

**PMP Webconference**  
**24<sup>th</sup> March 2021, 15:00-17:00 CET**

**DRAFT Meeting Minutes**

1. Introduction

Welcome by Giorgio Martini, ca. 108 participants. No intent for in-depth discussion but mainly plan next steps.

GM provided a short summary of the GRPE Geneva meeting January 2021 and of the IWG progress report submitted to that GRPE session.

- Informal document submitted containing the proposal for a sub-23 nm particles for HD engines as well as the method for PN measurement with direct sampling from raw exhaust with fixed dilution.
- PN procedure for HD is described in UNECE R49, and not GTR 4. Discussion on how the above informal document should be formally approved by GRPE. Decision taken by GRPE to convert it in a UN consolidated resolution.
- In Jan 2021 GRPE request to PMP to prepare a GTR for brake wear was brought forward by EU COM.

2a. Sub-23 nm – HD procedure

- Discussion on latest modifications:  
IWG progress report: proposal for a sub-23nm particles for HD engines.

Sub 23 protocol for HD, based on LD protocol (GTR-15). BG (Makis) summarised the 10 nm HD protocol in comparison to existing 23 nm procedure in R49.

Tailpipe sampling with fixed dilution (HD): penetration, and particle concentration reductions factors for the pre-diluter are still under discussion. Details of tailpipe sampling methodology need to be discussed and decided.

=> continue in small group with interested parties

- Consolidated Resolution  
DRAFT is available – comments welcome.  
Minor issue: Definition of PM number (R49), or SPN (current resolution)  
Due to the still open points in the tailpipe sampling methodology, it might be needed to postpone the resolution to Jan 2022 in case additional data is needed.

2b. Sub-23 nm – PEMS procedure (LD)

- Status of the proposal was presented by BG

- Main difference (other than the efficiencies at various sizes)  
VRE  $\geq$  99.9 % compared to 99% for the 23 nm systems;

#### Other topics

- Monitoring input from stakeholders is needed regarding the application of the agreed protocols, incl. regenerations, fuels, crankcase emissions.
- common calibration procedure. Input needed on inconsistencies, traceability, ...  
MetroPEMS project on traceability. Deadline 2021 (tbc).

### 3. Non-exhaust emissions – Brake measurement procedure

- IPR Issue  
Patent request submitted by Audi/HORIBA. The position of GRPE and EC is that in principle it is not acceptable to develop a test procedure based on a methodology covered by a patent that could give competitive advantages to specific companies.  
The PMP chair explored with the involved companies different options in case the patent would be granted. In the end AUDI/HORIBA submitted the documents circulated within the group. The statement submitted by AUDI/HORIBA document is an informal document, not binding. This is considered as a sign from Audi/Horiba that the patent if granted would be made available and not used to get a competitive advantage. PMP group is not the forum to discuss this issue. Comments can be sent to GM/TG by end of April 2021. Athanasios Mamakos (AVL) asked when the template (including the terms and conditions) would be available. GM would distribute when provided by AUDI/HORIBA.  
The PMP chair proposed that PMP technical work could restart. A discussion is taking place at UNECE level on how to avoid similar situations in the future. Very likely the UNECE ToR of IWG will include a statement how to handle potentially existing IP and, or IP potentially to be developed in the IWGs.
- Short Update on the Round Robin TF2 will hold weekly meetings until May 2021. TF 3 will be organizing the RR, including logistics. Start RR in September 2021. TG will send invitations Mid-April to participants.  
Timing until Jan/Feb 2022: see presentation.
- A request to GRPE to develop a GTR on Brake emissions is being prepared and will be circulated to the group for comments soon
- Regenerative Braking technology – Way forward  
Technical Secretary (Rainer Vogt): PMP members wish to progress regen. braking to fill the gap in the procedure text where currently is a placeholder. Regen. Braking has been applied in emission measurements; however no common procedure is available. To be defined: Brake dyno controls, OEM specific regen. braking protocol,

independent lab testing, battery charge level/drive mode, comparative and repeatability testing, and potentially RR.

Next step: at PMP meeting there will be the option for technical presentation and discussion. This will be followed by the discussion if a TF-4 on this topic would be needed.

#### 4. New Terms of Reference

Modifications were introduced to deal with UNECE requests (create GTR Brake) and deleting completed working items. Now: Monitoring of Sub 23nm and HD direct tailpipe sampling.

RV: validation is needed after the RR. And also when regen braking is included, or other technologies. Therefore, the validation point (g) and “completion June 2022 – to be confirmed at a later stage on the basis of progress made” was added.

#### 5. Update on other activities

- Monitoring of Procedures

See presentation

- Common Calibration Procedures

see presentation

- Tire wear emissions

LEON-T is winning proposal. Assessment of tire emission in lab and on the road, tire abrasion rate, environmental impact of microplastics. LEON-T will compare abrasion rate and airborne particles.

- Development of a Tire abrasion rate method (not airborne particles) project under DG-GROW: Is expected to start soon and not later than June 2021 for 15 months.

#### 6. New Chairman

GM would like to hand over the role of the chairman. EU-COM proposes: Barouch Giechaskiel (BG). Tech. Secretary and many other participants (see chat) support Makis. Technical secretary and many other participants thank Giorgio for all the work so far.

BG introduces his background: studied in Greece. PhD working on vehicle emissions, early involved in PMP; at JRC working on LD and HD projects, PN introduction in legislation, PN PEMS, measurement uncertainty.

#### 7. Any other Business

Note: PMP is a technical group recommending technical procedures- Other requirements will be set in the regulation.