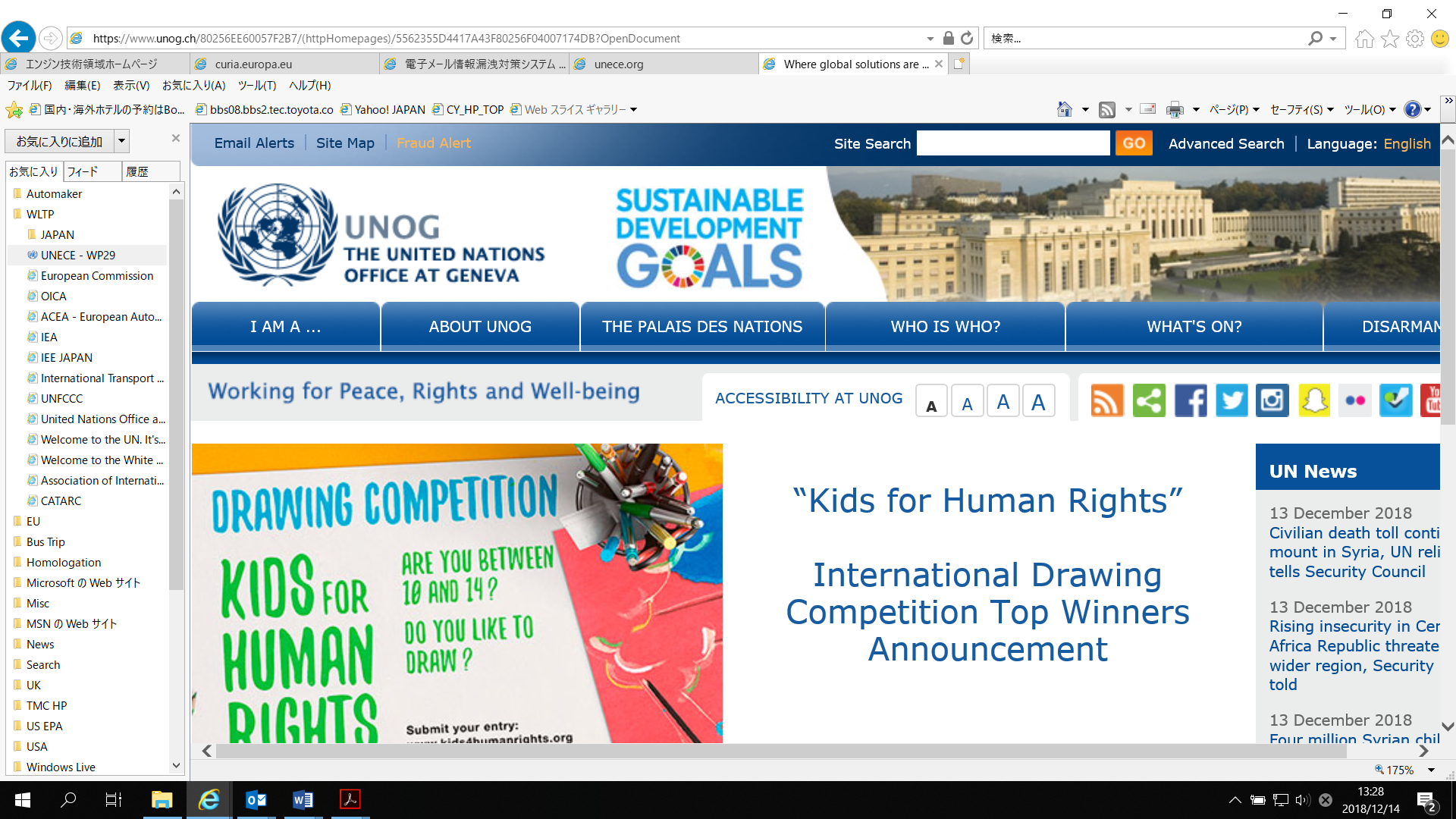
25th WLTP IWG WLTP-25-17e



**Minutes of the 25th WLTP IWG Meeting**

**Date and Time : 9:30 ~ on 7th January, 2019**

**~ 12:30 on 8th January, 2019**

**Venue : Palais des Nations, Room IX**

**< > indicates the purpose of each agenda**

**IS** : Information Sharing, **D** : Discussion, **RC** : Reach Consensus

Documents: <https://wiki.unece.org/display/trans/WLTP+25th+session>

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Day\_1 (7th Jan) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

1. **Welcome & Organization <IS>** (10:00-10:15)
   * Welcome by Chair
     + The Chair (R. Cuelenaere, TNO) opened the meeting and welcomed the participants. He expressed hope for a productive 2019 in the context of WLTP.
     + There are several new members of the WLTP IWG.
       - A replacement co-technical secretary, Anna Lindt (SMMT) from OICA, is now in place. She thanked the group for their welcome and looks forward to working with the group.
       - For the EC delegation, Alessandro Marotta is replaced by Bart Thedinga. The Chair expressed his thanks to A. Marotta for all of his work over the years and noted that he will stay part of the WLTP process in his new capacity within JRC.
       - Officially there is no longer a drafting co-ordinator as there is no additional funding available to continue the contract for Serge Dubuc. S. Dubuc is still participating in this meeting and will present the work done on Amendment #5 to GTR#15.
2. **Adoption of Minutes & Agenda <RC>** (10:15-10:45)
   * Minutes of 24th WLTP IWG meeting (WLTP-24-13e)
     + Minutes have been uploaded. The Chair, and the group, expressed thanks to M. Morimoto (Japan) for producing the last, and the previous three sets of minutes in the absence of an official co-secretary.
     + Actions:
       - The issue of definitions of coastdown method was resolved by a small group during a telephone conference. This resulted in a modification to the wording in the GTR, which eliminated the need to have very precise definitions within the GTR.

<Conclusion>

* + - * The Group agreed the minutes.

* + Proposed Agenda (WLTP-25-01e)
    - * The agenda was agreed and adopted by the IWG. The Chair thanked N. Ichikawa for preparing the agenda.

1. **Overall Progress and Schedule** (WLTP-25-02e) (10:45-11:15)

<Conclusion>

* Work plan and schedule agreed by the IWG.

