Transposition of GTR15 (WLTP) into UN Regulations

Task Force Update for 18th WLTP IWG Meeting

Bern, 18th April 2017
Background

- Principle of full transposition of GTR15 into UNR confirmed at 74th GRPE

- To follow model proposed by UNECE secretariat at 73rd GRPE
  - Regional levels (Level 1a, Level 1b etc.) in the original version (0 series of amendments) of new ‘UNR WLTP’
  - Harmonised Level 2 to be introduced by the 01 series of amendments to that new Regulation

- New GTR Informal Working Group Task Force set up

- Europe & Japan - the CPs (to date) to ‘sign-up’ to the process
  - However we need to understand and consider the requirements of other Contracting Parties, and not just the EU and Japan

- Representatives from IWVTA also participating in Task Force
Task Force Update

- 74th GRPE, January 2017
  - Aim to hold a minimum of two Task Force meetings prior to the next WLTP Informal Working Group (IWG #18 in Bern, April 2017)
  - Informal document providing an update on progress to be presented to the 75th GRPE in June 2017

- Three meetings of Task Force have been held:
  - 23rd February 2017 - EC Brussels + audio-web
  - 8th March 2017 – JAMA Brussels + audio-web
  - 11th April 2017 – audio-web

- Task Force meeting scheduled for 30th May 2017
  - After which an Informal document will be submitted to GRPE
Task Force – Terms of Reference

- Aim is to develop a new UNR WLTP with a ‘most stringent’ top level (Level 2) that can be included in UN Regulation 0 - so that it can be covered by IWVTA
- Whilst it may not be possible to develop a ‘single’ UN Regulation that would exactly mirror the requirements of all CPs, the new UNR WLTP would need to be accepted by all CPs
- UNR WLTP should also cover other GTRs related to WLTP and not just GTR15 (e.g. Evap)
- The Task Force will be fully responsible for developing the structure and regulatory text for the ‘top level’ regulation.
- Responsibility of the individual regions to prepare the regulatory text specific to their region
Task Force – Road Map

Proposed Timeline
(first implementation)

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
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<th>2020~</th>
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<tr>
<td>Upper Org.</td>
<td>WLTP, GRPE</td>
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<td>(UNR or NEW?)</td>
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→ As a first implementation, focus on Type I test with same timeline as WLTP Phase2b

Road map will be dependent on route chosen.
Potential timeline developed by Japan shown here
Route to enable harmonisation

New UN/ECE ‘Regulation WLTP’

Regulation WLTP – top level (Level 2)
Contains most stringent limits from across all regions
Subject to full mutual recognition: TA shall be accepted by all CPs

Regulation WLTP – Level 1a
Contains EU requirements
Optional acceptance by other CPs

Regulation WLTP – Level 1b
Contains Japan requirements
Optional acceptance by other CPs

Etc.

Leaves a gap in the Regulations relating to the non-Type 1 & Type 4 (Evap) tests that are included in Regulation 83 as well as new EU requirements (e.g. RDE) ➔ see next slide for options for a potential solution
Dealing with non-Type 1 & Type 4 tests

- Regulation 83 includes tests not currently included in GTR15 (i.e. Type II (CO); Type III (crankcase gases); Type IV (Evap); Type V (Durability); Type VI (-7°C) + its specific reference fuels; and OBD. Also ISC.

- These other tests need to be added to a new UNR so that they are not ‘lost’ when a CP applies new UNR WLTP and ceases to apply UNR 83.
  - Type IV (Evap) an exception as that will ‘join’ the Type 1 test in new UNR WLTP

- From an EU point of view RDE will also need to be included

- **Two options** for introducing the other tests
  - **Option 1**: Concept of UNR WLTP + UNR 999 introduced at 72nd GRPE
  - **Option 2**: Include all the other tests in UNR WLTP using the same cross-reference concept proposed for UNR 999.
    - When the tests are introduced into the GTR over time the x-ref to R.83 would be replaced by the test itself (i.e. the new Durability test procedure would replace a x-ref to Annex 9 of UNR 83).
New ‘Regulation WLTP’

- Regulation WLTP Level 2
- Regulation WLTP Regional Level 1a
- Regulation WLTP Regional Level 1b
- Etc.

