



# **Transposition of GTR15 (WLTP) into UN Regulations**

## **Update for GRPE from WLTP Transposition Task Force**

### **January 2018**

# Background

Transpose GTR15 WLTP 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
  - EU and Japan are the two regions to register an interest so far – other CPs are invited to join
- New UNR WLTP to only include elements developed and agreed by WLTP IWG (i.e. would not include the EU ATCT test)
- UNR WLTP to be 'accompanied by' a UNR83 08 series that covers all the requirements of UNR83 07 series not covered by new UNR WLTP (e.g. OBD, Low temperature test etc.)
  - 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.
  - EU would be a CP to UNR No. 83 and UNR WLTP. Japan would be a CP to just UNR WLTP

# Schematic of proposed transposition route

## UNR 83 08 series

~~Type I test~~

Type II test – modified for  
'WLTP world' \*

Type III test – modified for  
'WLTP world' \*

~~Type IV test~~

Type V test – modified for  
'WLTP world' \*

Type VI test – modified for  
'WLTP world' \*

OBD\*, ISC, ATCT, RDE

+

Shall demonstrate compliance  
with Level 1a of UNR WLTP

## UNR WLTP

Level 2 most stringent –  
including Type 1 and Type 4  
tests

Level 1a  
(Europe) –  
including  
Type 1 and  
Type 4 tests

Level 1b  
(Japan) –  
including  
Type 1 and  
Type 4 tests

\* 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)



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

**Draft to provide an overview**

# 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

# 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.

## Annexes Part B – Type 1 test (WLTP)<sup>1</sup>

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

<sup>1</sup> 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)<sup>2</sup>

Annex 1: Type 4 test procedures and test conditions

Annex 2: Reference fuel

<sup>2</sup> 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 + 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

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.**

# 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)**

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 – RDE<sup>1</sup>

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

**Test sheet/report? – To be discussed**

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



# Potential approaches to transposition

# Principle of Transposition

Three different approaches to transposition have been considered by the Task Force (see WLTP-20-04e and IWVTA-25-11 for details)

- Approach 1: Traditional approach to avoid “options”. Faithful to the 1958 Agreement.
  - **UN R.00 covers regional level 1a; UN R.01 covers regional level 1b; UN R.02 covers top level**
  - Amendments to regional levels through either supplements or series of amendments
  - Pro: Fully in line with the new 1958 Agreement
  - Cons: Long lead in time (18 months) before all levels are in force + High administrative burden.
  - Solution(?): If Legal Office OLA were to accept simultaneous notification and entry into force
- Approach 2: ‘Untraditional approach’ - to speed up process
  - **UN R.00 covers all regional levels 1a, 1b; UN R.01 covers top level 2**
  - Amendments to regional levels through either supplements or series of amendments
  - Pro: Shorter lead in time and reduced administrative burden compare to Approach 1.
  - Con: Could become complicated (potentially unworkable?) after rounds of amendments are made; also, the base version UN R.00 would contain options at choice of CPs
- Approach 3: Untraditional approach using two sets of special provisions
  - **UN R.00 covers all levels (top level 2 as well as the regional levels 1a, 1b, ...)**
  - Pro: Shortest lead in time. Con: against the spirit of the 58 Agreement.

## Approach 1 timing issue - example

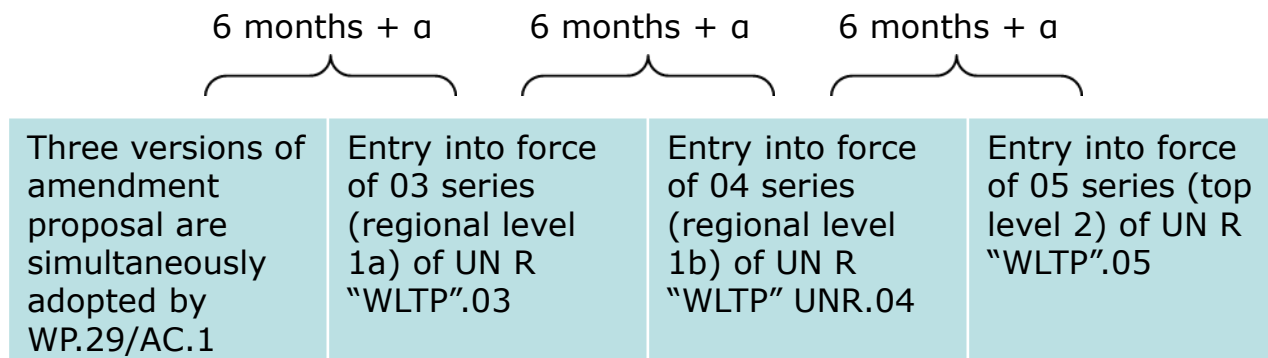
Where:

UN R "WLTP" 00 series (regional level 1a for EU)

UN R "WLTP" 01 series (regional level 1b for Japan)

UN R "WLTP" 02 series (top level 2)

In the case that requirements for both regional levels 1a and 1b are strengthened, it will take 18 months + 3a\* to amend UN R "WLTP" consisting of three consecutive versions.



