

Auxiliaries Sub-Group
for
Low Temperature Task Force @UN

22nov2019-C.Petitjean (Clepa)

Auxiliaries Sub-Group for Low Temperature UN Task Force

→ An Auxiliary Devices sub-Group has been formed @ UN Geneva meeting end may 2019

[WLTP Low Temp TF] / Auxiliary devices Group Participants > Boîte de réception x

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À moi, d.vartholomaios, t.gyoeroeg, miyazaki-s2t3, noriyuki_ichikawa, Mayumi_Morimoto, Peter.Bonsack, iddo, les.hill, harald.kurz, hans.mathiasson, william.coleman,

Dear all,

Attached the list of people that have requested to be included in the Low T -Auxiliary devices mailing list.

UNECE WLTP Low and Realistic Winter Temperature Task Force - Auxiliary devices Group

List of Participants

Name	First Name	Affiliation	E-Mail
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2 main activities managed under this Auxil sub-group

as proposed and agree @ LT TF meeting by 15Sept2017

Activity 1 for Assessment Matrix: **Concluded in Bern meeting 25sept2019**

- ➔ to Identify & justify the list of Auxiliaries to be included in new GTR annex
 - ➔ See page 4

Activity 2 for Technical Grid: **Starting from now**

- ➔ To collect drafting elements about activation along test procedure of the selected Auxiliaries (in Activity 1) in order to support the drafting of new GTR annex.
 - ➔ See page 6

Reminder: Some considerations for the new Test Procedure including Auxiliaries at Low Temperature.

- Keep tests at the level of the vehicle (such as US approach).
- Avoid test complexity (easy to repeat and reproduce).

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Activity 1 closing: Identify & justify the Auxiliaries to be considered for drafting

Comments were received from EMPA, OICA, Japan & EU Commission along the summer 2019. Comments were discussed in a webex meeting by 20sept2019 to get the following conclusions (in below table)

	Auxiliaries to consider	Assessment summary decision TO CLOSE ACTIVITY 1 selected Auxiliaries will be then considered for Activity 2
n°1	Heating system for cabin comfort via HVAC blown air side (heater core, PTC, Heat Pump (see below),...)	UN Auxilliary: yes Activity 2 to do: yes to include in GTR with test procedure details per power-train type
n°2	Heat pump variations (if needed versus n°1 listed above)	UN Auxilliary: yes Activity 2 to do: yes to include in GTR with test procedure details per power-train type
n°3	Heating system for cabin comfort via seat/radiant panels,...	UN Auxilliary: yes Activity 2: to be considered anyway in activity 2 (challenging for jan2020 if too much technical complexity for the test procedure) EMPA "may be" EUcom opinion "Yes" set at max hot for the worst case vehicle in family Japan & OICA opinion "No yet" considering deadline jan2020
n°4	De-frosting/icing/fooging system	UN Auxilliary: yes Activity 2: to be considered anyway in Activity 2 but taking care of overlapping with existing regional safety procedures. (Challenging for jan 2020 if too much technical complexity for the test procedure) EMPA, Eucom, Japan opinion "May be". OICA opinion "No"
n°5	Thermal storage system	UN Auxilliary: NO (as directly activate by the car control) Activity 2: NO
n°6	Battery Thermal Management system	UN Auxilliary: NO (as directly activate by the car control) Activity 2: NO
n°7	System needed for Plug or wires along charging phase	UN Auxilliary: NO (as directly activate by the car control) Activity 2: NO
n°8	Additional burners	UN Auxilliary: yes Activity 2: NO
n°9	Lighting	UN Auxilliary: yes Activity 2: to be considered anyway in Activity 2 but taking care of overlapping with existing regional safety procedures. (Challenging for jan 2020 if too much technical complexity for the test procedure) EMPA & EUcom opinion "Yes" set on to consider worst case vehicle in family Japan & OICA opinion "No"
n°10	Infotainment equipment	UN Auxilliary: yes Activity 2: NO EMPA, Eucom, Japan & OICA opinion "No"

Conclusion: Activity 2 to do only for

Auxiliaries n°1 & 2 to identify drafting elements to be included in new annex

Auxiliaries n°3, 4 & 9 to identify drafting elements and confirm that there is no contradiction with existing safety Regulations and that a simple test procedure can be found.

➔ key points of discussion are about the need to consider a worst case for one of the vehicle in the family together with the intended use of the test results.

