

40 <sup>th</sup> WLTP Sub Group EV in conjunction with 41 <sup>st</sup> LowT TF Meeting	
<b>Date</b>	8 April 2020
<b>Time</b>	9:00 to 12:00 CEST 9:00 to 10:00 CEST: part LowT TF 10:00 to 12:00 CEST: part SG EV
<b>Title</b>	40 <sup>th</sup> WLTP Sub Group EV / 41 <sup>st</sup> LowT TF Meeting – Minutes (SG EV in conjunction with LowT TF)
<b>Location</b>	Web-Audio

<b>0</b>	<b>Revision &amp; adoption of meeting minutes &amp; agenda</b>
	<ul style="list-style-type: none"> <li>- Meeting minutes of web-audio meeting on 2 April 2020 (SG EV) <a href="#">01 WLTP SG EV Minutes 2 April 2020.pdf</a> → adopted</li> <li>- Adoption of the agenda <a href="#">00 WLTP SG EV &amp; LowT TF Agenda 8 April 2020.pdf</a> → adopted</li> </ul>
<b>1</b>	<b>GTR#15 Amd#6 WD: LowT TF square brackets topics (Low Temp → ICE_#)</b>
	<p style="text-align: center;">--- Part LowT TF ---</p> <p><u>Square bracket topics in GTR#15 Amd#6 WD related to Low Temp</u></p> <p>All square bracket items to be discussed and concluded within the LowT TF can be found in the following document:</p> <p><i>Working Document for GTR No. 15 Amendment 6 (document with track changes)</i> <a href="#">ECE-TRANS-WP29-GRPE-2020-14e Track.docx</a></p> <p>An overview list of the remaining square bracket topics now being in this working document (WD) for GTR No. 15 Amendment 6 is given in the following document (pure ICE vehicle's topics are labelled "ICE_#"):</p> <p><i>Overview table of square bracket topics of GTR#15 Amd#6 WD</i> The latest document <b>20xyy_Status Square bracket topics_Amd#6 WD.xlsx</b> can be found in the UNECE wiki area: <a href="#">Optional annex Low T - Drafting</a></p> <p>→ LowT TF members are asked to use the sheet named "Input from ..." of this overview table to prepare their input, comments and proposals for upcoming web-audio meetings.</p> <p><u>Discussion/conclusion on topics:</u></p> <p><b>ICE_1:</b></p> <p>Bill Coleman (VW, OICA) mentioned that the text in paragraph 1.1. (before the table) might need to be adapted to reflect the wording in Table A13/1. The wording in paragraph 1.1. (before the table) refers to "different categories of vehicles" while the wording in Table 13/1 refers to "different powertrains".</p> <p>Nick Ichikawa (co-TS, JASIC) expressed the need to keep the square brackets for Table A13/1 for the moment.</p> <p>→ no final conclusion yet</p>

**ICE\_2:**

Nick Ichikawa (co-TS, JASIC) asked for clarification on the EC's position concerning this point.

Iddo Riemersma (on behalf of EC) mentioned at first not to be aware of the allowance to change "n\_min\_drive" and therefore asked Heinz Steven (GS TF chair) for further information. Based on H. Steven's calculations and advice, EC re-positioned their opinion on this.

→ no final conclusion yet

**ICE\_10:**

Bart Thedinga (EC) presented an updated proposal for selection of vehicles for Type 6 testing with amendments to paragraphs 2.6.2.2.2. (PMR) and 2.6.2.2.6. (number of interpolation families) to link PMR and  $V_H$  and  $V_L$  concepts:

[200407 Type 6 test vehicle selection EC.pdf](#)

Nick Ichikawa (co-TS, JASIC) expressed support of this concept and will consult with MLIT on this proposal.

Jochen Wiessner (Daimler, ACEA EV) stated that an extension rule would be required and asked for a tolerance to  $PMR_L$  and  $PMR_H$  to be introduced.

