



WLTP Phase 2

Durability Task Force **Update**

Geneva, 9 January 2018
21st WLTP IWG meeting

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Overview of actions and timing

Action 1

Action 1 has developed along 2 lines:

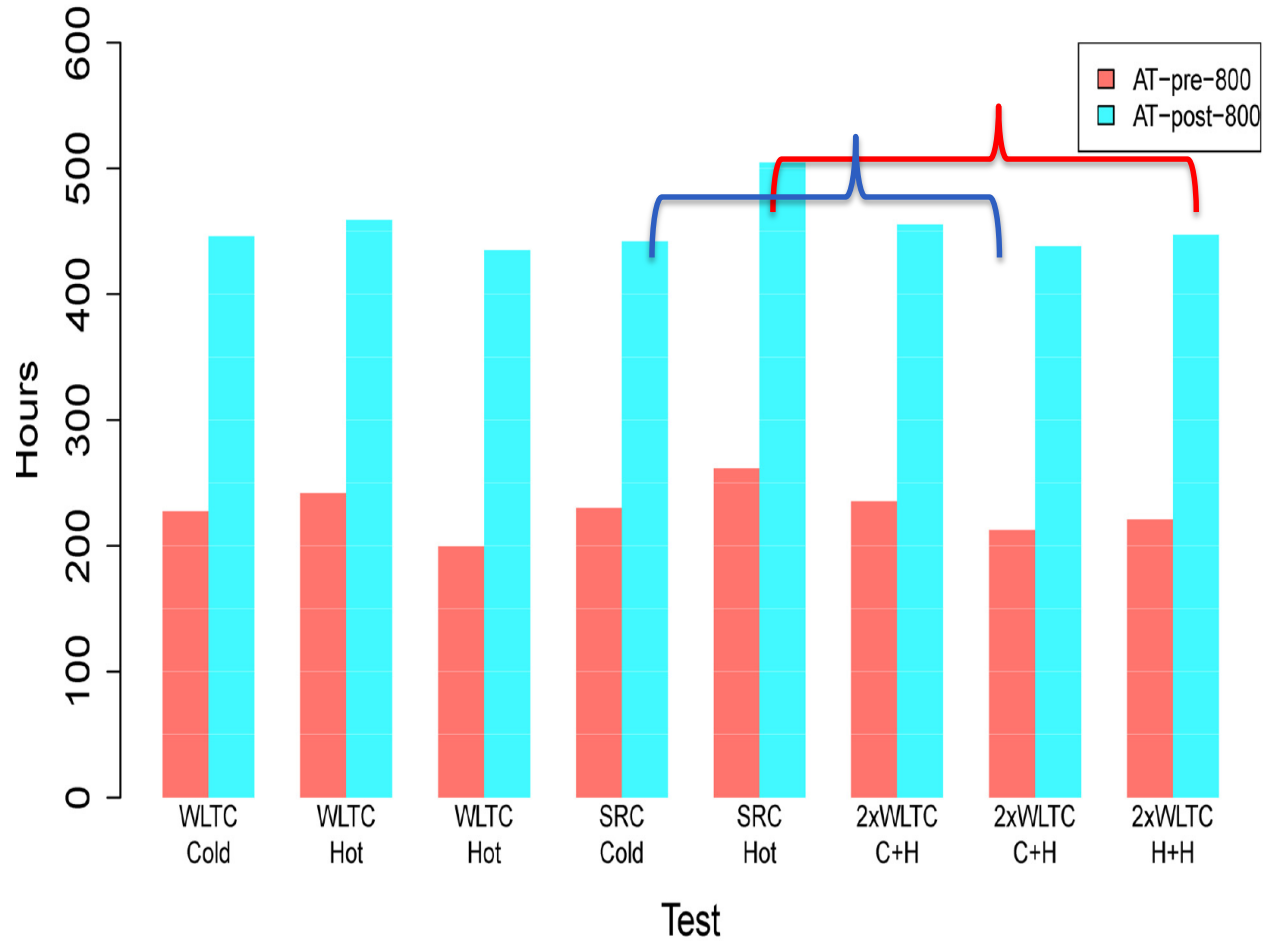
1. Comparison of the thermal load of SRC and WLTP on the After-Treatment Systems of vehicles (JRC)
2. Verification of the accelerated bench aging procedure (LAT)

Overview of actions and timing

Action 1 – Line 1

The experimental tests carried out by JRC on 2 gasoline vehicles and 1 diesel vehicle to compare the thermal load of the SRC and of the WLTP on the ATS show that the SRC is equal or more severe than the WLTP. A second diesel vehicle is being tested by JRC before closing this action.

Action 1 - JRC results



Action 1 – Line 2

- In order to verify the correctness of the accelerated bench aging procedure, LAT is performing a comparison between the thermal measurements on a diesel vehicle (exhaust gas temperature measurements) and an engine bench with exactly the same ATS, which will allow the measurement of catalyst temperatures, to be compared with the exhaust gas temperatures.

Action 1

Vehicle Exhaust Temperature Measurement: Example

➤ Surface temperature measurement across exhaust line

- On-road
- On the chassis dyno
- Random driving & cool down in both cases

engine out



➤ Vehicle: Diesel 2lt, MT6, EU6

➤ EAT devices: cDPF, SCR

➤ Temperature measurement:

- ✓ Engine out (=cDPF in, after turbo)
- ✓ cDPF out (=SCR in)
- ✓ SCR out
- ✓ Additional thermocouples can be installed

cDPF out



SCR out



Overview of actions and timing

Action 2 & 3 – Literature review

1. The literature review of the aging mechanisms of the new after-treatment systems (NOx traps, SCR, etc.), which currently are not expressly covered by the accelerated bench aging procedure, is showing that these mechanisms can have an important impact on the overall procedure.
2. However, it has to be taken in account that the development of a new and comprehensive procedure to cover this issue can be highly time and cost consuming. This aspect should be considered also in the light of the world-wide tendency toward increasing RDE measurements and market surveillance checks, which make the durability procedure at type approval less crucial than in the past years.

Overview of actions and timing

Action 2 & 3 – Literature review

3. Other considerations are: a) that the development of such new Durability procedure would not be compatible with the timing of the WLTP Phase 2; b) the new procedure would probably not be manageable by a Task Force (an ad-hoc IWG with GRPE mandate would seem more appropriate)

Concluding remarks (1)

On the basis of the outcome of actions 1, 2 & 3, the DTF has agreed on the following preliminary conclusions, that the WLTP IWG is asked to endorse:

- Confirm the SRC for both whole-vehicle mileage accumulation and for the derivation of the accelerated bench aging timing.
- Revise the current accelerated bench aging procedure in the light of the experimental results obtained from LAT, but keeping the same overall approach, both for the gasoline and for the diesel vehicles (i.e. only thermal aging, with a multiplicative factor >1 to take in account other aging factors).

Concluding remarks (2)

On these bases, the DTF propose to continue with the following timetable:

- Completion of JRC and LAT experimental activities by end of February 2018
- Drafting of the revised Durability procedure in March-May 2018, with the presentation of a first draft at the GRPE session of June 2018
- Finalisation of the draft and presentation of a working document by October 2018, in time for the January 2019 GRPE session.
- The WLTP IWG will consider whether to bring at GRPE level the discussion on the development of a new and (potentially) completely different Durability procedure and the and DTF will not consider it further.

QUESTIONS?