



Transposition of GTR15 (WLTP) into UN Regulations

Update from WLTP Transposition Task Force

Background

Transpose GTR15 into a new 'UNR WLTP' regulation

- Level 2 to contain most stringent requirements from across all regions
 - Subject to full mutual recognition: TA shall be accepted by all CPs
- Regional levels (Level 1a, 1b etc.) to contain regional requirements
 - Optional acceptance by other CPs
- New UNR WLTP to only include elements developed and agreed by WLTP IWG (i.e. would not include the EU ATCT test)
 - NB: can't include ATCT (for example) in only the EU Level 1a, as that would mean that Level 2 is not the most stringent level

Background

- UNR WLTP to be 'accompanied by' a UNR83 08 series that covers all the 'non-GTR15+Evap' requirements (e.g. OBD, Type VI test, ISC, RDE etc.)
 - The UNR83 08 series will not 'contain' the Type 1 or Type IV test (Evap), therefore in order to gain a UNR83 08 approval an approval to Level 1a or Level 2 of UNR WLTP shall also be required
 - Introduce at same time as UNR WLTP
 - As and when GTR15 and UNR WLTP add new tests (e.g. Durability) 'UNR 83 08 series' will 'shrink' in content.
 - Would enable EU to remain as a Contracting Party to UNR No. 83
 - EU would be a CP to UNR No. 83 and UNR WLTP. Japan would be a CP to just UNR WLTP
 - 'Mapping' of the UNR83 07 series content versus the potential structures for the new UNR WLTP + UNR83 08 series identified a 'gap' relating to the coverage of bi-fuel vehicle requirements in GTR15
 - Proposal by W.Coleman to amend GTR15 to bring WLTP into line with UNR83

Principle of Transposition

Three different approaches considered by Task Force

- Approach 1: Traditional approach to avoid “options” faithful to the principle of the 1958 Agreement:
 - UN R.00 covers regional level 1a; UN R.01 regional level 1b; UN R.02 top level 2
 - UN R.00, UN R.01 and UN R.02 are adopted at the same time
 - Entry into force of UN R.00: 6 months after adoption; UN R.01: 12 months after adoption; UN R.02: 18 months after adoption
 - Amendments to regional levels through series of amendments.
 - Additional administrative burden to other approaches
- Approach 2: ‘Untraditional approach’ based on proposal from UNECE secretariat (GRPE-73-26) – similar approach to that used for UNR 132 and UNR 135.
 - UN R.00 covers regional levels 1a and 1b; UN R.01 covers Level 2
 - Special provisions to allow approvals to be granted to regional level before top level is in force
 - Amendments to regional levels through Supplements (Special Provisions)
 - New series of amendments for major changes only (e.g. adding a new test)
 - Shorter transitional time period and less administrative burden than Approach 1

Principle of Transposition

- Approach 3: Untraditional approach using two sets of special provisions:
 - Regional levels and Top Level 2 in the same series of amendments – which Relies on 'novel' interpretation of Article 1.2 of Revision 3 to the 1958 Agreement
 - Article 1.2 allows UN R0 (IWVTA) to have different levels of stringency within the same version of UN R0 (U-IWVTA and L-IWVTA). The assumption under Approach 3 is that agreement of CPs could be reached such that this principle is extended to other UNRs.
 - Special provisions (#1) necessary for top level requirements (Level 2) and regional level requirements (1a/1b) to become optional, chosen by CPs.
 - Amendments to regional levels through Supplements even if the amendments include additional requirements (Special Provisions #2)
 - Shortest transitional time period of the 3 approaches

Way forward?

