

Comité Consultatif de Photométrie et radiométrie (CCPR)

WORKING GROUP ON CALIBRATION AND MEASUREMENT CAPABILITIES (WG-CMC)

16 September 2019, 13:30 – 17 September 2019, 12:30, BIPM, Paris, France

Minutes (draft v 2.1)

1. Opening of the meeting, introductions, apologies

Present:

Marek Smid, CMI, WG-CMC Chair
Maria Nadal, NIST, TG2 Chairperson and WG-SP
Catherine Cooksey, NIST, Invited Expert from SIM
Annette Koo, MSL, Invited Expert from APMP
Dong Hoon Lee, KRISS, WG-KC Chair
Stefan Kück, PTB, EURAMET TC-PR Chair
Anatolii Bescupschii, COOMET TC Chair
Boris Khlevnoy, VNIIOFI, Invited Expert from COOMET
John Lehman, NIST, Observer
Khalid Almakhlifi, SASO-NMCC, Observer
Sten Bergstrand, BIPM, JCRB Executive Secretary
Mohammed Al Fohaid, SASO-NMCC, GULFMET TCPR Chair
Ozcan Bakir, UME, Invited Expert from GULFMET
Peter Blattner, METAS, Invited Expert from EURAMET
Peter Manson, NMIA, Invited Expert (Routine calibrations as CMC evidence)
Haiyong Gan, NIM, APMP TCPR Chair
Reinhardt Sieberhagen, NMISA, AFRIMETS TCPR Chair
Teresa Goodman, NPL, TG3
Joele Viallon, BIPM, CCPR Executive Secretary
Maria Luisa Rastello, CCPR President

2. Appointment of the rapporteur and approval of the Agenda
(meeting Agenda in CCPR-WG-CMC/19-01)

Annette Koo appointed rapporteur
Agenda approved

3. Approval of the minutes of the last meeting
(meeting document CCPR-WG-CMC/19-02)

Minutes approved

4. Matters arising from the Report of WG CMC meeting 2018
(document CCPR-WG-CMC/19-03)

AP-2018-01 Complete
AP-2018-02 Complete – See S.Pickard's letter
AP-2018-03 Complete
AP-2018-04 Complete
AP-2018-05 Complete – See Draft CCPR-WG-CMC/19-11, Agenda Item 10-2019

AP-2018-06 Documents distributed, discussion to be held in this meeting
AP-2018-07 Complete
AP-2018-08 Complete, Document was opened for consultation with CCPR and is now published as a guideline G8
AP-2018-09 Complete
AP-2018-10 Complete, will be further discussed, Agenda Item 11-2019
AP-2018-11 Complete, see CCPR-WG-CMC/18-12
DP-2018-01 Complete
DP-2018-01 Complete, may need to set further deadlines
DP-2018-03 and -04 Implemented, will be further discussed Agenda Item 10-2019
DP-2018-05 Pending, will be further discussed, Agenda Item 09-2019
DP-2018-06 Implemented, will be further discussed, Agenda Item 14-2019

5. Documents presented to the meeting

CCPR-WG-CMC/19-01 CCPR WG-CMC 2019 Meeting Agenda
CCPR-WG-CMC/19-02 CCPR WG-CMC 2018 meeting report
CCPR-WG-CMC/19-03 Review of Action points from WG meeting 2018
CCPR-WG-CMC/19-04 Review of Decisions from WG meeting 2018
CCPR-WG-CMC/19-05 Letter of KCDB 2.0
CCPR-WG-CMC/19-08 Guidelines G8 for evaluation of CMC claims
CCPR-WG-CMC/19-09 TG2 Report
CCPR-WG-CMC/19-10 TG3 Rules for review of CMC claims
CCPR-WG-CMC/19-11 TG3 Core and linked CMCs
CCPR-WG-CMC/19-12 TG4 Report
CCPR-WG-CMC/19-13 METAS proposal for Fibre Optics CMC structure
CCPR-WG-CMC/19-14 APMP proposal for CMCs using routine calibration
CCPR-WG-CMC/19-15 EURAMET TC-PR comments on hybrid comparisons
CCPR-WG-CMC/19-16 APMP Report
CCPR-WG-CMC/19-17 COOMET Report
CCPR-WG-CMC/19-18 EURAMET Report
CCPR-WG-CMC/19-19 GULFMET Report
CCPR-WG-CMC/19-20 SIM Report
CCPR-WG-CMC/19-21 WG-CMC Strategic Planning Update
CCPR-WG-CMC/19-22 AFRIMET Report

6. & 7. Update from KCDB 2.0 (S Bergstrand)

- A new tool will integrate submission of CMC claims, intra- and inter-RMO review of CMC claims and publication of CMC and KC data.
- Validation of data transfer from old database will depend on individual NMIs.
- New CMC claims will not be published in the current database, only in the new one which is expected to be live by late October.
- User accounts will be approved by TC Chairs.
- During review, checking of the scope of designation for Designated Institutes should be checked before it comes to BIPM.