So that Auxiliaries n°5,6,7,8,10 will not be considered for Activity 2

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Activity 2: Technical Grid for each of the selected Auxiliary @ Activity 1

→ Example below for the template to apply to each specific auxiliary

	In each below cell, please indicate Technical drafting elements for the Activation of Auxiliary along test according various powertrain types				
Test procedure Phases	ICE	NOVC-HEV	OVC-HEV	BEV	Comments
Pre-conditioning	??	??	??	??	??
Charging	Not Applicable	Not Applicable	??	??	??
Soaking	??	??	??	??	??
Runing WLTP cycle	??	??	??	??	??

Next action for drafting: All ?? (means each combined phase & pwt type for a given auxiliary) must be drafted with Technical elements answering to the following questions:

- Is the auxiliary **activated** or not ?
- If **YES**:
 - How to activate it ? (what actions manual / automatic controlled ?)
 - When along the specific phase ??
 - What target if requested ??
 - ... any other element if needed

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Activity 2: Technical Grid drafted for Auxiliary n°1

UN WLTP Phase 2 item					
Low & Realistic t° Technical Grid to identify test conditions to apply to Auxiliary n°1 selected in Assessment Matrix (Final)					
Technical drafting elements indicated in cells below Red when To Be Confirmed & blue when agreed for the Activation of Heating system for cabin comfort via HVAC blown air side (Auxil n°1)					
Phases of the test procedure	ICE	NOVC-HEV	OVC-HEV	PEV	Comments and/or decision to take
Pre-conditioning	Not Activated	Not Activated	Not Activated	Not Activated	TBC: just record the Air T° @ driver head location in the cabin.
Charging ==> only for OVC-HEV & PEV combined with Soaking	Not Applicable	Not Applicable	TBC: more in favour to "Not Activated" in order to keep simple and have the same impact of heating weither vehicle at plug or not before drive run	TBC: more in favour to "Not Activated" in order to keep simple and have the same impact of heating weither vehicle at plug or not before drive run	Back-ground: some car will be equipped to pre-heat the cabin when charging @ plug to improve the welcome comfort and minimize heating impact on range in Runing phase. For consumer information: it is better to not consider an optional function such as pre-heating of cabin at plug. Back-up: the pre-heating function can be then if valid tentatively applied for Eco-Innovation or off-cycle credit. TBC for data recording: just record the Air T° @ driver head location in the cabin.
Soaking	Not Activated	Not Activated			
Runing WLTP cycle	TBC: "Activated" see details in last column comments	TBC: "Activated" see details in last column comments	TBC: "Activated" see details in last column comments	TBC: "Activated" see details in last column comments	Activation of auxilliary n°1: Comfort setting at control panel Manual system ==> t° @ max hot, blower speed max, air distribution foot & defrost (air mix mode), all front air outlet closed. Automatic System ==> activate the auto mode with a cabin set point of 20 to 22 °C (TBC ex), all front air outlet closed TBC: only record air t° @ driver head location in the cabin. TBC: is there a need of a criteria to assess the achievement of the cabin set point t° or just request to be higher or just recording ?

➔ Excel file to be circulated to Auxiliary devices sub-group by 25oct2019

➔ for comments on Technical Grid for Auxiliary 1 by 22nov2019

➔ OICA will provide latest by 26nov2019

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At 08nov2019 TF webex there was a discussion about the best way for drafting the Auxiliaries portion of Test Procedure in // of overall drafting process of Annex Low Temp.

The conclusion was:

to provide a short paragraph of structured text to be then included into the overall Test Procedure annex with the support of Rob for final drafting.

Steps from now:

- 1- Combine (in a synthetic draft text) the collected comments on Technical Grid → CP by 29nov2019
- 2- Distribute the synthetic draft text to Sub-Group Auxil by 01dec2019 to get comments on draft text
- 3- Organize a webex with Sub-Group Auxil by 09dec2019 to fine-tune the synthetic draft text
- 4- Present the synthetic draft text to Low Temp TF webex of 12dec2019 prior to inclusion of TF report for Geneva meeting

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Activity 2 to speed-up:

Q4/2019:

- make sure to have Activity 2 being fully performed for Auxiliaries n°1 & 2
- identify potential clarifications needed for Auxiliaries n°3, 4 & 9

Q1/2020:

- finalize Activity 2 for all confirmed Auxiliaries for inclusion in new Annex