

# PMP – Particle Measurement Program Informal Working Group

## Task Force 2– Brake Dust Sampling and Measurement

---

**Meeting #7 – Thursday 14 December, 2017, 14:00 – 15:00**

### **Minutes of Meeting – Final Version**

**1. Tour de table:** Participants: AUDI-(SG) Sebastian Gramstat; AVL-(TM) Thanasis Mamakos; BMW-(RL) Rasmus Leicht; BMW-(KL) Katharina Lammel; BREMBO-(MA) Mattia Alemani; CARB-(SC) Sonya Collier; DEKATI-(MM) Mikko Moisio; FORD-(JG) Jarek Grochowicz; FORD-(MMF) Marcel Mathissen; General Motors-(MR) Matt Robere; ITT-(AS) Agusti Sin; JRC-(TG) Theodoros Grigoratos; Opel-(RE) Reinhold Enders; TMD-(AP) Andreas Paulus; TSI-(JS) Jurgen Spielvogel; TU Ostrava-(MV) Michal Vojtsek

**2. Presentation of General Motors:** MR presented GM's brake dynamometer. He clarified that GM's setup has not been recently used for exploratory measurements on brake dust, therefore the presentation would have a different focus compared to the previous ones. After a short introduction on an older brake dust study the main characteristics of the dyno were described. Details on the technical specification can be found in slide #5 of the presentation. Then MR described a project which aimed in improving the correlation between dyno and vehicle cooling. Tests were conducted over constant speeds of 50 kph and 80 kph and were repeated on two different dynamometers. The main conclusion of the study was that a cooling air set point of 25% of initial speed can be considered optimum over 5% and 50%.

JG asked for some clarifications regarding the point of measurement of the cooling air (outlet), the measurement of the brake speed (no), the positioning of the brake (disc first but both configurations were tested). No studies for transient cycles were conducted.

**3. Presentation of TMD Friction:** AP explained that TMD has done some initial brake emissions testing last year. However, the setups used do not concur with the thoughts of TF2. TMD used a setup with solely a hose located at the outlet of the brake and as second step a box which is connected to the outlet of the brake for sampling. TMD is planning to do further testing in the future and probably will use a full enclosure similar to what the other participants have presented.

#### **4. Other business:**

TG briefly discussed the compilation document. The document was sent to all participants for feedback. The first round of feedback will include structural comments and will focus on parameters that should be included. Feedback is expected by the end of the year. Afterwards, a second round of feedback will be required.