- Please take care that CMC submissions are accompanied by TCQS confirmation of QMS cover for CMC claims.

8. TG1 - Use of comparison results in assessment of CMC claims

This document has now been published as CCPR G8.

The task group can now be dissolved. WG thanks to Annette Koo, chair of TG1 for excellent work.

Decision:

DP-19-01 Since the TG1 objective was accomplished, WG CMC dissolves TG1 and expresses great appreciation to Annette Koo for her work in position of TG1 Chair

Marek Smid encouraged TC Chairs to make all reviewers and submitters aware of this guideline document.

9. TG2 – Update Excel PR CMC file

Maria Nadal reviewed the work carried out by TG2. The work is complete, the files are now consistent with each other and are fully updated.

Decision:

DP-2019-02 TG2 should continue its work, revising the Excel PR CMC file in response to the work of TG3.

Next steps are to select a new TG2 chair and to update files in response to the work of TG3. Thiago had some questions regarding the structure of the service categories which is largely historical.

Catherine Cooksey, NIST, indicated her willingness to take on the role of TG2 chairperson.

10. TG4 – Recommending a CMC structure for fibre optics

Stefan Kück presented the previous discussion around classification of services.

All APMP, COOMET, EURAMET, GULFMET and SIM experts have agreed and have put forward a proposal which was also presented.

The task group has been established, involving all relevant EURAMET, APMP and SIM experts.

New chairperson: Jacques Morel, is suggested by the Task group.

Marek Smid called for a WG vote and Jacques Morel was unanimously approved as chairperson of TG4.

Decision:

DP-2019-03 Jacques Morel was unanimously elected as chair for the TG4.

AP-2019-01 By the next CCPR WG-CMC meeting, TG4 should recommend a CMC structure for fibre optics. Deadline: April 2020

11. TG3 – Clarify and harmonize the CMC review process

- Teresa Goodman reviewed the first part of submitted document CCPR-WG-CMC/19-10 TG3 Rules for review of CMC claims.
- Peter Blattner asked whether the task group should bring a recommendation – Marek encouraged discussion within the WG-CMC.
- Stefan Kück highlighted that this work is more about ‘how far the light shines’ rather than ‘broader scope CMCs’ as directed by the JCRB. This should be mentioned in the document introduction.
- Peter Blattner asked if ‘risk based’ assessment is only by quantity or also by claim (size of uncertainty).
- Marek Smid said that any automatic ‘pass’ of a claim base on uncertainty level is not currently being considered.
- Stefan Kück emphasised that an uncertainty budget / model must accompany all claims for them to be assessed.
- Dong Hoon Lee noted that ‘supplementary’ comparisons should be excluded from core quantities and this was agreed by Teresa Goodman.
- Stefan Kück, Annette Koo noted that the third criteria of a core quantity may significantly broaden the number of quantities considered “core”. There is a need to allow a NMI to only have a ‘linked’ quantity, but may need in depth review if it is ‘primary’ for that NMI.
- Teresa Goodman summarised: may allow an NMI to only have a ‘linked’ quantity but if it is the source of traceability it still requires an in depth review.
- Peter Manson noted a JCRB resolution to allow NMIs to only review their primary quantity.
- Annette Koo questioned “Do we still need the distinction between core and linked quantities?”
- Stefan Kück noted that we still need a method of determining which quantities be supported by a higher level quantity.
- Dong Hoon Lee asked if the description of ‘core’ too prescriptive.
- Teresa Goodman answered that the detail is intended to avoid an increase in scrutiny, proliferation of comparisons in the future as has happened over last few years.
- Teresa Goodman summarised the principles for ‘core’ as key quantities + quantities considered ‘important’ to WG-CMC.
- Peter Manson emphasised that guidelines need to be clear on how the distinction has been made in order to avoid future creep. Principles should be ‘guiding principles’ rather than being prescriptive.
- Dong Hoon Lee suggested that we avoid the word ‘linked’ which has another meaning in the community (linking laboratory for comparison, etc.,...)
- Peter Blattner said we don’t need three NMIs / DIs to agree on a quantity being included.
- After some discussion Teresa Goodman agreed to remove this requirement from the requirements.
- Peter Blattner raised the issue that many fibre optic quantities, for example, may become ‘core’ quantities, this should be kept in mind.
- John Lehman raised a concern that the number of core quantities may grow rather than diminish from this process.
- Teresa Goodman will redraft the principles in response to the discussion and will emphasise the risk-based approach to review.

