

The European Commission's science and knowledge service

Joint Research Centre



BRAKE PARTICLE EMISSIONS

TASK FORCE 2 BRAKE DUST SAMPLING AND MEASUREMENT

Theodoros Grigoratos and Giorgio Martini

European Commission, Joint Research Center, Sustainable Transport Unit

45th PMP IWG Meeting – Ispra (IT) – 08.11.2017

TASK FORCE COMPOSITION

- **OEMs:** AUDI (Sebastian GRAMSTAT); BMW (Rasmus LEICHT – Ulrich KUHN); Ford (Jarek GROCHOVICZ – Marcel MATHISSEN); General Motors (Matthew ROBERE); Opel (Max VOTTELER – Reinhold ENDERS)
- **Instrument and Brake Dyno Manufacturers:** AVL (Thanasis MAMAKOS – Michael ARNDT); DEKATI (Mikko MOISIO – Ville NIEMELA); HORIBA (Dmytro LUGOVYY – Thomas MAIER); LINK Engineering (Carlos AGUDELO – Radek MARKIEWICZ); TSI (Jurgen SPIELVOGEL – Stephan PERCOT – Bob ANDERSON)
- **Brake Manufacturers:** Brembo (Francesco RICCOBONO – Mattia ALEMANI); ITT Motion Technologies (Agusti SIN); TMD Friction (Ilja PLENNE – Andreas PAULUS)
- **Other Organizations and Academia:** CARB (Sonya COLLIER); JARI (Hiro HAGINO); JRC (Theo GRIGORATOS – Giorgio MARTINI); TU Ilmenau (David HESSE – Klaus AUGSBURG); TU Ostrava (Michal VOJTSEK)

STEP 2 - BRAKE DUST SAMPLING AND MEASUREMENT

- Selection of the testing methodology (Concluded)
- Comparison of existing systems/test rig configurations (Deadline: January 2018)
- Selection/definition of testing parameters (Deadline: March 2018)
- Validation of the selected configuration(s) & measurement methodologies (Deadline: To be defined depending on the progress)
- Data processing method (Deadline: To be defined depending on the progress)

SAMPLING AND MEASUREMENT – DECISIONS MADE

- There is a common understanding that both PM_{10} and $PM_{2.5}$ as well as PN emissions should be investigated
- The TF should try to develop a methodology in order to simulate the real world conditions instead of characterizing the particles at their generation point. We also should be interested in creating comparable and harmonized measurement systems for R&D and scientific purposes

SAMPLING AND MEASUREMENT – CURRENT STATUS

Partner	
LINK Engineering	<input checked="" type="checkbox"/>
HORIBA	<input checked="" type="checkbox"/>
TU Ostrava	<input checked="" type="checkbox"/>
Ford	<input checked="" type="checkbox"/>
JARI	Today
Brembo	16.11
TU Ilmenau	30.11
TMD Friction Materials	Tbd
General Motors	Tbd
AUDI	Tbd
ITT Motion Technologies	Tbd

- Some of the partners have already presented their sampling and measurement configurations with focus on the technical characteristics rather than actual wear results
- The idea is to study all configurations from all partners and then decide which ones are the most appropriate for the purposes of our work. Operational parameters will then be defined



Any questions?

You can find me at theodoros.grigoratos@ec.europa.eu