<Discussion>

* + - IWG official mandate runs until the end of 2019; in practice, this means until the January 2020 session of GRPE.
    - The Chair noted the excellent job in 2018 progressing the items on the working programme. Pages 2 and 3 now mainly lists closed items; i.e. those that have been included in GTR#15 Amendment#5 and GTR#19 Amendment#2.
    - N. Ichikawa (Japan) gave a summary of the remaining items on the working programme. Phase 3 will begin at the end of the year and upon completion of Phase 2. The IWG will need to discuss what should be included in Phase 3. Some of the activities originally planned for Phase 3 have now been discussed under the Transposition TF. The priority is finishing Phase 2 during the course of 2019. Members of the IWG should let N. Ichikawa know if there are any concerns or comments.
    - The Chair thanked N. Ichikawa for preparing the document and noted that there are still some major challenges to completing the work before the end of the year given that the deadline for final working documents is October.
    - A. Marotta (EC) commented that for the purposes of this meeting, he is still, in part, representing EC. He thanked N. Ichikawa for the plan and noted that there is still a lot to do on the transposition, which is a top priority; other items, such as MAC, idle and crankcase gases, are a much lower priority. In relation to OBD there is a need to analyse the current OBD to see if it is fit for WLTP. Input will be required from industry on this. In Europe, from 2021, OBD needs to be based on WLTP.
    - On the lower priorities mentioned by A. Marotta, work has yet to be started on these items. Work will only begin if one of the Contracting Parties deems it necessary. It might be that these become items for Phase 3, or perhaps a subsequent phase.

1. **Working Documents for GTR#15 <IS & D & RC>** (11:15-12:00)

[ECE/TRANS/WP.29/GRPE/2019/2](http://www.unece.org/fileadmin/DAM/trans/doc/2019/wp29grpe/ECE-TRANS-WP29-GRPE-2019-02e.pdf)

* + Technical Report (WLTP-25-03e)

<Discussions>

* + - S. Dubuc (EC) presented the main items dealt with in Amendment#5 and highlighted in the Technical Report.
  + Associated Informal Documents (WLTP-25-04e #1)
    - S. Dubuc noted that there needs to be some additional items included in the informal document; e.g. coastdown etc.
  + GTR#15 Amendment#5 presentation (WLTP-25-04e)

<Conclusions>

* + - Informal document agreed by IWG and would be presented to GRPE plenary session

<Discussion>

* + - S. Dubuc presented the document above. Since the publication of Amendment#5 in October, it had been noticed that there are some additional minor amendments needed. Discussion on purposes, application and scope – the terms are not used consistently across the existing 20 GTRs despite UNECE TRANS/WP.29/883 giving clear guidelines. “Scope and application” might be better described as “Vehicles concerned”
    - W. Coleman (OICA) proposed that vehicles affected and the subject matter should be considered as two separate items. It is not important whether they are under one heading but they must be dealt with separately.
    - Predominant mode - in Tokyo, S. Dubuc made a note that the predominant mode may still be subject to further discussion during IWG-25. There is some confusion in the EU between “operating mode” and “driver selectable operating mode”. With the existing definition of predominant mode, it may not be driver selectable. There has been long discussion in the EU over this, and it would be good to address this during this meeting. In Amendment#5, it would be good to have consistency between the GTR and the existing EU legislation if possible.
    - The Chair made the point that this needs input from other Contracting Parties. Such a modification could not be done as a result of bilateral discussions between OICA and the drafting co-ordinator.
    - W. Coleman agreed. This needs input, particularly from other non-EU Contracting Parties and the discussion should be postponed until Day 2 to allow this to happen.
    - R. Gardner (EC) explained that this has been discussed during the transposition task force and he volunteered to prepare, with W. Coleman and S. Dubuc (and any other interested participants), a document giving the different definitions for discussion.
    - It was noted that Paragraph 4.2.2.1 currently refers to paragraph 3.2.3.2 which might be too broad. Should this be 3.2.3.2.2? The Chair requested OICA members specialising in rolling resistance to look into this and provide feedback by the end of the day.
    - Paragraph 4.3.1.4.2 in Annex 4 on statistical precision. Only the ‘n’ should be square-rooted and not the ‘’. There is uncertainty as to whether pj should be less than 0.03 or less than 0.030. EU Commission states that this request was justified and had been included in the EU WLTP 2nd Act. Agreement that equation is therefore OK and that the precision of 0.030 should be included.
    - There is a 2019 calendar is available for consultation on the website ( <https://wiki.unece.org/display/trans/WLTP+calendar> )
    - For the low temperature GTR, there is still an open point on whether this will be a stand-alone version of GTR#15 where all non-low temperature text is deleted or whether it will be a GTR which simply consists of a list of all differences to GTR#15.
    - The Chair encouraged the members of the group to read the technical report carefully that goes with Amendment#5.
    - Summary of documents:
      * ECE/TRANS/WP.29/GRPE/2019/2 with all of the changes for Amendment 5.
      * Technical report on the WLTP IWG website (WLTP-25-03e) containing details of some changes
      * Proposal for an informal document (WLTP-25-04e) containing changes proposed after the publication of Amendment#5.
      * Presentation of additional points, which need resolution as given by drafting co-ordinator (WLTP-25-04e\_#1). This may become an informal document for GRPE 78.
    - The Chair questioned how the items around coastdown need to be progressed. W. Coleman thought it should be possible to find a resolution to the issues in paragraph 4.3. Japan would like the opportunity of post-processing (the only thing available in on-board anemometry) and EU would prefer to use real-time processing (the only thing possible on off-board anemometry). The Chair tasked W. Coleman to come up with a proposal for discussion and conclusion on Day 2.
    - A. Marotta raised the point that a conclusion still needs to be reached on scope, purpose and application. The issue is currently under review by UNECE Secretariat. Clarification from S. Dubuc that “purpose” would still remain separately; only “scope” and “application” would be combined into “vehicles concerned”.
    - R. Gardner mentioned that he has been preparing UN-R WLTP and has now spotted some further corrections that are needed to Amendment#5.
    - M. Morimoto (Japan) noted that GTR#19 refers to GTR#15 so any modifications on scope, purpose and application also need to be taken into account in GTR#19.
    - The Chair asked whether there were any other informal documents as there was discussion at Tokyo that OICA might be working on one, but W. Coleman commented that any work needed was better done in conjunction with S. Dubuc and only if that proved unsuccessful would OICA propose a separate document.
    - S. Dubuc commented that there were two open items: one on the 3 tonne limit and one on peripheral devices.
    - W. Coleman responded on these:
      * 3 tonne limit: this is an OICA issue. A methodology has been proposed which differentiates vans not derived from passenger cars but which have passenger car variants. There is a definition existing in EU legislation, which uses the R point. W. Coleman would circulate the text for discussion on Day 2 as a third point for Amendment#5 to GTR#15.
      * Peripheral devices is more complicated but there is a document from the EC, which proposes changing the definition in MR2. There is still discussion about whether this is the correct way to differentiate hybrids, but it may work in the short-term. Some parties think it would be prudent to re-open the whole discussion on what defines a hybrid, but this would not be a short-term piece of work. Anything affecting the definitions in MR2 is also wider-reaching than GRPE potentially. OICA propose a task force to maintain the definitions in MR2, which W. Coleman would be willing to chair if the proposal was acceptable to GRPE.
      * R. Gardner suggested cross-referring to MR2 in GTR#15 for definitions. W. Coleman responded that while it makes it simpler in some ways, it is better to include all the definitions in GTR#15 for ease of use.