\* "a" represents an administrative period of time before the 6 month period - which may be shorter under Rev.3 of the 1958 Agreement than under Rev.2.

## IWVTA #25 – November 2017

The three different approaches were presented to IWVTA #25 to seek guidance on the best approach to use (IWVTA-25-11).

- All 3 approaches were presented but it was made clear that the Transposition Task Force did not consider Approach 3 to be an acceptable approach to take further.
  - IWVTA #25 agreed with this conclusion
- The UNECE secretariat were doubtful that OLA would agree to a shortening of the timescales – needed to overcome the 18 month lead in time issue for Approach 1.
- Given the longer timescales and the additional administrative burden of Approach 1 compared to Approach 2, the UNECE secretariat recommended that Approach 2 should be followed initially (with the appropriate Introductory Provisions) – with the option to switch to Approach 1 if necessary should Approach 2 become too complex and too difficult from an administrative point of view.
- The IWVTA #25 did not provide a recommendation as to whether Approach 1 or Approach 2 would be preferred.

## Next steps

- Make a request to OLA to accept simultaneous notification and entry into force of the three levels under Approach 1
  - See Appendix 1 for initial draft of request.
  - Advice will be provided by UNECE Secretariat as to the most effective way to make the request – based on their previous experience.
- Confirm approach for transposition (i.e. Approach 1 or 2)
- Finalise structures for UNR WLTP (Levels 1 & 2) and UNR 83 08 series
- Agree details for stringency levels (e.g. reference fuels)
  - Diesel reference fuel study underway. Petrol reference fuel study to commence Spring 2018.
- Develop detailed regulatory texts
- Plan is to have an Informal UNR WLTP for 78<sup>th</sup> GRPE January 2019 and a Working Document for 79<sup>th</sup> GRPE June 2019.



## Contact information

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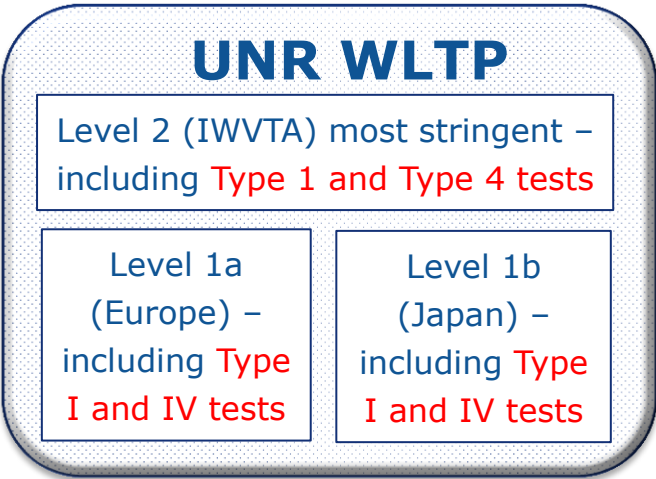
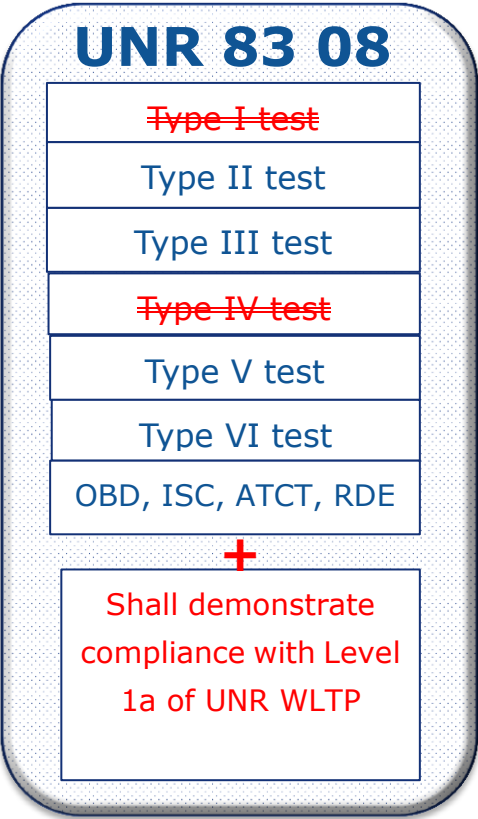
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# A request to OLA to shorten the period necessary to establish and amend new UN Regulation “WLTP”

The purpose of this document is to request OLA to allow an unconventional approach to be taken in establishing and amending the proposed new UN R “WLTP”. This new regulation is unusual in that it has different levels of stringency within one UN Regulation. In taking this approach, prior endorsement by WLTP Informal Group, GRPE and WP.29 shall be required.

