

Submitted by the Chair of the
WLTP IWG

Informal document **GRPE-70-20**
70th GRPE, 13-16 January 2015
Agenda item 3(a)

Status report of the **WLTP Informal Working Group**

Report to the 70th GRPE session
by Stephan Redmann

WLTP IWG Meetings since last GRPE

17-20 November 2014 **8th WLTP IWG**, Pune, India

→ Minutes [WLTP-08-48e](#)

14th January 2014 **9th WLTP IWG**, Geneva, Switzerland

→ Minutes [WLTP-09-29e](#)

Continuously

Task force meetings, audio/web conferences

Status of WLTP phase 1B working items

- Open issues table: **WLTP-09-03e**
 - Meeting minutes: **WLTP-09-29e**
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Annex 1/2: Cycle & gear shifting issues

Status report from H. Steven (WLTP-09-07e):

→ Closed items:

Downscaling, use of gear box (def. n_{\max} , P_{wot}), determination of engine speed, calculation of available power, 3s rule, gear shift family criteria, further improvements of gtr text.

→ On-going discussions:

Use of gear box (def. n_{\min_drive}), exclusion of aux. gears (crawler gear).
Road load coeff. in gear shift calculation (→ Annex 4 issue)

→ Adoption foreseen at IWG #10.

Annex 3: Reference fuels

→ No phase 1B working items.

Annex 4: Road load and dynamometer setting

Status report from R. Cuelenaere: (WLTP-09-07e)

→ Closed items:

Speed points, alternative warm up procedure, wheel alignment.

→ On-going discussions on key issues:

- Wind tunnel / moving belt method
- Review on-board anemometry / wind conditions
- Review default road load parameters

(combined default road load approach, adjustments for N1)

→ Adoption foreseen at IWG #10.

→ On-going discussions (cont.):

- Road load family concept
- Review torque-meter method

→ Pending:

- Tyre selection criteria of combined approach
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Annex 5: Test equipment and calibrations

→ Closed items:

Review of 4WD specifications, Chassis dyno calibration aspects.

→ **All OIT items closed.**

→ On-going:

Review of (new) experts proposals, if necessary.

Annex 6: Test procedure and test conditions

→ Closed items:

- Handling of Ki approach (most items)
- **Provisions for Coasting** (WLTP-09-15e)
 - Delayed progress, mainly because of fundamental discussions on "cycle modification" (reservations by EU, JPN)
 - Time constraints, extensive data analysis necessary

→ Working item **closed for phase 1B**

→ Coasting technology will be reconsidered in WLTP phase 2
(strong interest of CLEPA)

→ On-going discussions (key issues):

- **Speed trace violations, Driving trace index** (WLTP-06-16e)
 - Aim: Screening tool (SAE based methodology), „void test“ decision
 - Connected with correction algorithms proposal by EU COM

→ On-going discussions (cont.):

- **Number of tests** (WLTP-09-21-rev1e; incl. -22e)

Aim: improve current GTR provisions from R83 (up to 3 tests)

→ 1 or 2 tests with repetition criteria: [90] % of limit value.

→ Key points of discussion:

- Different approach for CO₂? (No limit values. Declared value.)
- If no single CO₂ test: repetition criteria?

Annex 7: Calculations

→ Closed items:

FC calculation issues, FC interpolation method

→ **Correction algorithms (WLTP-08-37e/-38e)**

- Speed trace violations

→ Phase 1B: Drive Trace Index, Phase 2: Corrections.

- Wheel alignment (RLD)

→ Solved: WLTP-09-10e.

- Rotational inertia correction

→ Objected, negative cost/benefit.

- Inacc. of road load settings on chassis dyno

→ Task Force RLD, probably solved in phase 1B.

- Other issues: further investigations necessary.

→ Possibly WLTP phase 2 issues.

→ Closed items (cont.):

- **Additional pollutants:**

Calculation formulas for Ammonia (NH₃)

→ On-going discussions (cont.):

- **Additional pollutants:**

Calculation formulas for Ethanol & Aldehyde

(Validation delayed due to measurement equipment availability)

Annex 8: Pure and hybrid electric vehicles

→ Closed key item:

- **Utility factors**

- 1) Harmonized methodology in GTR to derive regional UF values

- reference to SAE standard

- 2) UFs based on regional choices (e. g. fleet / individual values)

- overview of regional UFs will be given in GTR

→ On-going discussions:

- **RCB Correction and phase specific calculation**

- Mode selectable switch

- CO2 family and combined approach

- Adoption IWG #10.

- End of EV range criteria, PEV shortened test procedure,

- FCV test procedure

Annex 9: System equivalency

- Reserved annex in GTR 15.
- Objective: statistical procedure for comparison and validation of alternative measurement equipment and measurement procedures.
- Similar regulations in GTR 4 (WHDC) and EPA 1066
- Review of existing regulations and adoption at IWG #10.

General gtr issues:

→ **Drafting:**

- New **Subgroup „Drafting“**, chaired by Drafting Coordinator.
- Tasks: Peer review of GTR (inconsistencies check),
decisions on expert proposals (if possible),
editorial review of task force / IWG proposals

→ **Definitions:**

- **VPSD recommendations**, e.g. HEV definition
- Review / transposition to WLTP GTR
- Separate meeting of Subgroup „Drafting“.

