

Potential structure and content for UNR WLTP – with European requirements

The information shown below is a potential structure for a new UNR WLTP which incorporates all the requirements that would be required from a European standpoint - if the new regulation were to cover all the requirements in EU type approval legislation (e.g. RDE, ATCT, RMI etc.).

The structure does not include any 'square brackets' for elements where decisions on inclusion in a top level (Level 2) WLTP regulation are yet to be decided. It has been prepared as a discussion document for the WLTP Transposition Task Force, as requested in the Task Force meeting on 8th March 2017.

R.Gardner, TRL. 6th April 2017.

1. Scope

- Scope being developed by the WLTP transposition task force

2. Definitions

- Copy (and amend for ECE) relevant definitions from Article 2 of EU xxx/2016
- Copy definitions from Section 3 of GTR15
- Are there any other definitions in ECE R83 and ECE R101 that need to be copied?
- Need to decide what to do with definitions in RDE annexes

3. Application for approval

- Copy from ECE R83 and amend as necessary
- Check Article 3 and Article 4 of EU xxx/2016 for any WLTP specifics that need to be incorporated

4. Approval

- Copy from ECE R83 and amend as necessary

5. Specifications and tests

Small volume manufacturers

- This is currently at the start of Section 5 of ECE R83 with no paragraph number. We could move it to the end and give it a paragraph number

5.1. General

- Copy and amend ECE R83.
- Incorporate relevant text from Section 5 of GTR15. NB: some is already included in ECE R83 (e.g. fuel inlet orifices and electronic system security).
- Incorporate amendments in Section 2 of Annex I to EU xxx/2016 (e.g. odometer security).

5.2. Test procedure

- Copy and amend ECE R83.
- Incorporate requirements in Section 2 of Annex I to EU xxx/2016 (Figure I.2.4.) – including the Type 1a RDE test
- Include Engine power (ECE R85) and Diesel Smoke (ECE R24) cross-references

5.3. Description of Tests

5.3.1. Type 1 test

- Copy and amend ECE R83
- Include ECE R83 table of limits
- Incorporate relevant text from Section 5 of GTR15 (e.g. 5.6 – 5.9 ‘families’)

5.3.2. Type II test (Carbon monoxide emission test at idling speed)

- Does this now become the Type 2 test?
- Copy and amend ECE R83
- Copy and amend text from Appendix 1 to Annex IV of EU xxx/2016 which recognises the switch from NEDC to WLTP for the Type I/1 test.
- NB: propose to not have an appendix or annex for the Type II test. Just this section.

5.3.3. Type III test (Verifying emissions of crankcase gases)

- Does this now become the Type 3 test?
- Copy and amend ECE R83
- Copy and amend text from Annex V of EU xxx/2016 which recognises the switch from NEDC to WLTP for the Type I/1 test.
- NB: propose to not have an appendix or annex for the Type III test. Just this section.

5.3.4. Type IV test (Determination of evaporative emissions)

- Does this now become the Type 4 test?
- Copy and amend ECE R83
- Prepare new text to reflect requirements of new EVAP GTR
- NB: need to decide where to put technical requirements – in this template it is proposed to include them in Annex F (see below).

5.3.5. Type V test (Verifying the durability of pollution control devices)

- Does this now become the Type 5 test?
- Copy and amend ECE R83 (NB: have reordered ECE R83 so that Type V test now comes before Type VI test)
- Copy and amend text from Annex VII of EU xxx/2016 which recognises the switch from NEDC to WLTP for the Type I/1 test.
- NB: propose to not have an appendix or annex for the Type V test. Just this section.
- This will be updated when the new Durability requirements are developed in WLTP Phase 2b.

5.3.6. Type VI test (Verifying the average emissions at low ambient temperatures)

- Does this now become the Type 6 test?
- Copy and amend ECE R83 (NB: have reordered ECE R83 so that Type VI test now comes after Type V test)

- Copy and amend text from Annex VIII of EU xxx/2016 which recognises the switch from NEDC to WLTP for the Type I/1 test.
- NB: propose to not have an appendix or annex for the Type VI test. Just this section.
- This will be updated when the new low temperature requirements are developed in WLTP Phase 2b.

5.3.7. Emission data required for roadworthiness testing

- Copy from ECE R83 and amend as necessary

5.3.8. On-board diagnostics OBD – Test

- Copy from ECE R83 and amend as necessary
- Copy and amend relevant text from Annex XI of EU xxx/2016 which recognises the switch from NEDC to WLTP for the Type I/1 test.
- NB: see comments for Appendix 7. It may be that Appendix 7 is not included and all the information needed for OBD is in Section 5.3.8. (this section)

5.3.9. Determination of CO₂ emissions and fuel consumption from N1 vehicles submitted to multi-stage type-approval

- Copy from Annex XII of EU xxx/2016.
- The requirements are not in UNR 101. Need to decide if they should be in Main Body or put in an appendix or annex.

6. Modification of vehicle type

- Copy from ECE R83 and amend as necessary

7. Extensions to type approvals

- Copy (and amend for ECE) new extensions requirements from Section 3 to Annex I of EU xxx/2016 that reflect WLTP

8. Conformity of production

- Copy (and amend for ECE) new CoP requirements from Section 4 to Annex I of EU xxx/2016, along with the new Appendix 1 and Appendix 2 to replace those currently in ECE R83.

9. In-service conformity

- Copy from ECE R83 – and retain Appendices 3, 4 and 5.
- NB: As ISC is being looked at in WLTP Phase 2b, an alternative would be to take the approach in EU xxx/2016 and provide a cross-reference to ECE R83 from this section, rather than repeating ECE R83 requirements.