1. **Working Documents for GTR#19 <IS>** (12:00-12:30)

[ECE/TRANS/WP.29/GRPE/2019/4](http://www.unece.org/fileadmin/DAM/trans/doc/2019/wp29grpe/ECE-TRANS-WP29-GRPE-2019-04e.pdf)

* + Summary of Amendment (WLTP-25-05e)

<Conclusions>

* + - Agreed that the EVAP TF will now be closed having completed its work.

<Discussion>

* + - This document was already presented at WLTP-24 but will be shared again for those that could not attend that meeting.
    - There is an alternative equation for variable volume SHED. This equation is already in the US regulation and has been for some time
    - Carbon canister aging and the installation in the vehicle; the text was open to interpretation and had been modified to clarify.
    - W. Coleman sought confirmation that it is not permitted to fit the aged canister to the vehicle.
    - M. Morimoto confirmed that this was intentional.
    - D. Hannah (UK) queried that the GTR says “an” rather than “the” which would imply that one could not fit any aged canister to the vehicle. It was agreed that it should be changed to say “the” for clarity.
    - Calibration requirements were not included in previous versions of the GTR for some reason so now included in Amendment#2
    - Change / clarification of vehicles considered as same EVAP family. Definition of family based on materials and connection technique predominantly.
    - Technical report exists to provide more details (see WLTP-25-06)
    - Recommendation from M. Morimoto (TF Leader) that the EVAP TF should close following WLTP IWG 25.
    - The Chair believed that it was already closed following WLTP IWG 24 and offered his thanks to all of those involved in the TF.
    - In WLTP 24, agreement was reached on Amendment#2 and the TF was mandated to make the final changes needed.
  + Technical Report (WLTP-25-06e)
    - The Chair encouraged the group to read the technical report if they require more detail.
    - Once again, thanks to all those involved in the Task Force. Agreed that the TF will now be closed having completed its work.

1. **Gear Shift TF <D & RC>** (13:45-14:00)
   * How to identify and/or maintain the Gear shift Tool ? (WLTP-25-07e)

<Conclusion>

* Amendments to gear shift tool agreed by the IWG and already included in the informal document amending Amendment#5
* IWG agrees to re-open Gear Shift TF, with H. Steven (Consultant) as leader. The TF has one task which is to work on the proposal to add as an appendix of GTR#15 Annex 2, a programmatic description in one of the existing / modern reference programming languages

<Discussion>

* + - Gear Shift TF was closed at WLTP-24. This might need to be re-opened.
    - H. Steven, the TF leader, gave an update on the amendment#5 updates (see WLTP-25-07).
      * + A. Marotta questioned how one can have a constant speed for only 2s? H. Steven responded that this covers the transition between gears in rare cases.
        + Proposal for adding a program code to Annex 2 of GTR#15 with the motivation that the gear selection and shift point determination for vehicles equipped with manual transmissions as described in Annex 2 is complex, especially when it comes to paragraph 4. Round robin testing showed that the requirements defined in Annex 2 cannot always be met.
        + The proposal is to add as an appendix of GTR#15 Annex 2, a programmatic description in one of the existing / modern reference programming languages e.g. C#, Python or Visual Basic (to be discussed). This is already done in SAE J2951.
        + Recommendation: to re-establish the TF to work on this appendix with a mandate until the end of this year. H. Steven confirmed that he would be willing to remain as leader for this TF.
        + Austria support this proposal. It is imperative that all authorities calculate gear shift points in the same way. Question: is it possible to describe it in a robust mathematical way that can always give the same result without having to prescribe a programming language? H. Steven responded that this is not certain at this time, but it will be investigated as part of the work.
        + The Chair questioned whether this has been included in SAE previously, but this is not subject to the same rules as UNECE. Has it been checked that reference to a programming language / specific code can be included in the UNECE legislation? Answer from H. Steven was that a check had not yet been done.
        + This subject would be the only item of work for the Task Force. Terms of reference of TF would be maintenance of Annex 2 and providing the programming codes with the aim of including this into Amendment 6 of GTR#15

1. **Cylinder Gas <D & RC>** (14:00-14:15)
   * Proposal to set up the Task Force (WLTP-25-08e)

<Conclusion>

* No need to establish a Task Force at this time

<Discussion>

* Document not yet available.
* At WLTP-24, a small group was established to produce some proposals for Cylinder Gas specifications but was unable to reach any conclusions
* Request now to have a Task Force established to provide proposals for input into Amendment 6 (12 -18 months lead time).
* M. Vasarhelyi (AirLiquide) proposed as leader for this Task Force but is only present in the meeting as an observer so cannot take the floor at this time.
* Japan would like to understand the urgency for changing the existing specifications. Japan made a proposal at the last meeting, but this was dropped, so question the need? If there is no urgency, Japan would propose to establish the Task Force only at the point where it is needed; e.g. change of limits, etc, and not include this in Amendment#6. C. Astorga agrees with the Japan comment around the urgency but would propose to include it in the normal work program for Amendment#6 or later if that is more appropriate.
* There is no current support for having a specific group to develop further specifications on gases.
* The Chair asked whether this should be kept on the work programme. N. Ishikawa suggested to keep them on the list, but not as open issues.
* M. Vasarhelyi will send any reflections to the team if needed.

1. **Transposition TF Part#1 <D & RC>** 
   * Status report by **R. Gardner** (WLTP-25-09e) (14:15-15:00)

including the structure scheme of UNR-WLTP

<Conclusion>

* Revised work plan: obtain consensus on both the approach and the concept. Continue to develop both regulations with further discussion on Contracting Party options. There is also a proposal for a harmonized gasoline reference fuel. Meetings to be arranged. Draft regulations to be presented as Informal Documents at GRPE 79 in May 2019.

