

Comité Consultatif de Photométrie et Radiométrie (CCPR)
WORKING GROUP ON CALIBRATION AND MEASUREMENT CAPABILITIES (WG-CMC)

9 December 2020, 12:00 –14:00 CET, online WebEx

Minutes (Draft 2.1)

1. Opening of the meeting, introductions, apologies.

The following persons were present at this meeting:

- Marek Smid, CMI (WG-CMC Chair)
- Catherine Cooksey, NIST (WG-CMC TG2 Chair)
- Teresa Goodman, NPL (WG-CMC TG3 Chair)
- Jacques Morel, LNE (WG-CMC TG4 Chair)
- Maria Luisa Rastello, INRIM (CCPR President)
- Maria Nadal, NIST (WG-SP Chair)
- Dong-Hoon Lee, KRISS (WG-KC Chair)
- Joële Viallon, BIPM (CCPR Executive Secretary)
- Rheinhardt Sieberhagen, NMISA (AFRIMETS TC Chair)
- Annette Koo, MSL (APMP TC Chair Elect, APMP Invited Expert)
- Anatolii Bescupschii, INM-MD (COOMET TC Chair)
- Stefan Kück, PTB (EURAMET TC Chair)
- Thiago Menegotto, INMETRO (SIM TC Chair)
- Boris Khlevnoy, VNIIOFI (COOMET Invited Expert)
- Peter Blattner, METAS (EURAMET Invited Expert)
- John Lehman, NIST (SIM Invited Expert)
- Sten Bergstrand, BIPM (JCRB Executive Secretary)
- Susanne Picard, BIPM (BIPM KCDB Coordinator)

2. Appointment of the rapporteur and approval of the Agenda ([CCPR-WG-CMC/20-01](#))

The agenda was approved with no requested changes. Catherine Cooksey was appointed rapporteur.

3. Approval of the minutes of the last meeting ([CCPR-WG-CMC/20-02](#))

Marek Smid thanked Annette Koo for preparing the minutes from the last CCPR WG-CMC meeting and thanked those in the Working Group who provided comments and feedback. The minutes were approved with no additional changes.

4. Matters arising from the Report of WG CMC meeting 2019

4.1 Review of the decisions

The following decision points from the last CCPR WG-CMC meeting were reviewed.

- DP-2019-01: 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.
Status: Completed.
- DP-2019-02: TG2 should continue its work, revising the Excel PR CMC file in response to the work of TG3.
Status: Completed.
- DP-2019-03: Jacques Morel was unanimously elected as chair for the TG4.

Status: Completed.

- 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.
Status: Marek Smid noted that the status of this decision point will be discussed during Agenda Item 15.
- DP-2019-05: Catherine Cooksey appointed as new chairperson of TG2.
Status: Completed.
- 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.
Status: Completed.
- 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.
Status: Completed.

4.2 Review of the action points

The following action points from the last CCPR WG-CMC meeting were reviewed.

- AP-2019-01: By the next CCPR WG-CMC meeting, TG4 should recommend a CMC structure for fibre optics. Deadline: April 2020.
Status: Completed. This will be discussed during Agenda Item 8.
- 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.
Status: This action point will be discussed during Agenda Item 15.
- AP-2019-03: Dong-Hoon Lee to ask BIPM to update the structure in the KCDB search function in Section 'comparisons'. Deadline: when the Classification of Services document has been updated.
Status: This action point will be discussed during Agenda Item 15.
- 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.
Status: This action point will be discussed during Agenda Item 15.
- 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.
Status: This action point will be discussed during Agenda Item 15.
- 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 TG3 members for further review inviting comments. She will consider the use of decision tree to capture the consequences of the document.
Status: Completed. This will be discussed during Agenda Item 6
- 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.
Status: NEWRAD 2020 was cancelled due to the COVID-19 pandemic, and the workshop for submitting and reviewing CMCs was not held. Marek Smid acknowledged John Lehman and Maria Nadal for their excellent preparations prior to the cancellation.

- [AP-2019-08](#): From WG KC 2019 - Add the point of agenda for WG-CMC meeting to discuss the method on how RMO TCCs report on consistency checks of CMCs after completed comparisons.
Status: Completed. This topic will be discussed during Agenda Item 12.

5. Documents presented to the meeting

The following documents were presented at this meeting.

