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Swiss Proposals

to the UNECE WLTP Low & Realistic Winter Temperature Task Force

Paris, 19.-20.11.2018

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Proposal 1

Name for the UN GTR



Proposal 1: Name for the UN GTR

Examples: GTR No. 15 & GTR No. 19

Global technical regulation on Worldwide harmonized Light vehicles Test Procedures (WLTP)

I. Statement of technical rationale and justification

A. Introduction

Source: ECE/TRANS/WP.29/2017/98

Global technical regulation on the EVAPorative emission test procedure for the Worldwide harmonized Light vehicle Test Procedure (WLTP EVAP)

I. Statement of technical rationale and justification

A. Introduction

Source: ECE/TRANS/WP.29/2017/94



Proposal 1: Name for the UN GTR *Options*

Global technical regulation on **LOW** and Realistic Winter **TEMP**erature test procedure for the Worldwide harmonized Light vehicle Test Procedure (**WLTP LOW TEMP**)

Option 1

Global technical regulation on Low and Realistic **WINTER** **TEMP**erature test procedure for the Worldwide harmonized Light vehicle Test Procedure (**WLTP WINTER TEMP**)

Option 2

Global technical regulation on Low and Realistic **WINTER** Temperature test procedure for the Worldwide harmonized Light vehicle Test Procedure (**WLTP WINTER**)

Option 3

Global technical regulation on **Low** and Realistic Winter **T**emperature test procedure for the Worldwide harmonized Light vehicle Test Procedure (**WLTP LowT**)

Option 4

→ Your thoughts – other proposals?



Proposal 1: Name for the UN GTR

Discussion & Decision

**Global technical regulation on Low Temperature test procedure
for the Worldwide harmonized Light vehicle Test Procedure
(WLTP LOW TEMP)**

*Option 1 modified
(«...and Realistic
Winter...» removed)*

Note:

If in the process of the development an amendment to GTR15 appears to be favorable, the name will be adapted accordingly.



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Proposal 2

Annex 1 (Cycles): Drive Cycle



Proposal 2: Annex 1 (Cycles)

Drive Cycle

- Consider the same cycle as for WLTP Type 1 test; i.e. all 4 phases of WLTC (L-M-H-XH)
 - Emission behavior (3 vs. 4 phases): considerable amount in XH-phase for some vehicles tested, as shown by Empa and JRC at 6th, 16th and 18th TF meeting
 - OVC-HEV: total emissions during CD can be higher than during CS test
- Exclude class 1 vehicles
 - India, as the only stakeholder having class 1 vehicles has no interest in a «Low and Realistic Winter Temperature» test (confirmed during GRPE-77).



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Proposal 3

Annex 6 (Test Procedure):
Road Load Increase



Proposal 3: Annex 6 (Test Procedure)

Road Load Increase

- Add a general statement in Annex 6 (paragraph 2.3.1):

«In the case of testing at -7°C , the road load and running resistance values shall be increased by 10 per cent.»

- UN R83 and US EPA 1066.710 allow calculating road load based on a 10 per cent reduction in coastdown target time.
- A reduction of the coastdown time translates into a 10 per cent increase in road load.



Proposal 3: Annex 6 (Test Procedure)

Discussion & Decision

- Add a general statement in Annex 6 (paragraph 2.3.1):

«In the case of testing at -7°C , the road load and running resistance values shall be increased by 10 per cent.»