## 1. Background

- At its November 2015 session WP.29 agreed to transpose UN GTR on WLTP into a UN Regulation in a hierarchical manner with different levels of stringency that reflect different national / regional requirements.
- Creation of WLTP Transposition Task Force was endorsed in June 2016 at the 169<sup>th</sup> session of WP.29.
- Kick-off meeting for WLTP Transposition Task Force was held in February 2017 and eight meetings have been held so far.
- Discussions in the Task Force resulted in the proposal to have the new UNR “WLTP” accompanied by a new 08 series of amendments to UNR 83 which would include all the other emissions requirements that are not included in the new UNR “WLTP”.



- At the 6<sup>th</sup> WLTP Transposition Task Force held in August 2017 three different approaches to establish and amend UN R “WLTP” were discussed to avoid options of requirements level 1a, 1b and 2 included in one UN Regulation.
- Three different approaches (refer to document IWVTA-25-11) were submitted to IWVTA Informal Group at its 25<sup>th</sup> session in November by the WLTP Transposition Task Force seeking advice. IWVTA Informal Group could not choose the best approach. The bottleneck for the preferred approaches is their lengthy timescales necessary for establishment and series amendment of UN R “WLTP” described below.

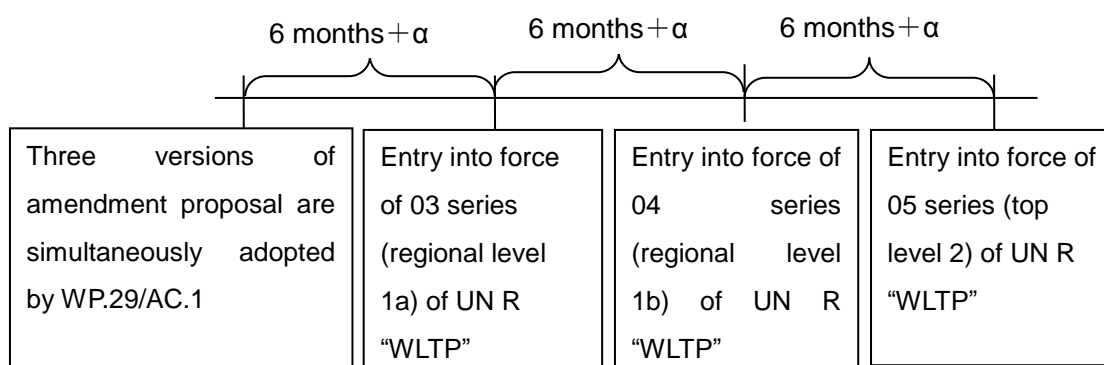
Example)

Where; - UN R “WLTP” 00 series (regional level 1a for EU)

- UN R “WLTP” 01 series (regional level 1b for Japan)

- UN R “WLTP” 02 series (top level 2)

In case requirements for both regional levels 1a and 1b are strengthened, it will take 18 months + 3 $\alpha$ <sup>1</sup> to amend UN R “WLTP” consisting of three consecutive versions.



## 2. Problems

- It will take more than 18 months to establish/ amend UN R “WLTP” consisting of three consecutive versions.
- UN R “WLTP” is supposed to have introductory provisions which might say:  
*“As from the date of entry into force of this Regulation (03 or 04 series of amendments), Contracting Parties shall not grant type approvals according to this Regulation until the date of entry into force of 05 series of amendments (top level 2)”.*

Therefore EU/Japan could not introduce 03 series of amendments (regional level 1a)/ 04 series of amendments (regional level 1b) in EU/Japan until the date of entry into force of 05 series of amendments (top level 2). Thus, Contracting Parties could not impose more stringent emission requirements in their territories in a timely fashion.

<sup>1</sup> “ $\alpha$ ” represents an administrative period of time before the 6 month period - which may be shorter under Rev.3 of the 1958 Agreement than under Rev.2.



### **3. Request to OLA**

OLA is requested to handle three consecutive versions of UN R "WLTP" collectively and simultaneously when it is established or amended in order to shorten the timescales necessary for administration.

### **4. Justification**

Three consecutive versions of UN R "WLTP" may not be series amendments in essence but a set of different levels of stringency for emission requirements. Therefore it would be reasonable to handle three consecutive versions of UN R "WLTP" collectively and simultaneously when it is established or amended in order to shorten the timescales necessary for administration. If at least one version of UN R "WLTP" should be rejected, all of the three versions should be regarded as rejected.