- CCPR-WG-CMC/20-1: Agenda of the 2020 virtual meeting
- CCPR-WG-CMC/20-2: CMC WG-CMC 2019 meeting report
- CCPR-WG-CMC/20-3: Review of Action points WG meeting 2019
- CCPR-WG-CMC/20-4: Review of Decisions from WG meeting 2019
- CCPR-WG-CMC/20-5: Message about CMCs hierarchy in the KCDB
- CCPR-WG-CMC/20-6: Letter from TG3 to WG-CMC November 2020
- CCPR-WG-CMC/20-6a: Presentation on TG3 work
- CCPR-WG-CMC/20-7: CCPR rules for CMC reviews
- CCPR-WG-CMC/20-8: Classification of CCPR CMCs
- CCPR-WG-CMC/20-9: TG2 Updates 2020 for CCPR WG CMC
- CCPR-WG-CMC/20-10: TG4 report to WG-CMC
- CCPR-WG-CMC/20-11: Information from KCDB Office 2020
- CCPR-WG-CMC/20-12: Presentation on new KCDB API
- CCPR-WG-CMC/20-13: News from JCRB for WG CMC 2020
- CCPR-WG-CMC/20-14: COOMET report to WG-CMC
- CCPR-WG-CMC/20-15: APMP report to WG-CMC
- CCPR-WG-CMC/20-17: EURAMET report WG-CMC
- CCPR-WG-CMC/20-18: SIM report to WG-CMC
- CCPR-WG-CMC/20-21: Structure of PR comparison in KCDB

6. TG3 - Clarify and harmonize the CMC review process

6.1 TG3 Chair – Presentation of guidelines

Teresa Goodman reported that she emailed a letter ([CCPR-WG-CMC/20-6](#)), a pdf of the CCPR rules for CMC reviews ([CCPR-WG-CMC/20-7](#)), and a spreadsheet of the Classification of CCPR CMCs ([CCPR-WG-CMC/20-8](#)) to the Working Group in November. The letter asked the Working Group to review the rules pdf and classification spreadsheet and submit feedback prior to this meeting.

This presentation ([CCPR-WG-CMC/20-6a](#)) will provide a brief overview of the objectives and framework of the rules and classifications. The primary objectives in developing rules for CMC reviews were to:

- a) Clarify the process so that everyone knows what evidence is needed, how the evidence is treated, and how the CMC submission is reviewed.
- b) Ensure that all CMC claims are treated fairly and consistently.
- c) Minimize the effort needed to review CMCs, balancing the quality of the review with the time required to complete it.
- d) Provide guidelines for accepting or rejecting new CMCs.
- e) Avoid barriers for acceptance of CMCs for emerging NMI's.
- f) Ensure that the review process complies with JCRB guidance for a risk-based approach, e.g. how far the light shines with regard to key comparisons.
- g) And, clarify the role of comparisons (whether they are essential or not) in the review process of CMCs.

Teresa explained that the CMC rules pdf describes the basic rules of a CMC review. It adopts a risk-based approach in which each CMC submission is reviewed according to whether it is

determined to be “high risk” or “low risk”. High risk reviews are subject to both intra- and inter-RMO review, while low risk reviews are only conducted within the RMO. A high-risk review is always conducted for CMC quantities that are classified as “key” or “core”. CMC quantities that are classified as “secondary” are generally considered low risk. However, certain circumstances may warrant a high-risk review for a secondary quantity.

The CMC rules pdf defines the classifications of key, core, and secondary. They also define the types of evidence needed for each type of review and considers guidance for reviewing CMCs in which the parameters extend beyond those of the relevant comparison (e.g., additional wavelengths, different conditions, different artefacts). There are flowcharts and a checklist for low-risk quantities to help clarify the process and facilitate application of the rules. The classification spreadsheet provides an initial classification of each CMC quantity as key, core, or secondary based on the definitions in the rules. The CMC rules pdf also clarify the case when a CMC claim cannot be submitted.

6.2 WG CMC discussion

Marek Smid asked each of the TC Chairs to share their thoughts on the rules.

Stefan Kück replied that, as a member of the TG3, he was involved in development of the CMC rules pdf, so he accepts the new document. He also consulted with some of his colleagues at PTB who agreed with the rules.

Annette Koo shared that she appreciated the explicit acceptance of hybrid comparisons, which will allow new and emerging NMIs to make claims more quickly and easily.