- Teresa showed the excel table and the case of luminous flux was discussed. The issue was raised that that LED measurements still require strict review (even more than tungsten) so must therefore should be 'core'?
- Marek Smid emphasised that classification as 'linked' does not mean no review, but limits the scope of review to the aspects of review which are unique and beyond to that quantity as compared to the associated 'core' quantity.
- A discussion followed with the conclusion that we must be careful not to classify too many quantities as 'core', the same issue will come up with materials (white, lambertian samples vs goniochromatic or textured etc) and many other quantities.
- There was a general agreement that
 - If an NMI submits a claim for a core quantity, it will be subject to full (intra- and inter-RMO) review
 - If an NMI already has a CMC for a core quantity and submits a claim for an associated linked quantity, only additional sources of uncertainty will be reviewed within the RMO.
 - If an NMI does not have a CMC for a core quantity and submits a claim for an associated linked quantity which is also the primary source of traceability/capability in that field, it will be subject to full (intra- and inter-ROM) review.
- Thiago Menegotto asked whether the quantity, not the service category (including the artefact) should be the core quantity.
- Teresa Goodman responded that the artefact needs to be included in the definition of core.
- Boris Khlevnoy asked why are both luminous intensity and illuminance responsivity are both core quantities.
- Teresa Goodman responded that the identification of core in the spreadsheet will be revised in light of today's discussion.
- Catherine Cooksey suggested a decision tree to evaluate whether full or light revision is required.

12. Hierarchy of P&R Services

Marek Smid proposed that the structure on the CMC database search function should be changed. The hierarchy should be moved up one level. The 'BRANCH' level in our 'Classification of Services' document does not contain useful information so this should now correspond to the P&R 'Field' and so on.

Marek Smid called for a vote on the proposal. All WG-CMC members accepted the proposal.

Decision:

DP-2019-04 That the 'BRANCH' level of the Classification of Services be removed, and the subsequent levels of classification be used in the CMC database search function.

AP-2019-02 Marek Smid to update the Classification of Services document and request BIPM to update the hierarchy of the CMC database search function.

Thiago Menegotto noted that the structure on the KCDB in its "comparison search parts" does not match either the P&R Classifications or the CMC Database.

AP-2019-03 Dong Hoon Lee to ask BIPM to update the structure in the KCDB search function
Deadline: when the Classification of Services document has been updated.

13. RMO TCPR reports on CMC activities since previous meeting, see documents submitted to meeting

- COOMET (Anatolii Bescupschii)
 - (document CCPR-WG-CMC/19-17)
- APMP (Haiyong Gan)
 - (document CCPR-WG-CMC/19-16)
- AFRIMETS (Reinhardt Sieberhagen)
 - (document CCPR-WG-CMC/19-22)
- EURAMET (Stefan Kück)
 - (document CCPR-WG-CMC/19-18)

Boris Khlevnoy expressed appreciation for CMC submissions as small batches by EURAMET and recommended other RMOs to do the same. It was accepted positively by all TC Chairs

- SIM (Thiago Menegotto)
 - (document CCPR-WG-CMC/19-19)
- GULFMET (Mohammad AlFohaid)
 - (document CCPR-WG-CMC/19-20)

14. TG2 – Selection of new chairperson

Marek proposed Catherine Cooksey as chairperson and called for a vote. All members of WG-CMC approved her appointment.

Decision:

DP-2019-05 Catherine Cooksey appointed as new chairperson of TG2.

15. RMO proposal for new CMC service category
(see document CCPR-WG-CMC/19-17)

Anatolii Bescupschii presented a case for including a service category for refractive index of liquids.

Peter Blattner expressed concern that P&R community may not have expertise for assessment of claims.

Peter Blattner noted that CCM (Working group on density and viscosity CCM.D-K6) is running a comparison (joined with CCPR) of refractive index in liquids.