<Discussion>

* R. Gardner gave a summary of what has happened since WLTP-24 (see WLTP-25-09).
* Draft text was produced and this highlighted some of the associated issues. Inclusion / exclusion of EU specific procedures (e.g. ATCT) was also re-discussed. Different EU and Japan positions on durability led to the TF being temporarily being put on hold. Proposal to extend timeline by one GRPE session.
  + IWVTA meeting in November 2018 led to a mixture of support and objection for Approach 3; objections due to it not being seen to be in accord with 1958 agreement. Discussions held at IWVTA on whether there is a genuine need for Levels 1a and 1b; i.e. would anyone actually use them or were they just being created for the sake of it?
  + W.Coleman was of the understanding that you cannot have levels in a series of amendments – which rules out Approach 2 and 3. This would leave Approach 1 or the new approach introduced at the November Task Force meeting in Paris (see below).
  + The UN Secretariat (F. Guichard and F. Cuenot) gave their opinion. The preferred way of making regulations is having one level in one series of amendments. Emissions are more complex. Safety is split into one regulation for one system. Each way is possible but to varying levels of complexity and work needed. This has not been done previously so it is difficult to know the best approach in practice. One approach is to take out the difficult items and then you could leave the agreed items within the Regulation. It is possible to take EU legislation as the basis of the UN regulation even if it has not been developed within the UN. Consensus is the key part. The Secretariat stressed the urgency for the work. Normally, one would expect to have transposed a GTR within one year.
  + Revision 3 of the 1958 Agreement has provided more clarity. A Contracting Party can no longer demand additional requirements and this is logical in the context of IWVTA.
  + F. Guichard fully agreed that exclusion of items from the scope is not the best way forward.
  + Alternative concept (a 4th Approach) was discussed (see slide 4 of WLTP-25-09).
* 4th approach would include Level 1a in UNR 83 08 and not UNR WLTP.
  + Japan has concerns around this approach because it might reduce the motivation for Europe to go forward with a UNR WLTP. However, it is now clear that Level 2 is the priority of both Japan and Europe.
  + Potential benefits of the new concept are to maintain momentum as R83-08 would not come into effect until UNR WLTP came into effect.
  + The new concept would save 7 months from the introduction and update timelines over Approach 1
  + It could provide a potential solution where the EU does not require Level 1a and Japan does not require Level 1b, but another Contracting Party does. Contracting Parties will have different requirements and will introduce regulations at different times. They may require a WLTP approval but not recognize or support IWVTA. The unknown factor is what Level 2 looks like in relation to Level 1 (yet to be decided).
  + If there were not to be a Level 1b (to be decided), then UNR WLTP would be harmonised from the outset.
  + Japan confirmed at WLTP-25 that their position had not changed. Japan supported the extension to the timeline, but strongly objected to including WLTP into UNR83 for the reason that if regional regulations go to separate UN Regulations, the “harmonization” scheme would effectively collapse. Level 1a and 1b should be in UNR WLTP-00 with level 2 introduced at UNR WLTP-01 as previously agreed.
* W. Coleman raised some points for Japan to consider:
  + 1st point on harmonization – what is the difference between a European level being in R83 or R WLTP; other than it would definitely be excluded from IWVTA in R83?
  + Is it possible to have two regulations on the same subject? Previous advice indicated that it was a non-issue.
  + Japan is a Contracting Party to the ‘58 agreement and therefore has complete rights to discuss but is not obliged to accept the regulation. Contracting Parties can comment on any regulations under 58 agreement (not the case with 98 agreement)
  + Although Approach 4 was previously rejected, it should be re-discussed in more detail.
* The GRPE Chair reminded the IWG that it needs to provide a solution to GRPE on this matter. The discussion is becoming cyclical which may cause issues with WP29.
* Comment from EC that the discussion is useful in the context that the same type of work is beginning with RDE so any route found here will provide the solution in that case too. Contracting Parties have objective difference in their requirements. If in UNECE, there is a solution where the provisions that are adopted are not less stringent, then EC would support. It does not matter what the actual approach is. If things have evolved and a solution can be found that does not infringe the needs of any CP, it should be possible
* Australia currently mandates the requirements of R83.
  + One of the issues they have is that there are some OEMs who want to bring vehicles meeting WLTP without the need for further testing. In the current situation, they have to re-test to R83. Australia would therefore support any approach which could be found to recognize WLTP in R83.
  + Japan questioned whether there would be any issue if it was in UNR WLTP and referenced from R83?
  + Australia’s objective is to be able to recognise WLTP within the UNECE framework but it does not matter how this is achieved.
  + W. Coleman reminded that there will be countries who wish to stay state-of-the-art on emissions control but may not yet be prepared to move a new drive cycle for fuel consumption. Provision needs to be made for that situation.
* There is also still an issue with plug-in hybrids. 3-phase will likely give different results to a 4-phase. There is no certainty that if Level 2 is met, compliance with Level 1 is also met. PHEV testing can be 12 weeks and if it needs to be re-done, the leadtime would extend to 24 weeks. Need another brainstorming session of Transposition TF to try to get through the impasse since the Paris meeting.
  + How to handle the optional items\_#1 (WLTP-25-10e) (15:30-16:30)

<Discussion>

* + - Japan position on regional options in WLTP. Updated document from April 2018.
    - Some proposals included in the document are from the EU and have not yet been discussed in Japan.
    - For rated engine power and maximum speed, Japan uses TRIAS. City cycle from WLTP is currently under consideration
    - Vehicle classification is now being considered for Class 1 and 2 vehicles. If they accept 1 and 2, they must get approval from other national bodies so it takes time to form a position.
    - Downscaling and capped speed is still under discussion
    - Atmospheric temperature is still under discussion
    - Auxiliary devices: DRLs etc can be turned off in Japan so needs to be discussed
    - Regeneration factor also still under discussion
    - Averaging of criteria emissions still under discussion
    - ECDC already harmonized
    - Calculation formula and CoP under discussion
    - GTR19 Evaporative emissions is mostly harmonized but main differences include mutual recognition of the fuel
    - R. Gardner asked about dual axis dyno inclusion in the GTR and whether Japan have a new position on this topic. Previously the view was that there was no mandate, but now it is under consideration.
    - Japan confirmed that they are still against the ATCT in WLTP.
    - A. Marotta noted that if the ATCT is only applied to the 4-phase it would not impact on Japan; particularly when they know that the EU must have the ATCT correction. Without it, there can be no equivalence. Why is it not possible to have one solution for 4-phase and one for 3-phase?
    - N. Ichikawa noted that the UNR WLTP should have all of the harmonized parts and R83-08 could have ATCT in it.
    - W. Coleman noted that it would not make sense to put the ATCT CO2 correction in R83 as it would be better placed in R101. It is feasible that a Contracting Party wants WLTP but not ATCT but it is unlikely. Is it therefore worth the effort of including in R101, knowing that it is possible that those vehicles may never be sold in EU markets?
    - Criteria emissions are the same for VL and VH presumably given that the limits are same. In EU, different categories of vehicles can be in the same interpolation families. This could mean that vehicles in the same interpolation family may be subject to different criteria emission levels.
    - W. Coleman highlighted that there is still an issue with drive trace indices where some countries can achieve 0.8 while others cannot. Further work needs to be done to understand the issue and find a solution. Until that is done, this item should not be closed. It was noted that this should be an item for the IWG and not for the transposition task force.
    - There was also discussion on the wording in GTR 15, that the drive trace indices only apply to type approval tests. OICA members had always assumed that drive trace indices should apply to all tests including in-service conformity.
    - The Chair confirmed that the point will be kept open and asked the drafting co-ordinator whether it would be possible to track where this wording originated from.
    - R. Gardner drew attention to the urgency of finding a resolution to these issues to move the topic forward given pressure from WP29.
    - The Chair noted confirmation that work shall continue up until the end of 2019.