Bart Thedinga (EC) replied to take into consideration to add a tolerance for  $PMR_L$  and  $PMR_H$ .

Iddo Riemersma (on behalf of EC) stated that such an extension rule would need further scrutiny.

Bill Coleman (OICA) offered to provide a text proposal to address this issue. He also pointed out the need to review, for clarity reasons, the requirements for testing bi-fuel and flex-fuel vehicles. This issue will be reviewed in parallel by some TF members and the TF will be informed accordingly about the common understanding of the text.

→ no final conclusion yet

**ICE\_9 & ICE\_18:**

Nick Ichikawa (co-TS, JASIC) asked for clarification on the EC's position concerning these two points.

Regarding **ICE\_9** clarification on the source of the proposed text was requested.

Ricardo Suarez (JRC, on behalf of EC) explained that the requirements were taken from ATCT and adapted accordingly for Type 6 requirements.

Regarding **ICE\_18** clarification on EC's main concerns was requested.

Ricardo Suarez (JRC, on behalf of EC) explained the main focus is on the temperature check and not necessarily on the duration of the soak before testing. He further expressed to be open for a discussion about the temperature tolerance.

→ no final conclusion yet

--- END Part LowT TF ---

2	<b>GTR#15 Amd#6 WD: SG EV square brackets topics (Low Temp → EV_LT_#)</b>
	<p><u>Square bracket topics in GTR#15 Amd#6 WD related to Low Temp</u></p> <p>All square bracket items to be discussed and concluded within the SG EV can be found in the following document:</p> <p><i>Working Document for GTR No. 15 Amendment 6 (document with track changes)</i>  <a href="#">ECE-TRANS-WP29-GRPE-2020-14e Track.docx</a></p> <p>An overview list of the remaining square bracket topics now being in this working document (WD) for GTR No. 15 Amendment 6 is given in the following document (EV related Low Temp topics are labelled “EV_LT_#”):</p> <p><i>Overview table of square bracket topics of GTR#15 Amd#6 WD</i>  The latest document <b>20xxyy_Status Square bracket topics_Amd#6 WD.xlsx</b> can be found in the UNECE wiki area: <a href="#">Optional annex Low T - Drafting</a></p> <p>→ SG EV members are asked to use the sheet named “Input from ...” of this overview table to prepare their input, comments and proposals for upcoming web-audio meetings.</p> <p><u>Discussion/conclusion on topics:</u></p> <p><b>EV_LT_38:</b></p> <p>In the SG EV web-audio on 2 April 2020, EC presented a compromise proposal for this square bracket topic “EV_LT_38” (battery charging) intending a harmonized approach for the PEV soak and charge procedure (<a href="#">20200401 SGEV type 6 soak and charge procedure EC.pptx</a>).</p> <p>Nick Ichikawa (co-TS, JASIC) stated that unfortunately, JPN is not able to accept this compromise proposal. He further presented an alternative proposal from JAMA and explained that it may lead to different values for certain types of vehicles depending on which proposal may be used (initial EC or JPN proposal).</p> <p>An overview of the different proposals is given in the following document prepared by JPN: <a href="#">200408 Battery charge operation Type6 JPN feedback for SG EV.xlsx</a></p> <p>Matthias Nägeli (co-TS, on behalf of ACEA EV) further presented an evaluation by ACEA EV of the initial EC and JPN proposals, as well as EC’s compromise proposal: <a href="#">200407 Battery charge operation Type6 ACEA feedback for SG EV.xlsx</a></p> <p>It was further mentioned by Matthias Nägeli that there is no preference from ACEA EV on the one or the other of the initial proposals. ACEA EV would be supportive of both initial proposals as both proposals have pro’s and con’s. ACEA EV is not supportive of EC’s compromise proposal as it adds further complexity.</p> <p>Nico Schütze (BMW, on behalf of ACEA EV) pointed out that two different soak and charge procedures need to be avoided.</p> <p>Bart Thedinga (EC) stated that it is clearly the goal to have one single approach. The problem lies within the delayed charging possibility. Nevertheless, determining UF’s for this application shall be avoided.</p> <p>→ no final conclusion yet</p>