New ‘Regulation 999’

‘Empty’ regulation with x-refts to equivalent parts of R.83*

- Type II test (Carbon monoxide emission test at idling speed)
- Type III test (Verifying emissions of crankcase gases)
- Type V test (Durability of pollution control devices)
- Type VI test (Cold start at low ambient temperature)

Annex XI – OBD
ISC
RDE?

* Where other tests refer to the Type I test (NEDC) it will be necessary to say (where appropriate) that this should be seen to be the WLTP Type 1 test (over a certain transition period in some cases)

EU would sign-up to both new regulations
Non-EU contracting parties only need to sign-up to UNR WLTP

When the GTR15 adds new tests (e.g. Durability) ‘Reg. 999’ will ‘shrink’ as ‘UNR WLTP’ ‘grows’
Where other tests refer to the Type I test (NEDC) it will be necessary to say (where appropriate) that this should be seen to be the WLTP Type 1 test (over a certain transition period in some cases).
Option 1 v. Option 2

- Option 1: Concept of UNR WLTP + UNR 999 introduced at 72\textsuperscript{nd} GRPE
  - (+) option would keep tests not currently used by regions which are not CPs to R.83 (e.g. -7°C test in Japan) out of the new UNR WLTP and therefore resolve the potential issue of how to include them in the top level (Level 2).
  - (+) leaves open the option to have separate future UNRs for the different tests
  - (-) option creates a new UNR that will be short-lived. Extra administrative burden.

- Option 2: Include the other tests in UNR WLTP using the same cross-reference concept proposed for UNR 999.
  - (+) a simpler concept and with less administrative burden (not having a UNR 999)
  - (-) may not work at top level (Level 2) – as regions that are not CPs to R.83 do not apply the other tests
  - (-) how can it be distinguished as to which CP apply which test?
  - (?) do CP option tests remain in UNR WLTP?
Task Force Update

• Japan are not able to support Option 2
  • how can it be distinguished as to which CP apply which test?
  • do CP option tests remain in UNR WLTP?

• Reminder from Task Force
  • Top level (i.e. Level 2) is about *accepting* more stringency and not about *requiring* more stringency
  • This means that ATCT, for example, could be included in Level 2 even though it is only required in Europe – as it does not reduce the environmental performance of the vehicle. It will need to be in the European Level 1a and therefore would also need to be in Level 2 – otherwise Level 2 would be less stringent than Level 1a.
  • Discussions held in the Task Force as to whether the same principle could apply to non-Type 1 elements included in European regulations (e.g. RDE)
  • Japan keen for UNR WLTP to be restricted to Type 1 and Type IV tests only
Level 2 stringency

• The difference between the reference fuels used in the EU and Japan poses a problem in terms of stringency for Level 2
  • To be investigated in order to determine which reference fuels are ‘worse’ for emissions testing.
  • It may be that new ‘common’ reference fuels need to be developed for WLTP

• Assuming that the reference fuel issue is sorted, Level 2 would take account of the differences between Japan and EU limits and number of phases as follows:
  • Japanese emission thresholds shall be applied to Low - High test cycle and EU emission thresholds shall be applied to Low – extra High test cycle.
  • The vehicle type which meets both Low–High and Low–extra High requirements is considered to be the type in compliance with Level 2.
Task Force Update

- To act as a discussion document, a draft structure of a Level 2 UNR WLTP incorporating all requirements from a EU perspective (including non-Type I tests + RDE) was prepared Task Force meeting 11/04/17 (see WLTP-18-04e Appendix A)
  - Not a formal proposal – but to prompt discussion and help develop a better understanding of how the new UNR WLTP would ‘work’ alongside other regulations e.g. R.24, R.83 and R.85
  - Many of the principles would apply to a UNR WLTP that was restricted to Type 1 and Type IV tests (i.e. Option 1 supported by Japan)
- If UNR WLTP only covers Type 1 and Type IV tests
  - Should RDE etc. be included in a new series of R.83 or in a new UNR 999?
  - Cleaner to use the UNR 999 route.
Task Force Update