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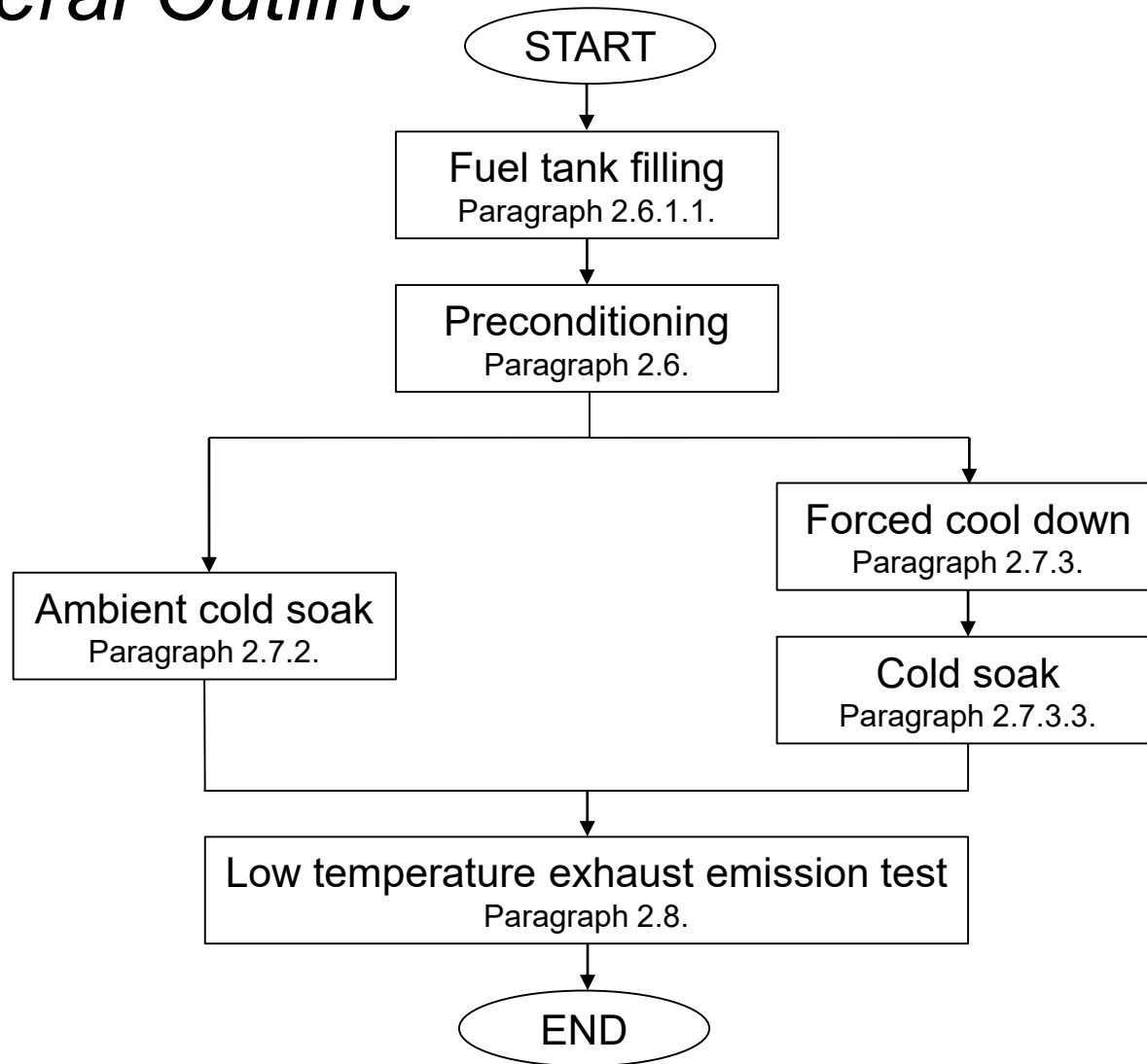
Proposal 4

Annex 6 (Test Procedure)



