

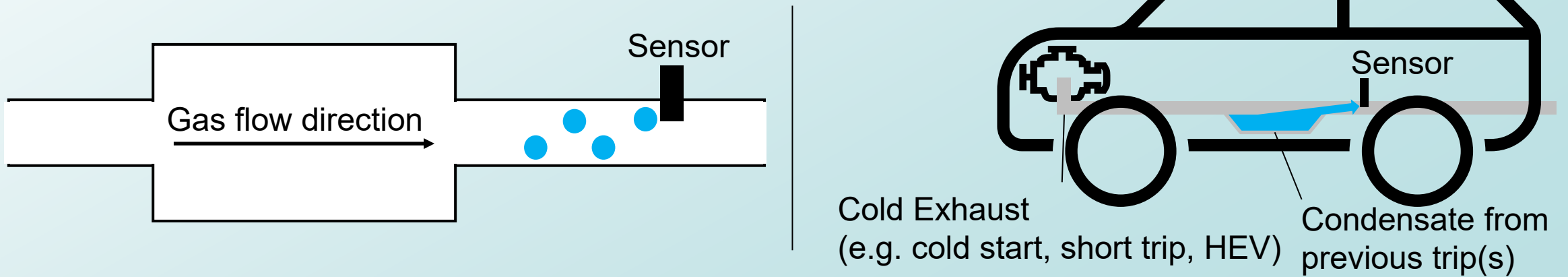
(Condensate) Drainage Exhaust System

GRPE - 91st Session



(Condensate) Drainage Exhaust System

- Water is one of the products of the combustion process of ICEs. In the case of not fully heated up exhaust systems, this water condensates and can remain in the exhaust system.
- Modern vehicles rely heavily on sensors within the exhaust system to control the ICE and the exhaust after-treatment system. Therefore, high sensor data availability and quality is crucial.
- If condensate remains in the exhaust system, this condensate can hit sensor(s) and in turn reduce its data availability and quality. New emissions standards (e.g. EU7/OBM) further increase the necessity of reliable sensor data.
- In order to remove condensate, “drainage systems” can be used.





(Condensate) Drainage Exhaust System Proposed Changes UN R154 – Part I

- Proposed clarification for UN R154 §2.4.3., Annex B6:

Original Text:

“2.4.3. The vehicle’s exhaust system shall not exhibit any leak likely to reduce the quantity of gas collected.”



Proposed Text:

*“2.4.3. The vehicle’s exhaust system shall not exhibit any leak likely to reduce the quantity of gas collected. **In the case of openings in the exhaust system designed to remove condensate, the manufacturer shall demonstrate to the responsible authority that the openings have an negligible influence on the quantity of gas collected.**”*



(Condensate) Drainage Exhaust System Proposed Changes UN R154 – Part II

- Proposed clarification for UN R154 §6.1.1., Annex C3:

Original Text:

*“6.1.1. The vehicle shall be mechanically prepared before the test as follows:
(a) The exhaust system of the vehicle shall not exhibit any leaks;
(b) The vehicle may be steam-cleaned before the test; ...”*



Proposed Text:

*“6.1.1. The vehicle shall be mechanically prepared before the test as follows:
(a) The exhaust system of the vehicle shall not exhibit any **unintended** leaks;
(b) The vehicle may be steam-cleaned before the test; ...”*



(Condensate) Drainage Exhaust System Proposed Changes UN R83-06 and 07 – Part I

- Proposed clarification for UN R83-06 and 07 series §3.2.2., Annex 4A:

Original Text:

“3.2.2. The exhaust device shall not exhibit any leak likely to reduce the quantity of gas collected, which quantity shall be that emerging from the engine.”



Proposed Text:

*“3.2.2. The exhaust device shall not exhibit any leak likely to reduce the quantity of gas collected, which quantity shall be that emerging from the engine. **In the case of openings in the exhaust system designed to remove condensate, the manufacturer shall demonstrate to the responsible authority that the openings have a negligible influence on the quantity of gas collected.**”*



(Condensate) Drainage Exhaust System Proposed Changes UN R83-06 and 07 – Part II

- Proposed clarification for UN R83-06 and 07 series §5.1.1., Annex 7:

Original Text:

*“5.1.1. The vehicle is mechanically prepared before the test as follows:
(a) The exhaust system of the vehicle shall not exhibit any leaks;
(b) The vehicle may be steam-cleaned before the test; ...”*



Proposed Text:

*“5.1.1. The vehicle is mechanically prepared before the test as follows:
(a) The exhaust system of the vehicle shall not exhibit any **unintended** leaks;
(b) The vehicle may be steam-cleaned before the test; ...”*