Rheinhardt Sieberhagen expressed his gratefulness for the inclusion of secondary quantities and hybrid comparisons.

Anatolii Bescupschii reported that it is now clear what the review process involves and how it is to be conducted. However, he is curious to know more about the process of the hybrid comparisons. Marek noted that hybrid comparison method has been approved by the JCRB. Joële Viallon added that the link to the guidelines for hybrid comparisons is provided in Appendix of the rules.

Thiago Menegotto agrees with his TC Chair colleagues that the rules are good, but he has several questions, which he submitted previously to Teresa Goodman.

Teresa reviewed Thiago’s questions for the Working Group. First, Thiago noted that the rules provide examples of secondary quantities, some of which are classified as core in the classification spreadsheet. Teresa responded that these discrepancies need to be resolved so that the examples of secondary quantities are consistent with the proposed classification. She suggested that this not be discussed presently, but that TG3 members discuss appropriate examples later.

Second, the CMC rules pdf and flowchart describe the circumstances under which a secondary quantity requires low-risk (intra-RMO only) review or high-risk (both intra- and inter-RMO) review. Thiago noted that it is not clear in the CMC rules pdf that secondary quantities that are not linked to any other key, core, or secondary quantity must always be considered high risk (refer Section 3 in CMC rules pdf). This case is clear in the flowchart. Teresa suggests a minor revision to the text to explicitly state this case as high risk.

Third, the CMC rules pdf states that key and core quantities are always considered high risk. However, it is not always true because reviews of key and core quantities for CMC entries that extend the wavelength range, measurement conditions, or relevant artefacts may be considered low risk. Teresa suggests that a revision to the text will make this clearer.

Fourth, Thiago had a comment related to the case where the uncertainty for an extension is less than the uncertainty for comparison range. Teresa thinks his comment is straightforward and easily addressed by a minor revision in the text.

Fifth, Thiago noted that the Low-Risk Checklist in Appendix B does not include a question

regarding low-risk reviews for CMC entries of key and core quantities that have other artefacts. Teresa said she would add this case to the table.

Sixth, Thiago also noted a typo in the checklist. Teresa will correct it.

Seventh, in the flowchart, Thiago observed that there could be cases in which broader wavelength range, different conditions, other artefacts at same time. He wonders if the flowchart should depict the various possible combinations of these options. Teresa remarked that the endpoint of the decisions is the same regardless of the combination. Marek suggested adding a footnote to describe that. Teresa said she will review options with TG3.

Teresa remarked that everyone seems to be happy with the principles detailed in the CMC rules pdf. She acknowledged that addressing Thiago's questions will require small editorial changes. Marek asked the Working Group for their approval of the CMC rules pdf.

DP-2020-01: [The Working Group approved the TG3's pdf of the CCPR rules for CMC reviews, pending editorial changes.](#)

AP-2020-01: [TG3 Chair \(with help of the TG3 members as requested\) will implement the editorial changes in response to Thiago Menegotto's comments and submit the final version to the Working Group as well as Joële Viallon for submission to CCPR. Deadline: End of December.](#)

Annette Koo asked what happens after the final version has been prepared and approved. Joële confirmed that it will be sent to the CCPR for review and comments. The expectation is that if the WG-CMC has approved it, that there will not be too many comments. Maria Luisa Rastello agreed that CCPR could review it by the beginning of March.

Joële confirmed with Marek that the CMC rules pdf can be made available publicly on the CCPR's webpage for [Guidance Documents](#) once all approvals are received. Marek requested that the hybrid comparison guidelines also be added to this webpage. Joële noted that this is not a CCPR publication so it may not be appropriate to include it here. We can include a link to the document on the webpage but then it will give it an exceptional visibility compared to other useful documents (JCRB guidelines for example). Joële would rather stick to a link within the TG3 Guidelines document itself.

7. TG2 - Update Excel PR CMC file

7.1 TG2 Chair – Summary - current version of Core and Secondary excel file

Catherine Cooksey provided a brief presentation ([CCPR-WG-CMC/20-9](#)) summarizing the responsibilities of TG2, namely the files: "[Classification of Services in PR](#)" and the Spreadsheet "[Supporting Evidence for CMCs in PR](#)". There was a decision point (DP-2019-04) and an action point (AP-2019-02) from the 2019 WG-CMC meeting related to "Classification of services in PR". As noted above, the outcome of these points will be discussed in Agenda Item 15. There was also a decision point (DP-2019-02) related to "[Supporting Evidence for CMCs in PR](#)". As TG3 reported, an initial classification of each CMC quantity was completed. Future work for TG2 involves making revisions in "[Classification of Services in PR](#)" file and [Supporting Evidence for CMCs in PR](#)" spreadsheet based on the final version of TG3's CMC rules pdf.