• Equivalent draft structures to be prepared for:
  • UNR WLTP only covering Type 1 and Type IV tests
  • UNR 999

• Clarification required from UNECE as to:
  • Whether two UNRs can have overlapping content
  • Whether one UNR can have the same content as two other UNRs (e.g. UNR 999 v. R.83 & R.24)
  • How UNR WLTP and UNR 999 would work together
  • Whether more than one GTR can be included in one UNR (e.g. GTR15 and GTR Evap into UNR WLTP)
Task Force Update

• How would UNR WLTP work alongside R.83?
  • Based on new transitional provisions for R.83, a CP will have to leave R.83 when UNR WLTP comes into force
  • Transitional provisions in R.83 may need to be amended to enable a CP (e.g. EU) to issue an approval to R.83 for export but not to accept an approval to R.83

• See next slide for a table exploring how the transition from R.83 to UNR WLTP could/would operate in Europe
## Task Force Update

- **For discussion**

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<th>Requirements /Status</th>
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<th>58A Rev 3</th>
<th>Sept. 2017</th>
<th>Adoption of R-WLTP</th>
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Task Force Update

• **Reminder – based on Option 1 being followed:**
  • Level 2 to contain options agreed by all CPS (e.g. EU 4 phase limits and Japan 3 phase limits)
  • Regional levels to contain options specific to the regions (but not more stringent than those in Level 2)
  • Additional tests / requirements to be included in a separate UNR (e.g. RDE in UNR 999)
• Slides that follow discuss GTR15 regional options
## Options in WLTP

<table>
<thead>
<tr>
<th>Annex</th>
<th>Section</th>
<th>Brief Description</th>
<th>EU</th>
<th>JPN</th>
<th>India</th>
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### ECE/TRANS/WP.29/GRPE/2017/3

<table>
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<th>India</th>
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European regional level Type 1 test

The three slides that follow provide an indication of how GTR15 would be amended to make it EU specific

Japan and any other regional levels would adapt GTR15 to meet their specific test requirements
Main amendments to GTR15 for European Regional Level Type 1 test

- Main body of GTR: Update definitions to align with EU Regulation xxx/2016 – or move them into Main Body of the new UNR
- Annex 1: Delete regional option for capped speed
- Annex 1 (and throughout GTR): Delete regional options for excluding Extra High phase
- Annex 3: Delete ‘non-European’ fuels (e.g. diesel (B5)) to align with EU xxx/2016 (excluding the low temp test fuels)
- Annex 4: Amend Tyre Selection text (para 4.2.2.1.) and table to match EU xxx/2016
- Annexes 5 and 7: delete “(if applicable)” in relation to PN measurement
- Annex 5: Delete Section 7: Additional sampling and analysis methods
Main amendments to GTR15 for European Level Type 1 test (cont.)

- Annex 6: Make $d\text{CO}_2_1$, $d\text{CO}_2_2$ and $d\text{CO}_2_3$ determination EU specific
- Annex 6: Add additional paragraphs 2.4.2.4. and 2.4.2.5. relating to 2WD / 4WD mode from EU xxx/2016
- Annex 7: Remove calculations for additional pollutants (ammonia, formaldehyde etc.). Remove details for non-European fuels.
- Annexes 7 and 8 calculation tables: ‘interpolation family result’ and ‘final criteria emission result’ – amend to align with EU xxx/2016. Add ATCT and Deterioration Factors into calculation tables
Main amendments to GTR15 for European Level Type 1 test (cont.)

- Annex 8 and appendices: Delete regional option for excluding Extra High phase
- Annex 8 and Appendix 7: delete option relating to phase specific fuel consumption
- Annex 8, Appendix 5: EU specific Utility factor (UF) for OVC-HEVs
Summary

- Key decisions still need to be taken on the way forward
- Confirmation required from UNECE secretariat that the proposed way forward would ‘work’ under the 1958 Agreement
- Detailed drafting to follow
- Informal document to be submitted to inform the 75th GRPE of progress made and outstanding issues that need to be resolved by Task Force and approved by GRPE / WP.29
Thank you for your attention

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