- Most recent discussions held during Task Force meeting (31-Aug-17)– with advice provided by UNECE secretariat and further analysis from OICA
- Approach 1 which is faithful to the 1958 Agreement proposed as the favoured route – despite the additional administrative burden that would result
- To be discussed further within the Task Force

**Potential structures
for
Regulation WLTP (all levels)
and
Regulation 83 08 series**

Generic Regulation WLTP: Main Body & Appendices

Regulation WLTP

Table of Contents

1. Scope – incl. Type 1 (excl. Type 1a) and Type 4
2. Definitions
3. Application for approval
4. Approval
5. Specifications and tests – incl. family definitions
6. Modifications of the vehicle type
7. Extensions to type approvals
8. Conformity of production (COP) – Type 1 and 4
9. ~~In-service conformity~~
9. Penalties for non-conformity of production
10. Production definitively discontinued
11. Transitional provisions – incl. introductory provisions?
12. Names and addresses of Technical Services responsible for conducting approval tests, and of Type Approval Authorities

Appendix 1 – Verification of conformity of production for Type 1 test

Appendix 2: Calculations for Conformity of Production for EVs

To be discussed at IWG COP Task Force when it convenes

The information and requirements from the main body of the WLTP GTR and the EVAP GTR will be copied into the Main Body of the new UNR WLTP – where relevant.

E.g. definitions from the GTRs will be added to Section 2 of the Main Body; and definitions of families (from Section 5 of GTR15 and Section 5 of GTR EVAP) will be added to Section 5 of the Main Body

Granting of an ECE type approval for a vehicle fuelled by LPG or NG/biomethane?

Appendix 1 - Bi-fuel gas vehicle - Calculation of LPG energy ratio

Appendix 2 - Bi-fuel vehicle - Calculation of NG/biomethane energy ratio

Proposal to introduce into GTR

Generic Regulation WLTP: Annexes

Annexes Part A

Annex 1: Engine and vehicle characteristics and information concerning the conduct of tests

Appendix 1 - Information on test conditions

Appendix 2 - WLTP Test Report*

Appendix 3 - WLTP Road Load Test Report*

Appendix 4 - WLTP Test Sheet*

Annex 2: Communication

Addendum to type approval communication No ... concerning the type approval of a vehicle with regard to exhaust emissions pursuant to Regulation WLTP, xxx series of amendments

Annex 3: Arrangements of the approval mark

* Principle as in EU-WLTP. Harmonised versions to be developed.

Could call the Evap section Part E to allow room for future inclusion of Type 2 & 3 tests.
i.e.

Annex Part C – Reserved [for Type 2]

Annex Part D – Reserved [for Type 3]

Annex Part E – Type 4 test (Evap)

Will depend on whether extra tests are included in UNR WLTP or separate UNRs.

Annexes Part B – Type 1 test (WLTP)¹

Annex 1: WLTC

Annex 2: Gear selection and shift point determination for vehicles equipped with manual transmissions

Annex 3: Reference fuels

Annex 4: Road load and dynamometer setting

Annex 5: Test equipment and calibrations

Annex 6: Type 1 test procedures and test conditions

Annex 7: Calculations

Annex 8: Pure electric, hybrid electric and compressed hydrogen fuel cell hybrid vehicles

Annex 9: Determination of method equivalency

¹ The information and requirements from the main body of the GTR (i.e. Sections 1 – 6 inclusive) will be moved into the Main Body of UNR WLTP – where relevant

Annexes Part C – Type 4 test (Evap)²

Annex 1: Type 4 test procedures and test conditions

Annex 2: Reference fuel

² Information and requirements from the main body will be moved into the Main Body of UNR WLTP – where relevant

Regulation 83 08 series: Main Body & Appendices

Table of Contents

1. Scope
2. Definitions
3. Application for approval
4. Approval
5. Specifications and tests **incl. ref to ATCT & Dual-axis dyno*** + **incl. family definitions, e.g. ATCT & PEMS families**
6. Modifications of the vehicle type
7. Extensions to type approvals
8. Conformity of production (COP) – **Type 2,3,5,6 & OBD**
9. In-service conformity – **incl. Type 1 test as it is not included in UNR WLTP**
10. Penalties for non-conformity of production
11. Production definitively discontinued
12. Transitional provisions
13. Names and addresses of Technical Services responsible for conducting approval tests, and of Type Approval Authorities

***if it can't be included in UNR WLTP**

Need to confirm where we say that to gain a UNR83 08 approval an approval to Level 1a or Level 2 of UNR WLTP shall also be required.

For discussion with UNECE secretariat.

Appendix 1 – **Reserved**

Appendix 2 – **Reserved**

NB: this means no CoP appendices. The appendices in EU-WLTP relate to Type 1 test only.