7.2 WG CMC discussion

First, Catherine and Marek asked for a call of members for this task group. The current list of members includes Peter Manson, who is now retired. RMOs are generally well represented among the list of members. Peter Blattner suggested that group composition should include technical competence needed for addressing TG2's tasks, especially in the area of fibre optics. Stefan added that it would be good to have an expert for each of the branches. Catherine suggested that TG2 begin its work with its current members. As work requires input from experts, we can then reach out to those with the appropriate expertise.

Maria suggested we could use the same approach we follow for the CMC reviews, where we look to RMO technical experts for feedback.

DP-2019-04 and AP-2019-02: Susanne explained that the decision, and subsequent request, to remove the Branch level from the CMC classification scheme is not very practical from the perspective of the KCDBv2.0. The 4-level structure is used throughout the KCDB for all CMC entries. Reclassification of services within the 4-level structure is a more practical approach. Susanne, however, strongly recommended that the Working Group consult with the KCBD office when considering changes to the CMC classification scheme.

Status: Abandoned.

8. TG4 - Recommending a CMC structure for fibre optics

8.1 TG4 Chair –TG4 Recommendation for CMC structure for fibre optics

Jacques Morel provided a brief presentation ([CCPR-WG-CMC/20-10](#)) on the recent activities of TG4, which has been tasked with recommending a new classification structure for the CMC service categories for fibre optics. The main issue with the current structure for fibre optics is that it is not consistent with the general structure for Photometry and Radiometry. Namely, the 3rd level sub-division is typically an artefact or an instrument. However, for fibre optics it can also be a sub-quantity.

TG4 investigated 2 different options for re-structuring. First, the rules for the classification structure could be amended such that: a. Field, a.b Measure quantity, a.b.c. Sub-quantity, instrument, or artifact. (An example was provided in the presentation slides.) The advantage is that it does not require significant changes to the classification structure. However, the drawback is that it does not take advantage of the full potential of the 4-levels of the structure because the branch and service level classification is the same, e.g. Fibre Optics. Additionally, there may be difficulties explaining this structure to KCDB end-users who are trying to find CMCs.

The second option TG4 considered is to change the structure at the service level, such that there would be 4 new fibre optics categories. For example, they could be: 7. Fibre optics detectors, 8. Fibre sources & wavelength standards, 9. Waveguides and passive components, and 10. Measuring instruments. The advantage for this option is that it allows flexibility and more oriented for the end-user. The drawback is that new services need to be defined and an update of whole classification of services in PR may be necessary.

There was no clear consensus among TG4. Consequently, Jacques suggests a 2-step solution. In the short-term, he recommends implementation of the first option, so that the classification of service categories can be finalized within TG4 (only fine-tuning) by May 2021. In the long-term, he recommends that the Working Group consider open discussion of re-structuring the classification of services for PR.

8.2 WG CMC discussion

Susanne Picard noted that these recommendations are relatively easy to implement, even the second option because it does not involve changing the 4-level structure of the database, as was suggested above. Instead, it is much more like editorial changes. She seconded that this could be an opportunity to discuss additional reclassification of services within PR.

Peter Blattner agrees that the short-term option requires minimal changes. He is intrigued by the possibility of additional reclassification of services within PR because he sees that there will be more complex measurement solutions in future, e.g. those related to spectroradiometers.

Susanne asked Jacques to elaborate on a comment he made during the presentation about the difficulty of some end-users with KCDB. Jacques said that when he serves as an auditor,

he sometimes gets questions from the companies or laboratories about how to use the KCDB to find the CMCs. Because of inconsistencies in the classification of services, this can be difficult to explain. Susanne asked Jacques to send her some more information and examples on this topic so she can investigate.

AP-2020-02: TG4 will complete the classification of service categories for fibre optics according to its recommendation (first option). Deadline: May 2021.

AP-2020-03: Lingered CMCs for fibre optics (change for the CMC SC structure for chromatic dispersion submitted by EURAMET, CCPR-WG-CMC/18-13) will be submitted once the classification in AP-2020-02 has been finalized.