1. **OBD TF <D & RC>** (16:30-17:00)
   * Proposal on Timeline and schedule by **M. Morimoto** (WLTP-25-11e)

<Conclusion>

* + - OBD TF will start again in February 2019
    - Request to IWG members to notify M. Morimoto if they wish to be involved in the TF. She will remain in the lead of this TF.
    - The work of the OBD TF to be included in Phase 2c if GRPE allow 2c rather than Phase 3.

<Discussion>

* + - M. Morimoto gave an update. Original mandate to develop harmonized GTR by end of 2018. No Contracting Party options, only alternatives. Due to heavy work schedule for other WLTP IWG topics, it had been previously agreed to postpone the discussions until 2019. Discussion on how to progress now. Japan’s view is that there is no urgent requirement at this time so would like to propose a delay of discussions for another 12 months.
    - A. Marotta noted that this is in line with his expectation. There is a need however to check whether the provisions under NEDC are entirely applicable to WLTP in their current wording. Is there analysis already available to see if this is the case or not? If this is already a problem for Europe, it may become a problem for Japan in the future, but if the UN is not far enough advanced then the EC will deal with it at an EU level.
    - M. Morimoto confirmed that Japan have already discovered that there are some inconsistencies, particularly around OVC-HEV.
    - A. Marotta offered that there is now some OBD experience both at the EC and at JRC, so they would like to contribute to finding solutions to these problems.
    - W. Coleman confirmed that OICA will support any future work of OBD TF but it is difficult to organize cross-industry expert groups.
    - N. Bear (OICA) noted that there was concern over the scope of the OBD TF and whether there could be a potential unexpected impact on any development of post-Euro 6 so he supports the joint effort on this point.
    - A. Marotta noted that concerning post-Euro 6, discussions on re-assessment of the whole process could last over the next couple of years. The UN TF is just to make sure that the requirement to demonstrate OBD compliance under WLTC in 2021 is possible.
    - M. Morimoto will update the mailing list for the OBD TF and look to host the 1st 2019 meeting in February. She asked the Commission when they would like a document agreed at GRPE. A. Marotta / B. Thedinga will come back with a timeline by the next OBD TF meeting.

1. **CFD sub-working group <IS & D>** (17:00-17:30)
   * Status report by **M. Morimoto** (WLTP-25-12e)

<Conclusion>

* + - M. Morimoto will proceed with a workshop and progress the topic. She will send a request for interested parties.

<Discussion>

* + - CFD (Computational Fluid Dynamics) sub-working group under new issues TF
    - During December 2017 new issues TF meeting, the software vendor proposed revisions to the text related to CFD. The creation of a CFD expert working group was agreed.
    - Discussion points were mainly around certification methods
    - 1st meeting was held after 24th IWG meeting in September. Next meeting planned for February.
    - Current discussion is on 3.2.3.2.2.3.2(a). Certification is required.
    - Is it acceptable to define the common procedure to certify CFD software?
    - Does any CP / TAA / TS require a workshop on CFD?
    - C. Vallaude (France) questioned whether there was to be an initial certification that could be used afterwards by any OEM or that the software would be certified with the OEM? M. Morimoto noted that the first proposal was denied so likely go with certifying software with OEM.
    - Currently only Japan have had this discussion, with input at the last meeting from C. Vallaude. There is a need for other Contracting Parties’ involvement, otherwise the discussions will be meaningless.
    - The Chair questioned whether a workshop could be used to generate interest? M. Morimoto explained that part of the problem is that this is a new technology for most people and they do not yet appreciate the opportunities or the lack in certain aspects of the technology.
    - D. Hannah asked whether it is the CFD software being validated or the model with the CFD?
    - M. Morimoto noted that it is the software
    - D. Hannah noted that this is a big task for type approval authorities to be able to validate the software.
    - M. Morimoto confirmed that this maybe the case but it is asked for in GTR#15 and she believes it has already been done in one or two cases.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Day\_2 (8th Jan) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

1. **Low Temperature TF** **<IS & D>** (9:00-10:00)
   * Status report by **C. Astorga** (WLTP-25-13e)

<Conclusions>

* + - * The Chair expects the SG EV to provide a proposal on how the range, efficiency and energy consumption from EVs should be evaluated at -7oC by March 2019 (no need to include NOVC-HEV, which will be tested as ICE using Type 1 correction factor, unless SG EV has a different view)
      * Further discussion needed on consumer information on electric range, CO2 etc. in order to provide useful information, while minimising the test burden.
      * Low Temperature TF to continue its work programme as presented and within the agreed timeframe.