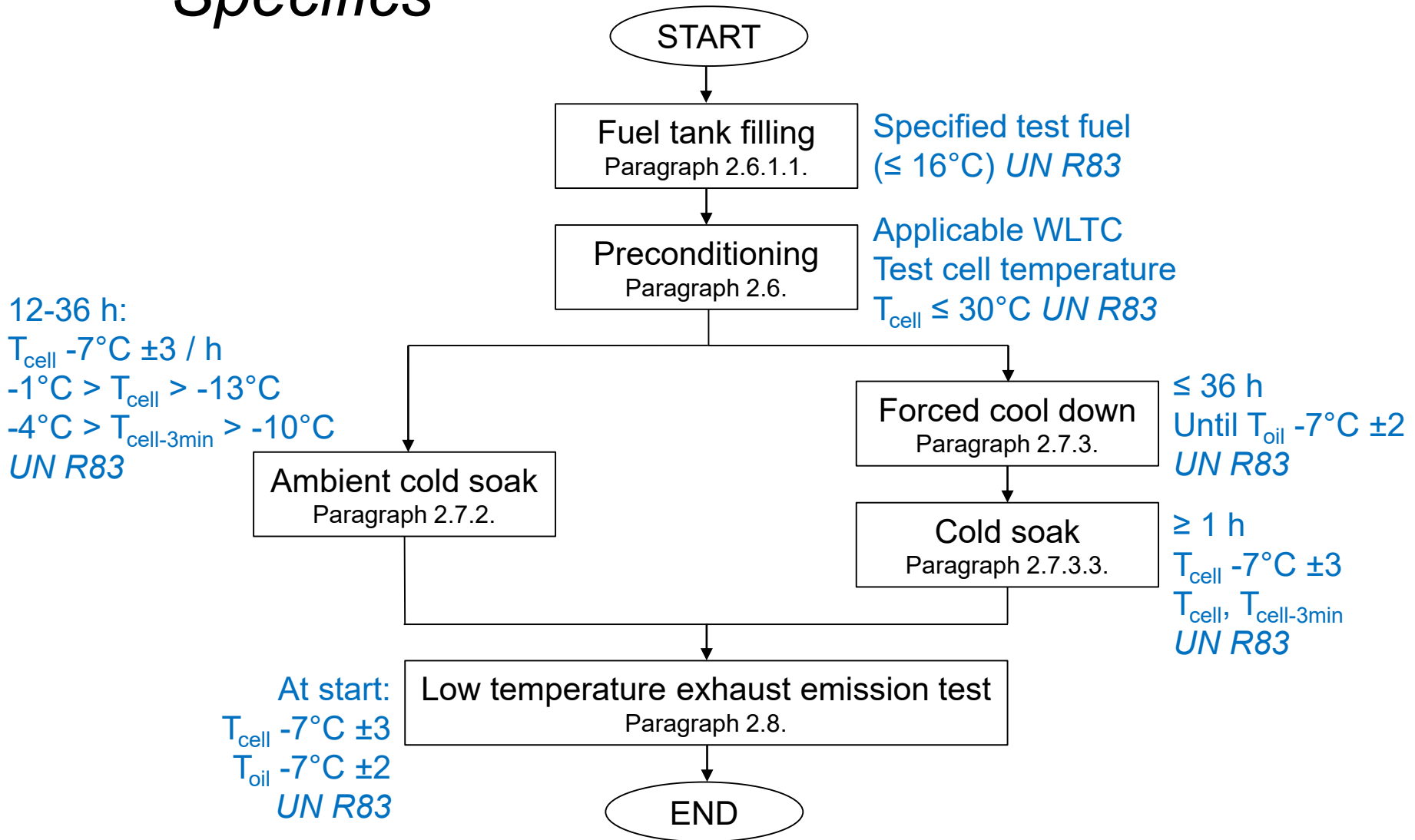
Proposal 4: Annex 6 (Test Procedure)

General Outline





Proposal 4: Annex 6 (Test Procedure) Specifics





Proposal 4: Annex 6 (Test Procedure)

Discussion

- At test start: $T_{\text{cell}} -7^{\circ}\text{C} \pm 3$ might need to be $\pm 2^{\circ}\text{C}$ to avoid AdBlue[®] freeze
- Preconditioning should be done at $T_{\text{cell}} -7^{\circ}\text{C}$, not $\leq 30^{\circ}\text{C}$ as specified in UN R83, since preconditioning is part of the test calibration
- Specified test fuel temperature ($\leq 16^{\circ}\text{C}$) to be discussed within Japan
- Add T_{coolant} to T_{oil} requirement (but measuring T_{oil} is generally easier; both are measured according to GTR15)
- During test: Type 1 requires $T_{\text{cell}} 23^{\circ}\text{C} \pm 5$;
for WLTP LOW TEMP a $T_{\text{cell}} -7^{\circ}\text{C} \pm 3$ is proposed.



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Proposal 5

Family Concept



Proposal 5: Family Concept

General Outline

- Consider a family concept for low temperature tests
 - Reduce “testing burden” in minimizing the number of tests to be performed at -7°C
 - Pool pollutant relevant systems; i.e. one test for same engine class & aftertreatment system configuration
 - In the style of RDE family concept
- Consider similar approach for BEVs
 - ➡ **Switzerland is open for discussion**



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Thank you for your attention