9. KCDB v2.0 matters

9.1 Update on KCDB v2

Susanne Picard provided a short presentation ([CCPR-WG-CMC/20-11](#)) about a new software tool from the BIPM's KCDB office. It is an Application Programming Interface (API). She used the analogy of a waiter, who takes the customer's order, reports it to the kitchen where the order is filled, and then returns the order to the customer. The API is like the waiter. Using the API, one can query the KCDB and then get back machine-readable data. This contrasts with the current process in which a user can manually search the database and then download an Excel spreadsheet of the results for further processing by the user.

The current API only covers CMCs. It can be integrated into any website, it enables investigation of statistics, and can be utilized in developing digital calibration certificates. Susanne thanked Peter Blattner and Federico Grasso (METAS) for testing this API.

Susanne also mentioned that the KCDB office plans to offer training on the new KCDB as part of their 2021 Capacity Building and Knowledge Transfer (CBKT) training series in 2021. There will be online training on comparison (3 Feb. 2021), question & answer session for writer and reviewers of CMCs (29 Mar. 2021), and training for TC Chairs (1 Jun. 2021).

No new CMCs have been published in new KCDB platform. All batches in PR that were reviewed in the old system, have been published in the new system.

9.2 KCDB – API

Peter Blattner reported that he and Frederico Grasso demonstrated use of the API with LabVIEW ([CCPR-WG-CMC/20-12](#)), although any programming language utilize the API. His program pulls data from the database and performs statistical analysis. There are some difficulties in accessing the desired data. In some cases, this is due to the structure of the database. In other cases, it is due to how PR has populated it. For instance, entries for responsivity are often distinguished from each other by many different entries in the parameter field, such as wavelength range, bandwidth, or power level.

One goal for using the API may be to check if the uncertainties provided in an NMI's digital calibration certificate (DCC) are consistent with the entries in the KCDB. Peter suggests two approaches. First, a link to the relevant CMC could be provided in the DCC. Second, the relevant CMC entry could be downloaded from the KCDB at the time of generation of the DCC and embedded in it. The problem with the first approach is that the link would need to access outdated CMCs, for instance, whenever CMCs are revised. In this respect, the second approach is better.

In summary, Peter thinks the API would be very useful for many applications. There are issues with data governance. He suggests that the Working Group try to think about how we can harmonize the content that is in database.

Susanne Picard noted that Peter and Frederico were the first to test the API from an external site. She said that more people will be testing and that it will not be launched until end of 2020.

Marek Smid asked Peter if he can produce a list of the entries that have harmonization issues. Peter said yes. Marek then suggested that the Working Group recognize this issue of harmonization of CMC entries as a continuous process, one in which feedback can be provided to TG2 for inclusion in the [Classification of Services in PR](#) document and [Supporting Evidence for CMCs in PR](#) spreadsheet.

Peter emphasized that it is important when submitting CMCs that NMIs follow what is in the [Classification of Services in PR](#) document and that reviewers are consistently applying those classifications. Some of the deviations that are currently in the KCDB may be historical because the classification has been updated over time.

Stefan Kück suggested that the Working Group forms sub-groups according to the branches defined in the service categories. These sub-groups work on the review the entries and making the editorial changes needed for harmonization of entries.

DP-2020-02: [Add the work of harmonizing the CMC entries to the responsibilities of TG2.](#)

Marek suggests that TG2 consider having a meeting in Feb. 2021 to further develop the approach for this harmonization activity. He also suggests that any Working Group member that is interested should contact TG2 Chair. Stefan would like to participate.

AP-2020-04: Catherine and Marek to organize meeting of TG2 to discuss and further develop the approach for the harmonization activity raised by Peter Blattner during the KCDB API discussion. S. Kück to be invited. Deadline: February 2021.

10. News from JCRB since September 2019

Sten Bergstrand reported ([CCPR-WG-CMC/20-13](#)) that the 42nd meeting of the JCRB, which was originally scheduled in March 2020, was cancelled due to the COVID-19 pandemic. The meeting was rescheduled as an online meeting in September 2020. He reviewed relevant outcomes.

Action 42/1: RMOs shall work with their TCs to review the status of the RMO KCs and SCs that have not been completed in 5 years (as listed in the KCDB report and report to the 43rd meeting of the JCRB). RMO secretary should be in contact with the pilots for any of these long-term comparisons for status updates.