<Discussion>

* + - * C. Astorga (JRC) as TF leader gave an update.
      * If there are any comments on the timeline, please let the TF leader know.
      * GTR drafting and the report on the progress was an important part of the last TF meeting. There was also a discussion on the basis of the drafting document. There are several options that could be considered. The Chair clarified that the TF was requested by GRPE to produce a “standalone” GTR document and not an annex of GTR#15. It would be useful to revisit this discussion today to ensure that everyone is still in agreement that this should be the case. If this is not clear, the TF cannot progress the work on the GTR.
      * Progress in the Low Temperature TF during 2018:
        + A general procedure to measure emissions (Type I criteria pollutants and CO2) from pure ICE, NOVC-HEV and OVC-HEV was proposed by JRC and EC. However, there have been no developments for PEV or on how to address range, energy consumption and CO2emissions from OVC-HEV.
        + JAMA requested to know more about the purpose of the Low Temperature procedure
        + There was a TF questionnaire to Contracting Parties which Contracting Parties had replied to, but this was two years ago, so it is possible that this should be reviewed.
      * GTR drafting group of UNECE WLTP Low and Realistic Winter Temperature Task Force was set up in June 2018. (Thanks to the WLTP drafting co-ordinator, S. Dubuc, for his input into this work)
      * A short summary of the priorities was given – see table 1 in document WLTP-25-13.
      * A series of proposals were presented during the November session
        + One set from Switzerland – Name for UN GTR, Annex 1 (Cycles): Test cycle, Annex 6 (test Procedure): Road Load increase and specifics and Family Concept
        + One from JRC on the test procedure – preconditioning temperature, soaking time and temperature, test temperature and range of temperatures, together with consideration of these factors for pure ICE, NOVC-HEV and OVC-HEV. This proposal is available on the CIRCA website and was distributed to members of the TF.
      * Working documents available and ready for discussion inside Low Temperature TF
        + Swiss and JRC proposals expressed the need for 4 phases under WLTC but Japan expressed the preference for 3 phase. This might lead to a regional option.
        + A final document will be created once all of the comments on the proposals have been collated.
      * Another document was presented by Japan, which provided an overview of the current status of the work done. The list contains all of the issues appearing in the document created by the drafting coordinator and the document has already been revised following comments from Japan, Switzerland, TF Leader and JRC. The final version has been distributed to the TF. This will provide a good basis for the discussion during 2019.
      * The document could be in 2 parts: one for ICE (already well developed); another for EVs. SG EV should provide input into the list of issues for this part of the document.
      * There is already a significant amount of work done on ICE. SG EV will set up a meeting to ask for input into PEV evaluation.
      * List of working items will help to give a better overview, as previously requested, and tracking of progress and decision-making.
      * For auxiliary devices, CLEPA presented the current state of play on the selection of devices that are considered as auxiliary devices under the current definition. These are likely to be affected by the cold ambient temperature and can lead to impacts on vehicle range and emissions.
      * As a next step, CLEPA will provide an approach to evaluate the devices and their effect during soaking, preconditioning and running.
      * Summary slide – proposals have been developed which are ready for discussion. GTR drafting process underway. One document has been produced to enable tracking and monitoring of progress and outstanding issues. This will assist with maintaining the proposed timeframe.
      * 3rd part – discussion for EV process
      * 4th part – EV low temperature range and information provision to customers.
      * The Chair highlighted that Annex 8 should be reviewed by SG-EV
    - The Chair thanked C. Astorga for the update.
    - W. Coleman noted that CLEPA and OICA have been in discussion on the topics covered by this TF. They are in agreement on a concern around the granularity required for this. Certification could take up to 6 months for PHEVs. If this needs to be repeated for the -7oC, the certification burden could be crippling. OICA now have a coordinator for input into the LowTemp TF (Hans Mathiasson from Volvo). A further questionnaire to understand Contracting Parties needs would be welcome. It is clear that most Contracting Parties want CO2 values for ICE under Low Temperature. If the tests need to be done on VL and VH etc., this would not be sustainable. OICA are committed to providing meaningful input and helping find a solution.
    - The Chair asked the TF Chair whether the certification burden has been taken into account? The TF Chair explained that OICA were involved with the original questionnaire and if this needs to be revisited this would introduce a concern over maintaining the existing timeline. They asked the Contracting Parties present for their views. They also want to understand why what was done two years ago is deemed no longer valid? The approval burden has not been discussed in detail as it has not been mentioned previously.
    - W. Coleman asked about the level of granularity that Contracting Parties require for information on CO2 at low temperature. This is presumably more about consumer information rather than regulatory compliance. The simplest principle would be to evaluate the impact on CO2 or electric range if one drives with all of the auxiliaries switched on. Otherwise, it would be necessary to provide information on every combination of auxiliary operation at low temperatures. It would be better to inform the consumer that their electric range will reduce at low temperatures and / or with the operation of auxiliaries. A core assumption is needed on what should be provided.
    - P. Dilara (EC) noted that the requirement would be that a certain amount of range is maintained even at low temperature and with a certain number of auxiliaries switched on.
    - W. Coleman noted that in order to make a decision on how to progress, a decision is first needed on how this information is to be used. There would be no point in generating data that will never be used.
    - C. Astorga asked whether the question is only about EV range on electrified vehicles. See row 10 and 11 in the questionnaire if so. If this is to be challenged, then the future work for the group needs to be reconsidered.
    - S. Aasebo (Norway) noted that it is understood that this could be a large test burden but it is vital that the consumer knows how the EV range is affected by low temperature etc. Currently, the information provided with the vehicle is often not sufficient. If every country has to invest in infrastructure, range needs to be fully understood.
    - R. Suarez-Bertoa (JRC) noted that the group is aware that there will be some additional burden. Nothing has been decided yet but it is unlikely that VL and VH would be used. Main scope of the test was to evaluate emissions of pollutants, so would be based more on the RDE principles. Discussion on family definition so far has not been focused on repeating WLTP tests.
    - P. Ohlund (Sweden) noted that, for consumer information, it is important to know how the vehicle performs in winter. The consumer needs to know how to plan their trips and the country needs to plan their infrastructure. From a legal aspect, there is a need to ensure that the data provided is correct.
    - W. Coleman noted that the discussions have been only about electric range and CO2 of electrified vehicles. The discussions have covered all the aspects of criteria emissions, electric range and CO2 at an equal priority level within the group. The other thing that concerns industry is a potential increase in test burden just in terms of maintaining technology neutrality. For PEV, one would need to know the electric range. For technology neutrality, one would need to do the same for PHEV (not as vital); this would lead to a CO2 value for PHEV, which would then need to be replicated for ICE. There is a widespread variation in how manufacturers are currently presenting data to the consumer; some are indeed lacking at this stage but others are supplying detailed information. Industry hold customer workshops in order to understand what consumers require. There is now a draft GTR which does have tests done at VL and VH with interpolation. The draft is not agreed, but that is the current proposal. This means starting with the extreme workload and having to justify each reduction.
    - C. Astorga noted that there is no draft yet available for the Low Temperature GTR. The list of items mentioned before is what will be used to modify the text. Glad that some companies do produce effective information and maybe this would be a good basis for the GTR.
    - The Chair noted that OICA concerns cannot be addressed during this meeting. The WLTP IWG leadership team will discuss with Low Temperature TF leader to determine how this can be addressed in the April meeting in order to progress. It is not the first time the concern has been raised, so it does need to be dealt with. In the meantime, the IWG needs to agree whether the Low Temperature TF should continue its work according to the presentation given by C. Astorga at the start of the session.
    - P. Dilara stated that this was very important and should keep within the scheduled timeline.
    - Switzerland agreed with EC. It is important to reduce the contribution of Low Temperature to vehicle emissions. Would like to work with OICA to find ways to reduce the approval burden with the aim of achieving this.
    - Sweden and Japan also agree that the TF should continue as planned.
    - M. Naegeli (Technical Secretary of SG EV) thanked C. Astorga for the presentation. The overview covering all of the open items is a good way of moving forward and coordinating the efforts between the TF and the SG EV. It is good to have a step-by-step approach. SG EV will give feedback on the approach to the TF as soon as possible.
    - Chair asked if OICA supported discussing this issue at the next IWG in order to resolve it?
    - W. Coleman emphasized OICA’s desire to engage to make progress
    - Chair questioned whether there is the need for a consensus that the GTR should be developed as a stand-alone GTR?
    - C. Astorga noted that it was discussed several times, sometimes with the suggestion that it should be separate and sometimes as an Annex. Currently proceeding as a separate GTR.
    - W. Coleman, as IWVTA ambassador, noted that it should be further discussed taking into account the transposition into the 1958 agreement as it may impact the decision.
    - C. Astorga noted the benefit in doing so based on the difficulties of the transposition process for GTR#15 and the fact that it is unlikely that any GTR sitting below that will be much simpler.
    - The Chair noted that the TF leader has expressed a concern that there may be a capacity issue with drafting. It would be useful if interested parties could discuss this.
    - R. Gardner asked whether there had been a decision on whether to copy the relevant sections of GTR15 into the new GTR or to use cross-referencing from the new GTR to GTR15 (more simple)?
    - C. Astorga confirmed that it was still under discussion.

