

WLTP-11-25e

WLTP RRT Status Report

9-10th June 2015

Objectives

- Check the understanding and the application of the GTR15 (based on phase 1a text) in different labs
- Estimate the repeatability and reproducibility of the test procedure in type approval conditions

Schedule

- No delay for the time being => end by dec 2015
- Supplemenatl testing
 - NEDC testing added by JRC but w/o interfering w/ the initial schedule (WLTP/NEDC correlation)
 - 2 labs were added: Horiba in April 2015 and TÜEV Nord in July 2015

	V1	V2	Golden Engineer
22-24 Sept. 2014	BMW		BMW
27-29 Oct. 2014	FIAT	FIAT	FIAT
24-26 Nov. 2014	UTAC	UTAC	UTAC
19-20 Jan. 2015	PSA	PSA	PSA
16-18 Feb 2015	Daimler	Daimler	Daimler
16-18 March 2015	Bosmal	Bosmal	Bosmal
April 2015	Horiba	Horiba	-
26-27 May 2015	DEKRA	DEKRA	DEKRA
22-23 June 2015	VW	VW	VW
20-21 July 2015	TÜEV Nord	TÜEV Nord	?
August 2015	Bosmal	Bosmal	-
14-15 or 21-22 Sept. 2015	JRC	JRC	JRC
Oct. 2015	BMW	BMW	-
Nov 2015		FIAT	-

Test results (1)

- 6 labs
 - 6 test series on V1 (gasoline)
 - 4 test series on V2 (diesel)
- All the results have not been yet validated with the labs => temporary results
- The results have not been statically processed (outliers etc)

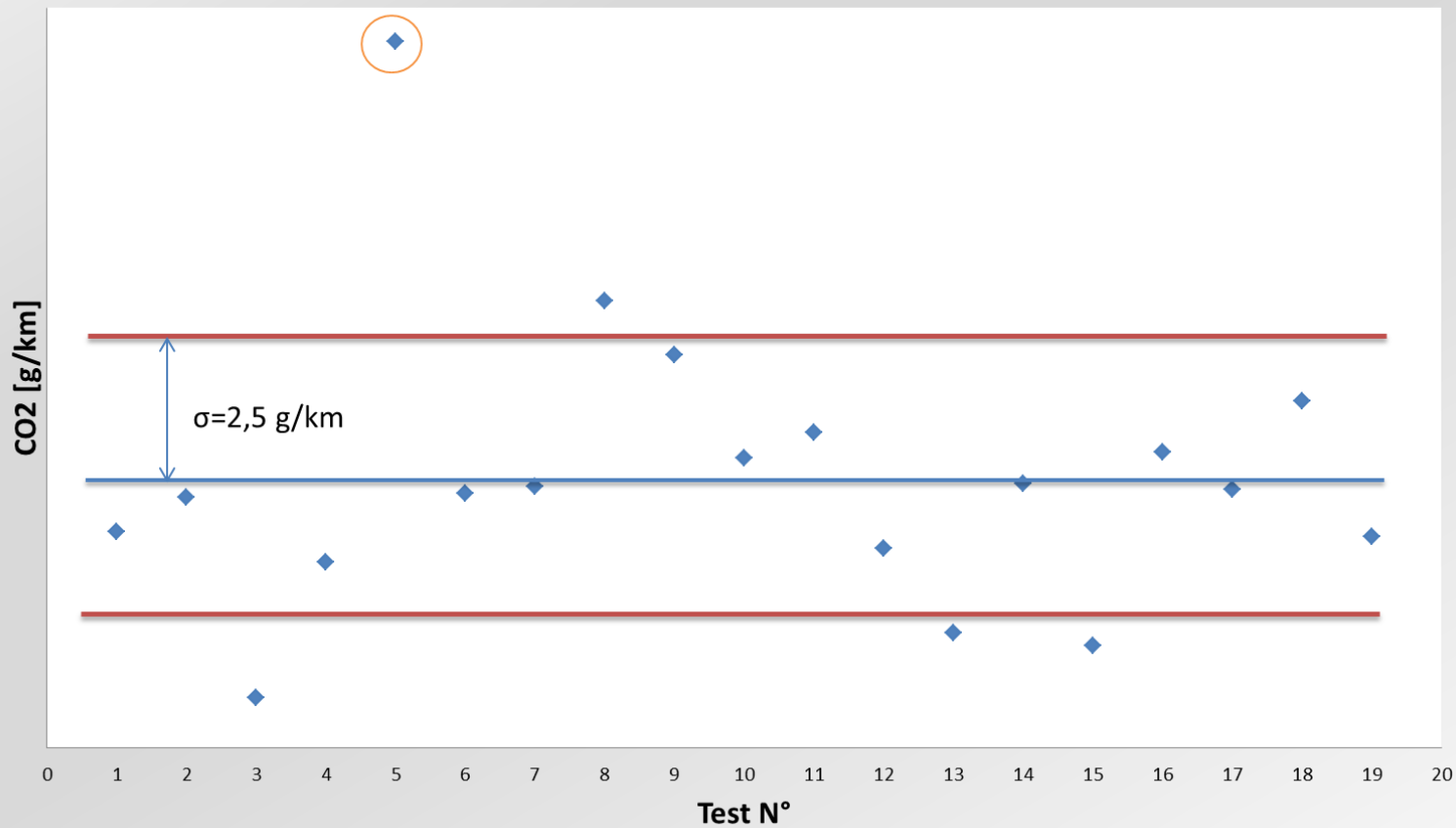
	FC L/100km	CO2 g/km	CO2 corr g/km	NOx mg/km	CO mg/km	THC mg/km	CH4 mg/km	NMHC mg/km	PM mg/km	PN #/km
Mean of lab mean values										
V1 Sigma	0.10	1.9	0.7	20.92	52.36	8.06	1.61	7.66		2.19E+11
Mean of all tests										
Sigma	0.12	2.5	1.7	31.80	64.65	8.65	1.61	8.29	2.57	2.27E+11

*: the correction on RCB was done even when not mandatory by GTR15

As expected, the correction of RCB would improve reproducibility on CO2 emissions at least when applied to all the tests

Test results (2)

V1 WLTP CO2 Emissions
w/o any correction or normalization



Difficulties encountered

- **Lab Equipment**, were not strictly WLTP compliant, e.g.:
 - Soaking areas, cannot always be set to 23°C because of other on going programs
 - RCB measurement equipment precision in GTR is very stringent, existing equipment is not yet always compliant
 - Dynosetting iterative method, test benches are not set to have the vehicle accelerated by its own power before dynosetting
- **Input data**
 - Gear shift calculation => could not be checked during the RRT
Due to improvements of the tool since beginning of the RRT, labs have different versions + most labs have not developed their own calculation tool

Questions raised

Questions are raised in labs that will be sent back to the task forces e.g.:

- Test procedure
 - The test mass/inertia to be used (rotating mass etc)
 - Bag analysis time frame too short
- Gear shift
 - Supply of an official tool for the gear shift (in addition to the GTR text)
 - Availability of input data (power curve) for independent labs
- RCB
 - Necessity of having such stringent requirements for the equipment (cost efficiency)

Thank you for attention