Resolution 42/1 and 42/4 both address issues related to the COVID-19 pandemic. The end of the transition period to ISO/IEC 17025:2017, as decided in JCRB Resolution 39/3, is extended from 2020-11-30 to 2021-06-01. Related, the JCRB approves an extension for all RMO-approved quality management systems set to expire in calendar year 2020 to June 2021, if needed. The JCRB plans to revisit this topic at its 43rd meeting.

Resolution 42/3: The CIPM MRA policy documents, CIPM MRA-P-11, CIPM MRA-P-12, and CIPM MRA-P-13, are approved. The corresponding guidance documents, CIPM MRA-G-11, CIPM MRA-G-12, and CIPM MRA-G-13, have been revised and are being reviewed by the RMOs. Sten is hoping the documents will be approved by January 2021. (*Note: They were approved and published on 11 January 2021, see <https://www.bipm.org/en/cipm-mra/cipm-mra-documents>*). He emphasized that the information in these new documents is the same as previous versions, but it has been restructured.

Resolution 42/5: The JCRB CMC website shall close no later than 2021-06-30. The final date will be decided at the 43rd JCRB meeting. Sten noted that there are only 3 CMC sets in review that were submitted using the old system. Once they are approved, they will be published in the new system.

Sten also showed plots of the timescale (from submission to publication) for each CMC set. Under the old system, it was approximately 180 days. So far, with the new system, it has decreased to 78 days.

11. RMO TCC reports on CMC activities since previous meeting

11.1 AFRIMETS

Reinhardt Sieberhagen reported that there are no updates for AFRIMETS. A TC meeting was scheduled but was cancelled due to the COVID pandemic. His manager, Liesl Burger, is eager for AFRIMETS members to have TC PR meetings and activities more regularly.

11.2 APMP

Annette Koo presented the APMP TC Chair's report ([CCPR-WG-CMC/20-15](#)). Details about the progress of CMC submission by APMP is summarized in the report. Annette explained that these submissions were originally made in 2019 using the old spreadsheet system. Once the intra-RMO review is completed, the NMIs will need to submit their CMCs using the new KCDB submission process. The TC Chair will then make a note in the system that the intra-RMO review has been completed offline. There are some delays because this process is new and non-standard.

11.3 COOMET

Anatolii Bescupschii presented the COOMET report ([CCPR-WG-CMC/20-14](#)). Details about the progress of CMC submission by COOMET and COOMET's review of inter-RMO CMCs is summarized in the report.

Anatolii also directed a comment to Susanne Picard. He said he is not receiving notifications from the KCDB when there are actions needed for him to address. Susanne asked that Anatolii email her with specific examples so she can investigate the issue.

11.4 EURAMET

Stefan Kück presented the EURAMET report ([CCPR-WG-CMC/20-17](#)). Since the last WG-CMC meeting, EURAMET has held a TC meeting and a workshop. The TC meeting included updates on WG-CMC activities. The topic of the workshop was the KCDB 2.0 and the new submission and review process for CMCs. Details about the progress of CMC submission by EURAMET and EURAMET's review of inter-RMO CMCs is summarized in the report.

11.5 SIM

Thiago Menegotto presented SIM's report ([CCPR-WG-CMC/20-18](#)). Details about the progress of CMC submission by SIM and SIM's review of inter-RMO CMCs is summarized in the report.

Like Anatolii, Thiago noted that he did not receive notifications from the KCDB.

Thiago also noted that SIM Metrology Working Group 2 (MWG2) recently elected a vice chair, Dr. Juan Pablo Babaro from INTI (Argentina).

11.6 GULFMET

There was no representative from GULFMET in attendance, and no updates were submitted in advance of this meeting.

12. WG CMC discussion - Procedure on RMO TCCs reporting on consistency checks of CMCs after completed comparisons (WG Chair, RMO TCC)

Dong-Hoon stated that there was an action point in the WG-KC concerning consistency checks of CMCs following the completion of comparisons. He suggested that maybe this action point is more appropriate for WG-CMC. Marek responded that NMIs are responsible for their own CMCs, but there might be a way for the Working Group to apply its competence to this issue. He suggested

that TC Chairs add an extra item to their reports which summarizes completed comparisons and actions taken by participating NMIs in reviewing the consistency of their CMCs with the results of the comparison.