1. **Sub-Group EV <IS>** (10:00-11:00)
   * Low Temp/Definitions/Low Powered EVs/EVE activities/Drafting/Next actions and so on(WLTP-25-EV01~XXe)

<Conclusions>

* + - The SG EV should populate the Low Temperature Task Force table of items to be worked on for Electric Vehicles
    - Work on Low Powered EVs deemed not to be as high a priority at this time.

<Discussion>

* + - M. Naegeli (OICA and Technical Secretary) gave an update of the technical progress of the group:
      * Handling of low powered EVs is being covered by GTR#15
        + They are covered and it is clear which cycles and procedures those cars need to follow and which driving modes need to be selected for testing; however, there are still some issues which may emerge with new technologies appearing .
        + Concerning the tasks, if IWG supports discussion on this topic, SG EV can have more discussion and feedback during WLTP 26 on whether there is a need to amend GTR#15.
      * Low temperature test for electrified vehicles
        + Better coordination and clustering of work programmes thanks to Low Temperature TF tracking documents
        + Further discussion needed within SG EV. First topic is to provide the TF with feedback to the list provided to ensure that EVs are fully represented.
      * Definition of a hybrid
        + Amendment of the definition of “peripheral devices” covered in a working document for GRPE.
        + Discussions ongoing on need for further definitions of hybrid
      * Drafting issues
        + WLTP is in force, or coming into force, in many countries so there is increasing experience of conducting tests and issuing / obtaining approvals. Topics are being identified as being in need of amendment and / or clarification. Request to IWG members, that if points are discovered (clearly specify the issue, potential solution, justification) please send them to leadership team so that they can be added to the list of items to be discussed at future meetings. This will enable GTR#15 to be made more robust in the future
    - Chair thanked M. Naegeli and P. Ohlund for their update.
    - P. Dilara asked whether there is a schedule for output from the group on low temperature etc?
    - M. Naegeli noted that there is a need to provide a list of items, which need to be discussed. These items can then be clustered and prioritised and timeline / milestones agreed.
    - P. Dilara, as a Contracting Party, requested that the SG EV maintain the timeline to support the Low Temperature TF to achieve their objectives by the end of the year.
    - P. Ohlund confirmed that the SG EV will produce a roadmap to plan how this can be achieved.
    - C. Astorga wanted to remind WLTP IWG that the new document has already been produced on working items, but has left blank columns for EVs with the intention that the SG EV can complete those fields.
    - M. Naegeli noted that it is relatively complex to initially populate the list and further time will be needed to develop proposals around the items on the list.
    - C. Astorga noted that this may result in a delay to the timeline.
    - The Chair noted there is a clear need for the SG EV to input into the Low Temperature TF. Timelines have been clearly presented. Both leadership teams are present so should discuss in order to finalise what needs to be done.
    - C. Astorga noted that the timing has been presented and a clear separation of expertise has been put in place between the two groups. SG EV needs to come to the TF team with the proposed list details, which can then be discussed in terms of schedule and timeframe.
    - The Chair noted that the Low Temperature TF and SG EV need to collaborate to discuss how the SG EV can deliver the necessary outputs to the TF within the currently agreed timeline.
    - P. Ohlund noted that SG EV has the ambition to develop a procedure, which will reduce the test burden as much as possible. A roadmap will be developed.
    - M. Naegeli noted that, undoubtedly, there will be an increase in the test burden, but the ambition is to reduce that increase. Adding items to the list is one thing; having solutions to the items is more difficult. Clustering is also essential to ensure that SG EV is not spending time discussing items at their meetings that are also being discussed within the TF.
    - P. Dilara proposed having a short discussion to progress this after the IWG in order to have Contracting Party participation as well.
    - C. Astorga agreed and requested Contracting Parties to join the discussion.
    - The Chair asked whether there was a question for the IWG on low powered EVs
    - M. Naegeli noted that there may be a need to look more closely at low powered EVs as requested by some members in order to provide feedback at WLTP 26
    - P. Dilara noted that the work being done by the Low Temperature TF should be the priority. Anything else should be set as a lower priority.
    - No other Contracting Party views at this time so need to prioritise this work at SG EV.
    - The Chair thanked the SG-EV leading team for the update.

1. **Transposition TF Part#2 <IS & D & RC>** (11:30-12:45)
   * How to handle the optional items\_#2 (WLTP-25-10e)
     + This had been fully discussed on Day 1, so no need to revisit.
   * Presentation on fuel comparison result by **T. Haniu** (WLTP-25-14e)

<Discussion>

* + - Japan noted that the difference between fuels for PN is not clear and for other pollutants, it is not possible to say which fuel is worse so unable to reach a conclusion at this stage. However, would be keen to discuss further.
    - R. Gardner noted that mutual recognition of fuels is still under discussion so is there a timeline for further work?
    - Japan noted that results had only just been produced, so no timeline yet
    - India noted that mutual recognition of fuel would also be applied to GTR#15 but previously the concept was that the choice of fuel would be given to the Contracting Parties as it is a very complex issue.
    - R. Gardner noted that the purpose was to find the worst-case fuel for UNR WLTP Level 2. The options would remain in GTR15.
    - India confirmed that for level 2, that would be OK.
  + Updated status of COP TF by **I. Riemersma** (WLTP-25-15e)

<Conclusion>

* + - The CoP TF would continue its work and hopefully conclude within the currently agreed timeframe.
    - CoP data contains a level of confidentiality around compliance strategy etc., and therefore, it cannot be collated at an association level.