Appendix 3 - In-service conformity check

Appendix 4 - Statistical procedure for tailpipe emissions in-service conformity testing

Appendix 5 - Responsibilities for in-service conformity

NB: Appendices 3-5 relate to Type 1 test only but are needed in UNR 83 08 as they cannot be included in UNR WLTP

Appendix 6 - Requirements for vehicles that use a reagent for the exhaust after-treatment system

The information and requirements from the main body of the RDE Annex will be copied into the Main Body of the R83 08 – where relevant.

Need to decide how to link the different series of amendments to UNR 83 08 and UNR WLTP – as tests move across to UNR WLTP.

For discussion with UNECE secretariat.

Regulation 83 08 series: Annexes

Annexes Part A

Annex 1: Engine and vehicle characteristics and information concerning the conduct of tests – **should this exclude all the Type 1 and Type 4 info that is currently in UNR 83 07 series?**

Appendix 1 - Information on test conditions

Appendix 2 – ATCT test report &/or test sheet

Annex 2: Communication

Addendum to type approval communication No ... concerning the type approval of a vehicle with regard to exhaust emissions pursuant to Regulation 83 08 series of amendments

Appendix 1 - OBD – Related information

Appendix 2 - Manufacturer's certificate of compliance with the OBD in-use performance requirements

Annex 3: Arrangements of the approval mark

Annex 4: **Type 1 test - Ambient Temperature Correction Test (ATCT) and Dual-axis Dyno test (if it can't be included in UNR WLTP)**

Annex 5: Type 2 test (Carbon monoxide emission test at idling speed)

Annex 6: Type 3 test (Verifying emissions of crankcase gases)

Annexes Part A continued

Annex 7: **Reference Fuels for Low Temperature test**

Annex 8: Type 5 test (Verifying the durability of pollution control devices)

Annex 9: Type 6 test (Verifying the average emissions at low ambient temperatures)

Annex 10: **Empty Annex**

Annex 11: On-Board Diagnostics (OBD) for motor vehicles

Annexes Part B – RDE¹

Based on Appendices 1 – 9 inc. of EU-WLTP Annex 3a

Test sheet/report? – To be discussed

¹The information and requirements from the main body of RDE Annex will be moved into the Main Body of R83 08 – where relevant

Stringency – issues/factors for consideration

- Principles to be agreed. Two different ‘types’ of principle to be considered, as follows:
 1. Principle of accepting an approval that includes an element not required by the accepting CP and for which acceptance would have no implications for their particular regional requirements (e.g. if India were to accept an approval that includes the low temperature test*, or Japan accepting an approval that has included Particle Number)

* NB: this example would not be relevant if the Type 6 test is included in a separate UNR instead of UNR WLTP.
 2. When it can't be demonstrated which ‘option’ is the most stringent then it will need to be agreed between the CPs as to what ‘option’ is included in Level 2
 - E.g. one reference fuel could be the most stringent for NO_x but not for particulates whilst a second could be the opposite. It would need to be agreed amongst the parties as to which is the most critical factor and therefore which of the fuels would go in Level 2.

Stringency – issues/factors for consideration

- Reference fuels
 - Study of diesel reference fuels - process initiated by ACEA (see WLTP-20-22e)
 - Study of petrol reference fuels - Japan to commence study in 2018
- Number of phases v emissions limits
 - If 4 phases, the limits to comply with Level 1a (Europe);
 - If 3 phases the limits to comply with Level 1b (Japan).
- Number of tests - TBD
- Particle number – follows principle 1
- CoP requirements – harmonised CoP to be developed in Task Force
- ...

Open issue

- Use of dual-axis dynamometer

Summary / Next steps

- Confirm Principle for Transposition (i.e. Approach 1, 2 or 3)
- Discuss and confirm how the route would work under IWVTA
 - Task Force representatives to attend the next IWVTA session in Geneva (November 2017)
- Prepare and finalise structures for UNR WLTP (Level 1 & Level 2) and UNR 83 08 series
- Agree details for stringency levels (e.g. ref. fuels, etc.)
- Develop detailed regulatory texts
- Update on progress to be provided at IWG#21 (Geneva, January 2018)



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