<b>3</b>	<b>GTR#15 Amd#6 WD: PEV family concepts</b>
	<p><u>Family concept for PEV</u></p> <p>Family concept development for PEV is related to topic “EV_LT_2”, as well as topics “EV_LT_17” (PER calculation) and “EV_LT_18” (EC calculation), see overview table in document <b>20xxyy_Status Square bracket topics_Amd#6 WD.xlsx</b> to be found in the UNECE wiki area: <a href="#">Optional annex Low T - Drafting</a></p> <p>This agenda point was not discussed in this meeting, since no new input on a family concept for PEV was available at this time.</p> <p>Nevertheless, Iddo Riemersma (on behalf of EC) announced that the EC will provide a proposal soon.</p> <p>Furthermore, apart from discussing UBE (ratio) families, the vehicle selection in the context of family definitions also needs to be considered.</p> <p>→ no final conclusion yet</p>
<b>4</b>	<b>GTR#15 Amd#6 WD: SG EV square brackets topics (non Low Temp → A...D)</b>
	<p><u>Square bracket topics in GTR#15 Amd#6 WD not related to Low Temp</u></p> <p>All square bracket items to be discussed and concluded within the SG EV can be found in the following document:</p> <p><i>Working Document for GTR No. 15 Amendment 6 (document with track changes)</i>  <a href="#">ECE-TRANS-WP29-GRPE-2020-14e Track.docx</a></p> <p><i>Overview presentation of square bracket topics to be agreed upon (slides 2 to 5)</i>  <a href="#">200402 Overview square brackets SG EV GTR15Amd6_rev2.pdf</a></p> <p><i>Overview table of square bracket topics of GTR#15 Amd#6 WD (topics A to D)</i>  See overview table in document <b>20xxyy_Status Square bracket topics_Amd#6 WD.xlsx</b> to be found in the UNECE wiki area: <a href="#">Optional annex Low T - Drafting</a></p> <p><u>Discussion/conclusion on topics:</u></p> <p>(1) Update/amendment of the wording of nominal voltage (<i>slide 2, topic A</i>)</p> <p>Nick Ichikawa (co-TS, JASIC) stated that with the additional explanation about the 60V threshold by ACEA EV, JPN can now accept the proposal.</p> <p>Bart Thedinga (EC) also expressed support for this concept.</p> <p>→ <b>final conclusion:</b> wording from document <a href="#">200315 JPN input REESS voltage measurement.docx</a> shall be added to the WD (this includes the complete paragraph 3., not only 3.2. being in square brackets)</p> <p>(2) Proposal 1 in the context of the CO2 correction factor application of NOVC-HEVs (<i>generic approach; slide 3, topic B</i>)</p> <p>→ no final conclusion yet</p> <p>(3) Proposal 2 in the context of the CO2 correction factor application of OVC- and NOVC-HEVs (<i>K<sub>CO2</sub> correction factor family; slide 4, topic D</i>)</p>