Marek Smid emphasized that CCPR WG-CMC is in principle supportive of this addition.

Stefan Kück recalled a previous letter from the CCM agreeing for the transfer of refractive index to P&R service categories, but that further discussion would need to take place before the addition of liquid refractive index.

Maria Luisa Rastello noted that the service category in P&R is uniquely spectral

AP-2019-04 Anatolii Bescupschii to consult other RMOs as appropriate and to submit a formal proposal of proposed additional service category to Marek Smid and all TC Chairs (including details of format of the new line as well as evidence of adequate expertise for assessment of the CMC claims) Deadline: by 18 October 2019.

AP-2019-05 Marek Smid to contact the relevant person in CCM about their perspective on the addition of a P&R service category for refractive index of liquids. Deadline: 11/2019

16. Follow up of TG3 Discussion

Teresa reviewed the conclusion of previous day's discussion.

Stefan Kück asked for confirmation that any TC Chair reserves the right to review any CMC claim even if it is a linked quantity and Teresa Goodman confirmed this.

Peter Blattner again counter-proposed an uncertainty-limited risk assessment. If the uncertainty is large enough, no inter-RMO review is required.

Teresa Goodman considers that a full review should be retained for core and primary linked quantities independent of uncertainty level claimed.

Teresa then reviewed other aspects of the document.

Extension of wavelength range beyond comparison limits:

Boris Khlevnoy highlighted that in the case of spectral transmittance, extension of range to the UV is not justified on the basis of K6.

Teresa Goodman, Marek Smid and Stefan Kück emphasised that the reviewer still uses their expertise to assess the extension, and that uncertainty budgets are still required to support that extension. This document is intended to ensure that extensions beyond the range of a comparison are not automatically rejected rather than inferring that they are automatically accepted.

Use of comments column of CMC claims to cover specific cases:

Peter Blattner raised the issue that this means the BIPM logo can be used very broadly. Also that there is an inconsistency in how NMIs use this column versus adding a separate entry. Teresa Goodman commented that this is ok and that WG-CMC should be careful to consider how this column should be used, especially when determining new service categories. The question was raised as to how much review is required for extensions included as a comment. Whether, for example 'De lamp can also be measured' can be used when there already exists a separate service category for De lamps was asked. This is ok, so long as the wavelength range is constrained.

Other forms of evidence to support CMC claims:

Peter Blattner asked whether self-declaration should be included as well as third party accreditation.

Teresa Goodman confirmed that the intention of 2.2.1 is a Third party technical assessment Peter Manson reminded us of JCRB resolution and MRA review to open access to CMC claims beyond comparison evidence. This part of the document responds to these.

AP-2019-06 Teresa Goodman will re-draft the Rules for review of CMC claims document in response to the discussions and will forward this by 20 November 2019 to the CCPR WG-CMC TG1 members for further review inviting comments. She will consider the use of decision tree to capture the consequences of the document.

Decision:

DP-2019-06 The general principles of Section 2.1 Evidence from Comparisons, found in the document CCPR-WG-CMC/19-10 TG3 Rules for review of CMC claims, are accepted subject to some minor clarifications.

DP- 2019-07 Further editing of the excel document (CCPR-WG-CMC/19-11 TG3 Core and linked CMCs) will not be carried out until the Rules for Review of CMC Claims document is completed. However, comments from WG-CMC members are welcomed by Teresa Goodman.

17. APMP Draft – The use of routine calibration for CMC claims

Explanation and clarification of this process will be done when the review of CCPR-WG-CMC/19-10 TG3 Rules for review of CMC claims is complete.

18. Other Business

Marek Smid suggested a workshop regarding the use of the new CMC submission and publication process. He will consult with the community as to whether or when this will be appropriate.

AP-2019-07 Marek Smid to consult possibility of holding CMC submitting/review workshop in line with NEWRAD 2020. Deadline: when the review of CCPR-WG-CMC/19-10 TG3 Rules for review of CMC claims and CCPR-WG-CMC/19-11 is complete and approved by WG CMC.

AP-2019-08 from WG KC 2019 - Add the point of agenda for WGCMC meeting - to discuss the method on how RMO TCCs report on consistency checks of CMCs after completed comparisons

19. Next meeting

As was discussed on the board of WG-SP on 17 September, next WGs meeting will take place in Boulder, Colorado, US.

Currently available dates are Thursday + Friday 18-19. June or Sunday + Monday 21-22 June .

20. Meeting Closed