding LCVs relate to the use of F values.

Helge Schmidt (HS, TUEV Nord): Germany supports the adoption. Tab 5.1. (Friction braking shares) should be reworked at later stage.

David Miles (DM, UK DfT) supports submission. More vehicle specific coefficients can be amended in the future.

4. JRC presentation on comments received (Brakes GTR)

Theo Grigoratos (TG, JRC) introduced the revisions of the GTR DRAFT of Dec 14. The material formulation shall be included in the brake family definition.
Ravi Vedula (RVe, Brakes India) asked whether the material formulation shall also be considered also for drum brakes and not only for disc brakes – TG confirmed it was an omission in the first place.

TG continued with the update on non-friction coefficients: some GRPE sponsors questioned applying 0.63 to ICE vehicle with battery low capacity. It was considered that this would concern only less than 5% of “mild-Hybrids”. JRC proposed changing the voltage range, i.e. between V > 20V and < 60V as “mild-Hybrid cat 1” criterion. Vehicle with 12V to 20V battery will not use the 0.63 factor, but 1.0.

HS, DM and PD stated support of the new “Mild-Hybrid” definition.
BC stated that OICA was not involved in the definition of >20V and discussion.
OICA wanted to know what is the future of the GTR in making a UNR (‘58 agreement). How would the “brake” measurement translate to emissions at a vehicle level?

Recommended values for the enclosure were removed, considering OICA comments.

Heinz Bacher (HB, OICA, BMW) clarified that OICA requested fixed values, not ranges. It might turn out that recommended values are not optimum to reduce variability.

Jürgen von Wild (JvW, OICA, BMW) asked how to be sure that the next amendment will be supported in June 23?

BG closed the GTR topics mentioning the need to reach an agreement with OICA and to confirm that PMP will work on the next amendment with “case” specific friction share coefficients

5. DfT / Ricardo brakes and tyre wear study

Claudio Chesi (UK DfT) mentioned the increasing interest in Non-Exhaust Emissions in the UK. PM2.5 emission projection for UK is showing a strong decrease of Exhaust emissions, while Brake&Tire wear and Road abrasion are steadily increasing.

Jon Anderson (JA, RICARDO) presented the UK funded study at Ricardo. A test vehicle with enclosed brake and tire sampling was developed. Emission results of PM2.5, PN (low-volatile / all PN) were presented for Chassis Dyno, public road and

test track. Initial results for tires were shown, however better quantification still needed. For planned work of Phase-2, please see presentation.

CA via Chat: “@Jon, were you able to assess tyre emissions from accelerating events and cornering?”
JA: Not on Chassis Dyno. Phase-2 will do this.

Sebastian Gramstat (SG, OICA) via chat: „Jon, did you detect the tyre surface temperature on the chassis dyno to compare it with temperatures observed during road testing? Thank you”
JA: Not yet, but will be done in the future/Phase 2.

David Hesse (DH, OICA/VW) via chat: „Jon: Regarding the results of the tire emissions: can you exclude that no brake wear particles are measured due to small leaks in the enclosure? The "outgassing" described on slide 21 could also be an indication that you are measuring brake particle emissions with the tire sampling system.”
JA: We do not believe having leaks, because of positive pressure. Expect only small contribution.

6. ToR PMP

BG reminded that the ToR for PMP will expire in June 23. BG and RV will collect and propose topics for the next phase of PMP. These might include:
non-exhaust: adaptation to future technologies, real-world cycles in lab, HD brakes

7. Exhaust PN calibration topics

a. Study on Catalytic Stripper (Catalytic Instruments)

Vinicius Berger (VB, Catalytic Instruments) presented on “Oxidation Efficiency Measurement with Propane”. The presentation is at UNECE-PMP sharepoint. Oxidation of propane was investigated, including sulfur poisoning. Catalytic stripper appeared very robust in terms of oxidation efficiency even when sulphur poisoned. Propane oxidation efficiency method proves effective possibility

Next step: Comparison of propane oxidation efficiency results with tetracontane of a sulphur loaded

VB commented that no particle emissions were seen during sulphur loading.

b. Current status on PN calibrations

this topic will be discussed in next PMP meeting.

8. Any other Business

TG contract ends at JRC – BG, RV (via chat) and other colleagues thanked TG for 9 years of work in PMP. Team wishes all the best and hope to see continued contributions.