	<p>ACEA EV provided an updated proposal based on the COP family concept. JPN and EC are supportive of the concept.</p> <p>→ no final conclusion yet</p> <p>(4) Expected number of cycles in CD mode for OVC-HEV (<i>slide 5, topic C</i>)</p> <p>Iddo Riemersma (on behalf of EC) mentioned that the problem is understood and the concept could be acceptable from the EC side. Further feedback will be provided soon.</p> <p>→ no final conclusion yet</p>
<b>5</b>	<b>Future Work of LowT TF and SG EV</b>
	<p><u>Future work items after June 2020</u></p> <p>During the upcoming WLTP IWG meeting (14 to 16 April 2020), preparation of an advice to GRPE on the future of the WLTP IWG is foreseen. The SG EV leading team together with the LowT TF chair prepared an input to this discussion (list of possible work items after June 2020).</p> <p>During the discussion an additional point was brought up: “Include other auxiliary devices (e.g. heating system for cabin comfort via seat/radiant panels, etc.)”. This item was included in the list after the meeting. This list will be provided to the WLTP IWG leading team: <a href="#">Future Work of LowT TF and SG EV.pptx</a></p>
<b>6</b>	<b>Next meetings (<a href="#">WLTP calendar</a>)</b>
	<p><u>30<sup>th</sup> WLTP IWG meeting (web-audio):</u></p> <p>14 to 16 April 2020, (each from 08:30 to 12:30 CEST)</p> <p>→ More WLTP SG EV web-audios will be scheduled for the period after the 30<sup>th</sup> WLTP IWG meeting. SG EV leading team will propose a schedule, please indicate the planned meetings of your organization as input, if available.</p>
<b>7</b>	<b>AOB</b>
	<p><u>Final update of WLTP Low Temp TF Status list</u></p> <p>A final update of the WLTP Low Temp TF Status list was performed and a link to the working document <a href="#">ECE-TRANS-WP29-GRPE-2020-14e Track.docx</a> was introduced for all of the remaining square bracket items accordingly. No further updates are foreseen for this overview list in the future, the document remains available for reference or decision tracking purposes.</p> <p><i>Overview of remaining square bracket items (status of topics)</i></p> <p>The latest document <i>WLTP_Low_Temp_TF_Status_list_v2020-xx-yy.xlsx</i> can be found in the UNECE wiki area: <a href="#">Optional annex Low T - Drafting</a></p>

## Supporting Information

	<b>GTR#15 Amd#6 WD: supporting information for concluding square bracket items</b>
	<p><i>ECE/TRANS/WP.29/GRPE/2020/14 - Proposal for Amendment 6 to global technical regulation No. 15 (document with track changes)</i>  <a href="#">ECE-TRANS-WP29-GRPE-2020-14e Track.docx</a></p> <p>Overview presentation of <b>square bracket topics</b> of GTR#15 Amd#6 WD (including links to supporting documents)  <a href="#">200408 Overview square brackets SG EV GTR15Amd6.pdf</a></p> <p>Overview table of square bracket topics of GTR#15 Amd#6 WD            The latest document <b>20xxyy_Status Square bracket topics_Amd#6 WD.xlsx</b> can be found in the UNECE wiki area: <a href="#">Optional annex Low T - Drafting</a></p> <p><i>EC's compromise proposal for square bracket topic "EV_LT_38" (battery charging)</i>  <a href="#">20200401 SGEV type 6 soak and charge procedure EC.pptx</a></p> <p><i>Excel version of EC's compromise proposal (battery charging)</i>  <a href="#">200402 Battery charge operation Type6 UN harmonised.xlsx</a></p> <p><i>JPN's input for square bracket topic "EV_LT_38" (battery charging)</i>  <a href="#">200408 Battery charge operation Type6 JPN feedback for SG EV.xlsx</a></p> <p><i>ACEA EV's input for square bracket topic "EV_LT_38" (battery charging)</i>  <a href="#">200407 Battery charge operation Type6 ACEA feedback for SG EV.xlsx</a></p> <p>Overview presentation of <b>Low Temp test procedure</b> for EVs - square bracket topics  <a href="#">200402 Square bracket topics Low Temp Test Procedure.pptx</a></p> <p>Overview presentation of <b>test sequence</b> options  <a href="#">200311 Possible Low Temp Test Sequences overview rev2.pptx</a></p> <p>Overview of <b>required parameters</b> during Type 6 testing – consolidated document (EC's and JPN's preliminary positions)  <a href="#">Overview required parameter during Type 6 EC JPN prel feedback consolidated.xlsx</a></p> <p><i>ACEA EV's input for Low Temp family concept for PEV</i>  <a href="#">PEV Low Temp Family idea ACEA EV update.pdf</a></p>