→ **Indication of temperatures °C / Kelvin** (WLTP-09-19e)

Based on DIN EN ISO 80000-5

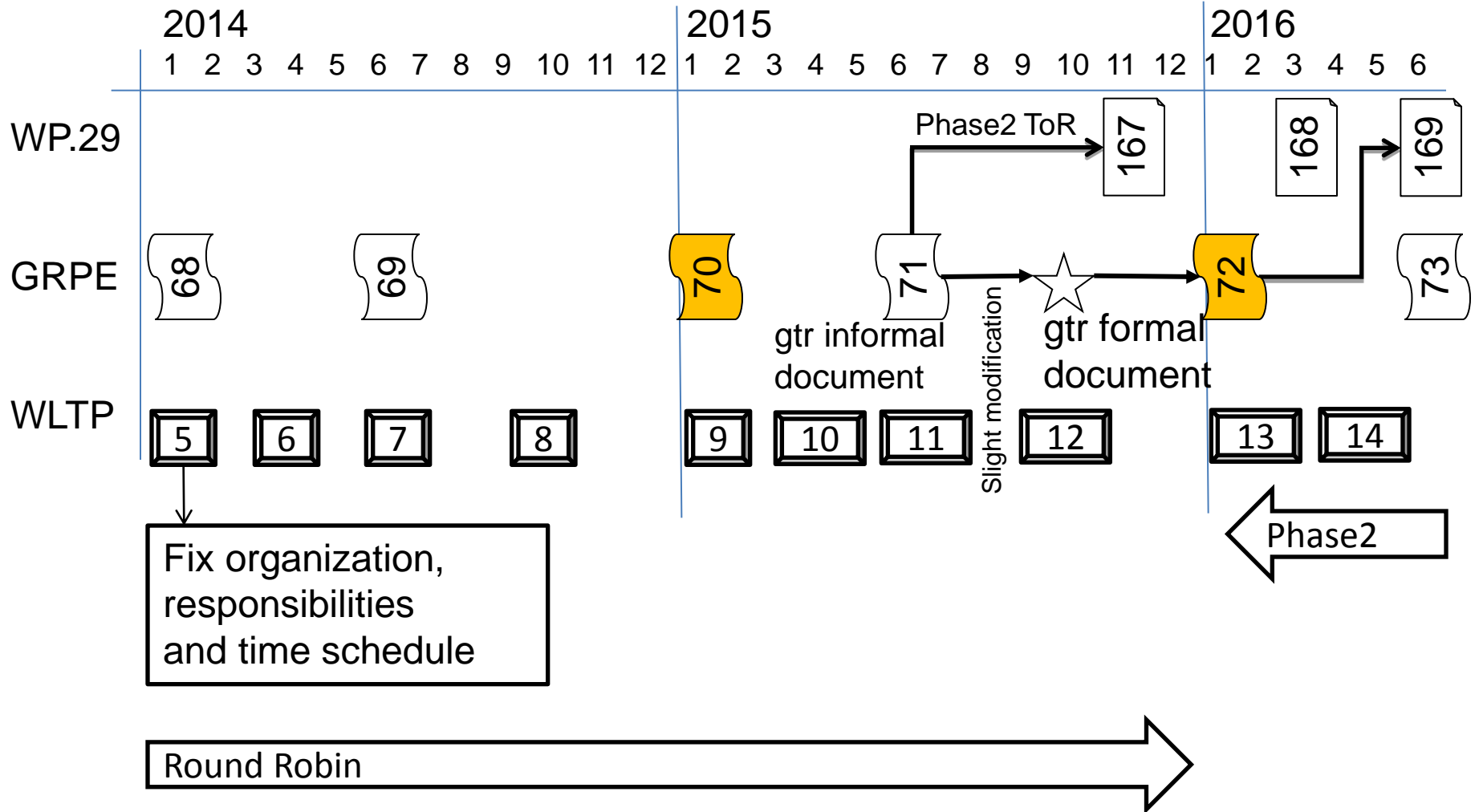
- Define 0° C as 273.15 K
 - Use “°C” for definition of temperatures
 - Use Kelvin (with .15) in calculations
 - Delete redundant information: ± 5 K (± 5 °C) (Example)
- Recommendation: align other GTRs, e. g. EPPR

Probably alignment of others? (kWh...)

→ **Round Robin Exercise**

- European & Asian exercises are on-going. Finalization end of 2015.
- US EPA & China announced participation.
- EU: cross-over measurements with India, US.

WLTP Phase 1b Roadmap



WLTP Phase 2

- **Starting note** by Japan, K. Kobayashi: WLTP-08-41-rev1e,
incl. Questionnaire (WLTP-08-41-rev1e annex)
- Position on **EV issues phase 2 & 3** by EU-COM
(WLTP-08-42e (EVE-12-06e))
- Possible working items:
 - Low ambient temperature
 - High altitude test
 - In-service conformity
 - Durability
 - Mobile air conditioning
 - EV issues
- **Feedback by Contracting Parties** (and other stakeholders)
requested until **end of February 2015**

WLTP IWG meetings in 2015

- IWG #10 14.-16. April (EV Subgroup on 13th)
Stockholm, **Sweden**
- IWG #11 June GRPE, full day requested
Geneva, **Switzerland**
- IWG #12 September, dates t.b.d.
Tokyo, **Japan**