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ENTERPRISE AND INDUSTRY DIRECTORATE-GENERAL
Industrial Innovation and Mobility Industries
Automotive industry

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**Taskforce on the development of a procedure to demonstrate
Durability of pollutant control systems for the WLTP GTR
Mandate and Terms of Reference**

1. BACKGROUND AND INTRODUCTION

Durability requirements are part of the procedures for the type approval of vehicles. They can be based on experimental measurements and/or administrative provisions. Their objective is to give assurance that the pollutant emission control systems are designed such that they maintain compliance with the emission limits during the useful life of the vehicle.

In principle, the most realistic way to assess how the emissions from a vehicle deteriorate over time and mileage is to drive the vehicle for its whole useful life (ex. 160 000 km for passenger cars), covering different trips and weather conditions (winter – summer), and measuring pollutant emissions on a WLTP test at the beginning of the vehicle life (after some run-in) and at regular intervals (ex. every 10 000 km).

However, as a type-approval test this would be very expensive and time consuming, so several durability procedures around the world allow for some simplification of the "whole vehicle durability test", for example by using a test track or a chassis-dyno to accumulate the mileage or by permitting an alternative driving cycle which is demonstrated to deliver comparable results.

An alternative to these whole vehicle tests is the bench ageing durability test, where an engine is equipped with the full after-treatment system. In some cases the bench aging test can also be shortened (accelerated ageing tests). These tests should not only consider the thermal ageing of the after-treatment system but also any other influence known to have a significant effect, for example the chemical poisoning of the catalyst (i.e. from the lube oil, metal wearing, fuel's impurities).

Of course not all pollutant control systems can be dealt with by a non-vehicle or non-engine specific accelerated ageing procedure. In fact there are millions of vehicles worldwide that use engine-based systems to control emissions (ex. EGR on Euro 5/6 diesel vehicles), whose durability may not be accurately assessed with a non-vehicle or non-engine specific accelerated procedure. In the future other emission control technologies might be developed not being fully based on after-treatment of the tailpipe gas, so it is important that a durability procedure is developed with the widest possible scope and application range, while addressing those durability aspects that have a significant effect.

The WLTP IWG has been given the mandate in Phase 2 to cover not only the durability requirements of the conventional and electrified vehicles as regards to pollutant emis-

sions, but also to investigate a possible durability procedure for the assessment of the battery deterioration with mileage and time. It is proposed that the Durability Task Force (DTF) take charge of the pollutant emissions part, while the EV subgroup lead the battery deterioration aspects.

2. MANDATE OF THE DURABILITY TASKFORCE (DTF)

The DTF shall

- be open to all experts, stakeholders and CP representatives that have an interest in WLTP;
- be chaired by the European Commission;
- aim to develop a harmonized procedure to demonstrate Durability of current and future pollutant control systems, including EGR;
- try to design an efficient and reliable methodology (ex. Durability family concept).
- consider the possibility to develop assigned Deterioration Factors (aDF), upon clear request of at least one CP;
- act as a platform for the exchange of information and contributions of stakeholders, to be discussed and agreed during the development process;
- report to the WLTP-IWG on the progress;
- make recommendations to the WLTP-IWG on the document strategy, i.e. a new GTR or as an annex to the WLTP GTR;
- deliver technical advice and the basis of a text proposal;
- focus only on the technical issues regarding the procedure to be developed, while political decisions are made at the WLTP-IWG level.

3. TERMS OF REFERENCE

The DTF shall bring forward and develop proposals regarding the pollutant emissions part along the following two lines:

- Whole vehicle durability test;
- Bench ageing durability test (normal and accelerated ageing).

To do so, a general approach is proposed which can be adapted to the specific purpose of each method.

- Start with an analysis of the existing normative and literature on the method;
- Prepare a comparative analysis amongst the different regional procedures;
- Determine whether existing procedures are still fit for purpose and, where this is not the case, propose a way forward for the development of a harmonized procedure, including considerations on whether there is need for experimental activities and to what extent;
- Develop the harmonized method;
- Validate the method.

Implementation and certification issues are outside of the scope of the DTF.

Any discussions that go beyond the technical level towards a political level will be reported to the WLTP-IWG with the request for a political decision.

4. TIMING

- For the development of the methodologies experimental and validation activities are needed. The timing has to be agreed in detail but it will most probably mean to extend the work of the DTF well into Phase 2b.