Sten Bergstrand noted that there is no prescribed role for the working groups to collect this information; although, there is nothing to prevent its collection either. Marek declared that the WG-CMC is aware that the responsibility of CMCs in the KCDB is the responsibility of the NMI and its RMO. However, to continue in the direction of harmonization, the WG-CMC would like to propose that TC Chairs submit this information with their reports.

Annette added that the Working Group thoroughly reviews new CMC claims, but then makes no effort to verify that the CMCs continue to valid over time. It cedes that responsibility to the NMI. This seems to be an imbalance. Consequently, she thinks more structure would be beneficial.

DP-2020-03: RMO TC Chairs will report on consistency checks of CMCs following publication of comparison results as a part of their regular RMO TC reports on WG CMC annual meetings.

AP-2020-05: Starting with the next WG-CMC meeting, RMO TC Chairs will report on consistency checks of CMCs following publication of comparison results.

13. RMO proposals for new CMC Service Categories

As noted above in Item 8, an action point has been assigned to Jacques Morel to submit a request for new CMC service categories for fibre optics. No other proposals were made.

14. Review and update of WG CMC Strategic planning for years 2017-2020

For the on-line meeting time constrains, Marek submitted to not to discuss a regular update of WG CMC Strategic planning document for 2020 during the meeting itself. He has proposed to circulate the document to all via email with mark-ups of actual updates. Comments are welcome.

AP-2020-06: Marek will circulate the WG-CMC strategic planning document with mark-ups among the Working Group for feedback. (Circulated on March 30, 2021 updates marked up in red)

15. Any other business

Marek previously deferred discussion of the statuses of the following action points to this Item.

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.

Discussion: The status of this action point was clarified in Item 7.2. Susanne Picard would like the Working Group to think of possible restructuring of the Classification of Services in a way that's more robust and practical for implementation. She suggested using the proposed changes for fibre optics as a model for re-classifying the PR services.

Status: This action point will remain open for future consideration.

**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.**

Discussion: Dong-Hoon noted that the classification structures for CMC and comparison entries are different ([CCPR-WG-CMC/20-21](#)). He proposed changes to the structure of the comparison search to match the structure of the CMCs. Susanne Picard believes that these changes are possible, but she would like to have further discussion with Dong-Hoon for clarification. Dong-Hoon also clarified for Maria Nadal that these changes do not affect the "Classification of Services in PR" (CMC PR pdf) for which TG2 is responsible. They only affect the search structure in the KCDB

for comparisons.

Status: The Working Group agrees with Dong-Hoon's proposed changes. He will send the proposed changes to Susanne and discuss them with her. He will report back to WG-CMC on the results of this discussion.

AP-2020-07: To follow up the [AP-2019-03](#), Dong-Hoon will send the proposed changes to Susanne and discuss them with her. He will report back to WG-CMC on the results of this discussion. Deadline: May 2021

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.

Discussion: Marek reported that COOMET submitted new services categories for spectral refractive index for liquids. All resulting feedback was positive.

Status: Completed.

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.

Discussion: Marek reported that discussions with CCM were delayed.

Status: New deadline set for 1/2021. Marek will work with Joële to organize the meeting.

AP-2020-08: To follow up the [AP-2019-05](#), Marek with help from Joële will perform the discussion with the relevant person from CCM about the perspective on the addition of a P&R service category for refractive index of liquids to CCPR CMC SCs. Deadline: January 2021.

AP-2020-09: Pending discussions with CCM, Anatolii Bescupschii will send proposed service categories to TG2 for inclusion in the "Classification of Services in PR" (CMC PR pdf) and "CMC Supporting Evidence Spreadsheet" (CMC PR Excel).

16. Next meeting

John Lehman reported that NEWRAD will likely be virtual because NIST is prohibiting any in-person conferences through at least June. Marek suggested we consider having a virtual meeting for next meeting of WG-CMC. Joële Viallon asked the Working Group if they would prefer one long meeting (like today's) or several short meetings. Both John Lehman and Annette Koo requested several shorter meetings. Joële suggested that the next meeting consist of at least 2 meetings, scheduled approximately 2 weeks apart.

AP-2020-10: Marek will circulate options in for WG-CMC meetings in late summer or early fall of 2021. Deadline: January 2021.

17. Closing of the meeting