10. Penalties for non-conformity of production

- Copy from ECE R83

11. Production definitively discontinued

- Copy from ECE R83

12. Transitional provisions

- To be discussed

13. Names and addresses of Technical Services responsible for conducting approval tests, and of Type Approval Authorities

- Copy from ECE R83

RMI??? – need to decide if/how/where to include these specific EU requirements.

Appendices

Appendix 1: Verification of conformity of production for Type 1 test—statistical method

- Copy the updated CoP procedure from EU xxx/2016 (Annex I Appendix 1)

Appendix 2: Calculations for Conformity of Production for EVs

- Copy the new calculations from EU xxx/2016 (Annex I Appendix 2)

Appendix 3: In-service conformity check

- Copy from ECE R83 Appendix 3
- An alternative would be to provide a cross-reference to the ECE R83 Appendix 3 in Section 9 of this regulation and not include this appendix.

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

- Copy from ECE R83 Appendix 4
- An alternative would be to provide a cross-reference to the ECE R83 Appendix 4 in Section 9 of this regulation and not include this appendix.

Appendix 5: Responsibilities for in-service conformity

- Copy from ECE R83 Appendix 5
- An alternative would be to provide a cross-reference to the ECE R83 Appendix 5 in Section 9 of this regulation and not include this appendix.

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

- Copy from ECE R83 Appendix 6 – and amend when new requirements are developed and approved (work currently being undertaken by a EU WLTP task force)

Appendix 7, 7a and 7b: On-board diagnostics (OBD) for motor vehicles

- Base on Annex XI of EU xxx/2016 which cross-references to Annex 11 of ECE R83
- If it is not appropriate to have OBD as an appendix and instead it should be an annex, then this information could be included in a new Annex E.
- NB: many of the amendments in Annex XI of EU xxx/2016 would not be relevant for this new UNR WLTP as they are either:
 - Changes to reflect Brussels legislation rather than Geneva (e.g. reference to limits in EC 715/2007 instead of ECE R83 limits); or
 - They are referring to amendments in ECE R83 that have now been made in Geneva (e.g. clarifying where “limits” refers to “OBD threshold limits” – see ECE/TRANS/WP.29/GRPE/2016/11)

If after removing the ‘unwanted’ amendments there are a limited number of changes required to ECE R83, then these could possibly be communicated in Section 5.8 of this new regulation rather than in this new Appendix 7.

Annexes

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

- Appendix 1: Copy the new WLTP updated **Model Information Document** from Appendix 3 to Annex I of EU xxx/2016 and the Appendix to the Information Document (Information on Test Conditions)
- Appendix 2: Copy the new WLTP **Test Report** requirements from Appendix 8a to Annex I of EU xxx/2016
- Appendix 3: Copy the new WLTP **Road Load Test Report** requirements from Appendix 8b to Annex I of EU xxx/2016
- Appendix 4: Copy the new WLTP **Test Sheet** requirements from Appendix 8c to Annex I of EU xxx/2016

Annex B: Communication

- Appendix 1: Amend ECE R83 Annex 2 Communication and Addendum to Type Approval Communication to include the WLTP updates provided in Appendix 4 to Annex I of EC xxx/2016:
 - Model of Type Approval Certificate
 - Addendum to the Type Approval Certificate
 - Appendix to the Addendum
- Appendix 2: Copy Appendix 1 to Annex 2 of ECE R83, 'OBD-Related Information'
- Appendix 3: Copy Appendix 2 to Annex 2 of ECE R83, 'Manufacturer's certificate of compliance with the OBD in-use performance requirements'

Annex C: Arrangements of the approval mark

- Copy and amend Annex 3 of ECE R83
- New table of letters needed to denote vehicle class and stage

Annex D: Real Driving Emissions (RDE)

- Copy Annex 3a, 3b and 3c from EU xxx/2016 and make UN specific where relevant (e.g. refer to the UN table of limits rather than the EU table)

Annex E: OBD?

- See comment under Appendix 7 above.

Annex F: Evaporative Emissions?

- The new GTR YY (Evap) will need to be incorporated somehow, without interfering with the annex numbering of GTR15. Could include it as Annex F.

Annex G: Access to vehicle OBD and vehicle repair and maintenance information???

- Copy and amend Annex XVI from EU xxx/2016

New Annexes can be added when new WLTP updates of other tests are developed (e.g. Durability, Low Temperature test etc.). We could consider reserving all the new annexes that can be foreseen so that they can be labelled and ordered in a logical fashion.

Annexes for Type 1 test

Baseline document is the version of GTR15 submitted to 75th GRPE as Working Document ECE/TRANS/WP.29/GRPE/2017/9.

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

The annexes will retain their GTR numbering.

Annex 1: WLTC

- Copy and amend GTR (where necessary to make Europe specific)

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

- Copy and amend GTR (where necessary to make Europe specific)
- NB: no amendments currently envisaged for this annex

Annex 3: Reference fuels

- Copy and amend GTR (where necessary to make Europe specific)

Annex 4: Road load and dynamometer setting

- Copy and amend GTR (where necessary to make Europe specific)

Annex 5: Test equipment and calibrations

- Copy and amend GTR (where necessary to make Europe specific)

Annex 6: Type 1 test procedures and test conditions

- Copy and amend GTR (where necessary to make Europe specific)

Annex 6a: ATCT

- Copy Sub-Annex 6a to Annex XXI of EU xxx/2016

Annex 7: Calculations

- Copy and amend GTR (where necessary to make Europe specific)

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

- Copy and amend GTR (where necessary to make Europe specific)

Annex 9: Determination of method equivalency

- Copy and amend GTR (where necessary to make Europe specific)
- NB: no amendments currently envisaged for this annex