<Discussion>

* + - I. Riemersma (EC) gave a short update of the CoP TF
      * + Next meeting on 23 January 2019
        + Informal document planned for May 2019 GRPE session
        + Working document planned for January 2020 GRPE
    - A. Dijkhuizen (Netherlands) noted that CO2 is a very important topic and the political context must be taken into account. This is the background of the NL comments on the ToRs, which suggest maintaining approach in 2017/1151. More data is needed to be able to develop more robust technical content.
    - C. Vallaude noted that CoP is an extremely important subject. Regarding the request for data, there are two issues around quantity and confidentiality, so cannot guarantee that data can be supplied.
    - W. Coleman thanked to I. Riemersma for this work, which is difficult. Decision taken at ACEA that CoP data contains a level of confidentiality around compliance strategy etc., so that it cannot be collated at an association level. If the data can be supplied via TAAs or TSs, that would be of use. There are some ideas around how to anonymise the data, appreciating the importance of the data for this purpose.
    - The Chair asked whether the group proceed? Is there confidence that the timeline, based on the transposition work, can be achieved?
    - I. Riemersma noted that it will be challenging but the group will do their best.
    - The Chair requested that all parties work as collaboratively and collectively as possible in order to support the work of this TF.
    - R. Gardner noted that there is still work to be done on CoP and durability but also on the approach to be taken more generally.
  + Updated status of Durability TF by **A. Marotta** (WLTP-25-16e)

<Conclusion>

* + - The proposal from the EC was acceptable in the context of the work of the Transposition Task Force but that Japan needed more time to consider.

<Discussion>

* + - A. Marotta gave the background.
    - D. Hannah asked what will happen with some of the developments that were being discussed during the task force? There is generally no perceived issue with the current procedure so why do we need to change it? On the other hand, the procedure could be improved to guarantee performance over the whole life of the vehicle. Whole life testing was being discussed so will these discussions continue or not?
    - A. Marotta noted that this had not been decided yet. The current proposal is simply to address the short term issue. It does not necessarily influence the longer term plans. Japan was looking at the current procedure with the intention of adapting it to the Japanese conditions at Level 1b. If this happens, it should be possible to develop Level 2. There are outstanding issues; for example, why are there assigned DFs for gasoline, but not for diesel etc.? These will certainly be discussed at a European level, but not clear at this stage on the route through the UNECE forum.
    - Japan noted that this is the first time Japan have seen the proposal, so they cannot respond to it at this stage, so will need some time to review and provide feedback.
    - A. Marotta apologised for the late notice, but this proposal is now possible with the postponement of the transposition work
    - Sweden asked whether it is possible to say what this will mean for the SG EV regarding battery durability?
    - A. Marotta noted that durability in this context is only referring to pollutant emissions.
    - R. Gardner confirmed the proposal was in line with work of the Transposition TF.
  + Update on Mode Selection (carryover from Day 1) by S. Dubuc

<Conclusion>

* The Chair confirmed that the IWG adopts this proposal and this amendment should be included in the informal document for Thursday.

<Discussion>

* Change to the definition of predominant mode as currently specified in GTR#15. EU text closed the loopholes identified within the GTR.
* Japan has accepted the proposed modification to the definition.

* + 3 tonne classification in RLM family application (carried over from Day 1):

<Discussion>

* The proposed modification is in line with what is already included in UN R51. This covers Class II and III in the EU. Small LCVs are around 700mm, medium are at 850mm, large at 1000mm in terms of R point, so the proposal gives a good differentiation of vehicles.
* I. Riemersma confirmed that he has checked that the vast majority of SUVs are therefore excluded from this.
* C. Vallaude noted that the previous wording said “designed for”... the new wording does not reflect that. Is this is a problem?
* W. Coleman noted that this is a change but for the good reason of being able to fit vehicles in wind tunnels etc.
* C. Vallaude requested more time to check that the change is still acceptable. Is it really a problem if the previous wording was included again?
* W. Coleman noted that there had been different interpretations originally so hence the change.
* I. Riemersma noted that one potential solution to this concern is to add a sentence that the vehicle to be actually be tested is >3000kg. Another solution could be to make it that only extensions could be made for vehicles below 3 tonnes?
* W. Coleman noted that this needs further reflection and then wording should be developed accordingly
* A small group should discuss and proposal wording
* N. Ichikawa noted the need to see the final document ahead of GRPE to confirm.
  + Coastdown (carried over from Day 1):

<Discussion>

* There are two methods to determine wind speed as part of the coastdown procedure. One method uses on-board anemometry and one uses stationary anemometry.
* Typically in EU, the test is performed until the requirements are met. In Japan, data is gathered until the engineer thinks there is enough and then effectively the post-processing is carried out.
* W. Coleman has re-written 4.3 entirely to simplify and clarify.
* For onboard anemometry, there is a method for determination of the equation of motion. This would not be applicable to other methods of determining vehicle speed. This could be carried forward to Amendment 6.
* The Chair noted that the leading team is aware that this is a last minute proposal so it might be difficult to assess the proposal in this timeframe.
* Japan noted that while they appreciate the efforts, the new text changes the context dramatically, so would propose that only the open item 4.3.2.5 from the Tokyo meeting should be incorporated into the draft at this time. Proposed further discussion for Amendment 6.
* EC refrained from comment at this time.
* Chair questioned whether the discussions on this document as a whole should be postponed to the next IWG?
* Japan and EC agreed that they do.
* OICA noted that current Japan practice is not compliant with GTR#15 so this proposal was raised on behalf of Japanese manufacturers.
* Chair noted the conclusion to keep it on the agenda for next meetings.
* Chair requested that the driver break paragraph on 4.3.2.5 is also included in the informal.
* W. Coleman noted that if it was taken in isolation, it would need re-writing but that would not be a problem?
* EC and Japan agree
* Chair noted that the drafting co-ordinator will include in the informal document, taking care that the right references are included.
* Japan noted that the modification to 4.2.1.1.2. should be included to change “should” to “are recommended to”
* EC noted that regulations should include requirements and not guidance. There is a discussion ongoing as to whether 58 agreement allows guidance. Only 98 agreement seems to allow this.
* It was noted that “should” is not an obligation, whereas “shall” would be.

1. **Meeting schedule <IS>** (12:45-13:00)
   * **Schedule of upcoming meetings**<https://wiki.unece.org/display/trans/WLTP+calendar>
   * 26th WLTP IWG meeting (15th -18th of April, 2019 @ Zagreb, Croatia)
   * 27th WLTP IWG meeting (week of 20th May, 2019 @ Geneva)
   * 28th WLTP IWG meeting (September 2019 @TBD)
   * 29th WLTP IWG meeting (January 2020 @ Geneva)

* Presentation from Croatia on practicalities of Zagreb meeting:
  + Chair noted the leadership team would seek confirmation of participation.
  + Open to offers to host the September meeting.

1. **AoB <IS or D or RC>**

Others, if necessary

The Chair thanked the participants and contributors and closed the meeting

\*\*\*\* Meeting is facilitated by Leading Team and each TF Leaders \*\*\*\*

**Leading Team**

Rob Cuelenaere (Chair of WLTP IWG)

Daisuke Kawano (Vice Chair of WLTP IWG)

Anna Lindt (co-Secretariat of WLTP IWG)

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