European Commission

WLTP Phase 2

Durability Task Force

Update

Seoul, 26-28 September 2017
20th WLTP IWG meeting

European Commission - DG GROW.C4

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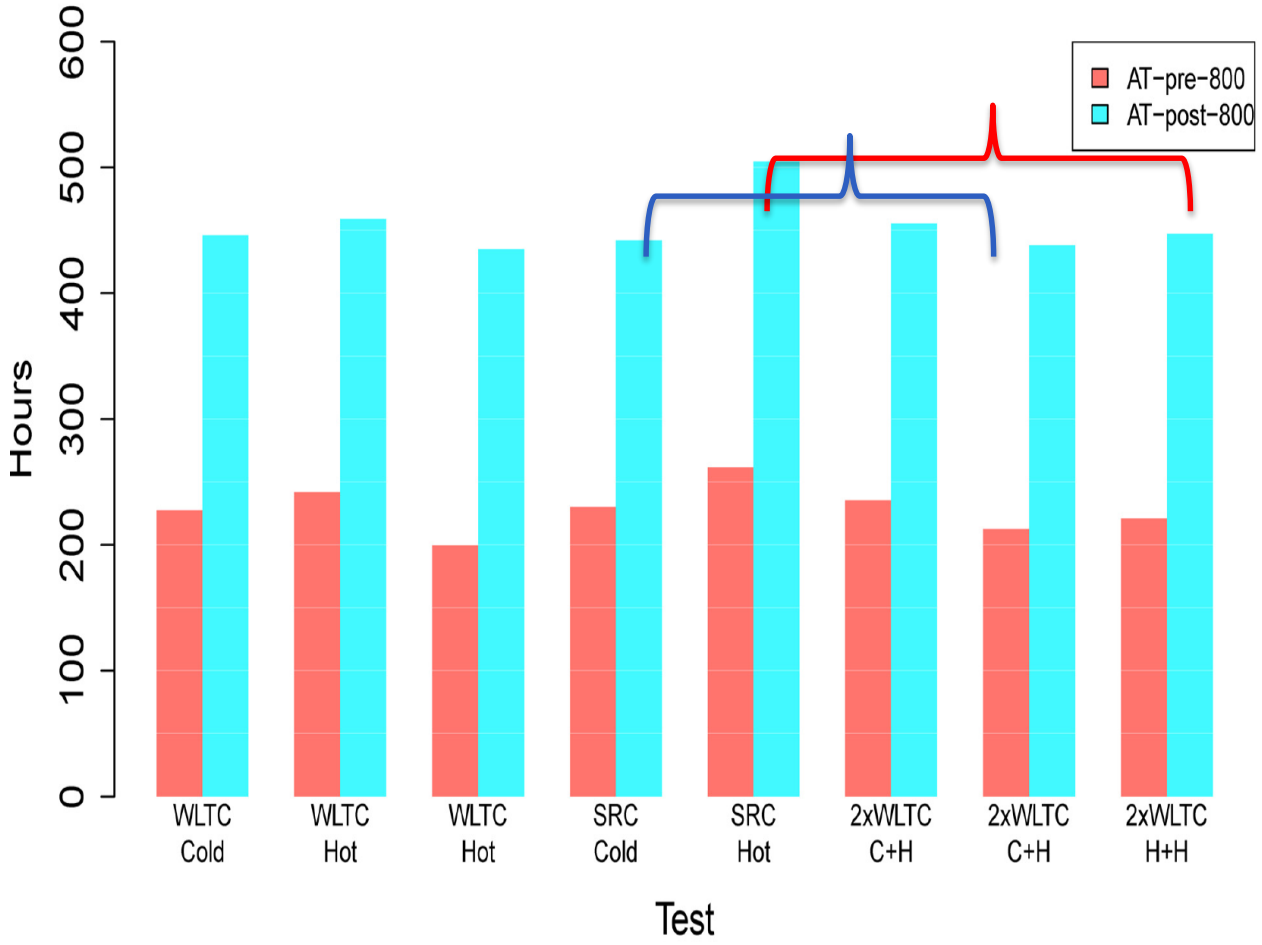
Overview of actions and timing

Action 1

An updated analysis by JRC of the experimental tests on the gasoline vehicle to compare the thermal load of the SRC and of the WLTP on the TWC seems to show that the SRC is not less severe than the WLTP. This needs to be confirmed on other vehicles/ATS technologies.

Action 1 - JRC results



Action 1

- The activity at JRC will continue with a gasoline stoichiometric DI with TWC and a diesel vehicle to be determined and which will be driven by an auto-pilot.
- To complement the experiments of JRC, LAT will perform a comparison between the thermal measurement 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

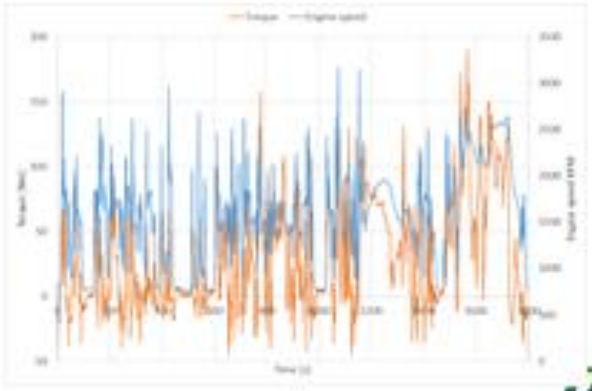
cDPF out

SCR out

Action 1

Exhaust Temperature Measurement: Engine Test Bench

- Engine test bench
  - Transient engine dyno at LAT
  - Euro 6 engine – diesel
  - Modular exhaust lines (DOC/DPF/SCR/LNT) – capability for close-coupling
  - Capability to replicate WLTC and SRC for typical vehicles the engine is fitted
  - Capability to control DPF regeneration
  - Thermocouples in various position in the exhaust line (before and after EAT devices)
  - Thermocouples inside the EAT device(s)
  - Advantage: Very good repeatability (compared to vehicle testing)



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Overview of actions and timing

Actions 2 & 3

- On the basis of the literature data collected until now by the Gasoline and Diesel teams on the deterioration mechanisms of current and future ATS and EGR, LAT and JRC provided a very preliminary view of the available evidence.
- The material collected until now is not sufficient and the chair of the DTF repeated the request to OEMs and ATS suppliers to contribute with their data to build a robust and complete database.
- Since a few years European OEMs are performing type-approval of Euro 6 vehicles, which includes durability provisions for the ATS. This info could be anonymized and provided to the DTF.

Overview of actions and timing

	Action		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2018 - Q1	2018 - Q2	2018 - Q3	2018 - Q4	2019
1	Comparison of thermal load with SRC and WLTP	preparation																	
		execution and analysis of results																	
2, 3	Literature review	collection of info																	
		analysis of info and proposal of revised procedure																	
Scenario 1		no, or minor experimental verificaton needed													Drafting of GTR text				
Scenario 2		experimental verificaton needed													Experimental campaign				Drafting of GTR text

Concluding remarks

- The work of the DTF is proceeding according to the plan presented at the 19th WLTP IWG meeting in Geneva.
- All documents, presentations, results, etc. are available at CIRCABC.
- It is confirmed that the conclusion of this activity (whether 2018 or 2019) cannot be foreseen at the moment and we need to wait until end of 2017.

QUESTIONS?