

Minutes of the Working group for Calibration and Measurement Capabilities (CCT-WG-CMC)

Cisco Webex online meeting, 1 October 2020, 12:00-14:00 CET

Present:

Jovan Bojkovski (chairman) (MIRS/UL-FE/LMK)

Dr Susanne Picard (BIPM)

Efrem Kebede Ejigu (AFRIMETS/NMISA), Inseok Yang (APMP/KRISS), Anatoly Pokhodun (COOMET/VNIIM) (joined after 30 minutes), Dolores del Campo (EURAMET/CEM), Miltiadis Anagnostou (GULFMET/EMI)

Also present: Hishashi Abe (NMIJ)

Action list:

Action 1: All RMO representatives to make suggestion regarding timing of the submission of new CMCs to the KCDB 2.0. Possibilities are twice per year (for example end of June and end of December) or one per year (for example end of June). **Deadline 16. November 2020.**

Action 2: All RMO to make a suggestion which documents should be added to CMC review protocols in order to improve their harmonized implementation. Also the need for review protocol for air temperature, as a part of existing CMC review protocol for industrial thermometers should be checked within RMOs. **Deadline 16. November 2020.**

Action 3: **Susanne** to submit thermal diffusivity protocol, change of service category from current "2.2.2 Industrial platinum resistance thermometers (IPRTs)" to "2.2.2 platinum resistance thermometer (PRT) by comparison" for CCT approval. **Deadline prior to the CCT 2020 meeting.**

Action 4: Each RMO to prepare suggestion of decrease in CMC categories, **deadline 31. December 2020.**

Action 5: Jovan to inform WG Humidity chairman that **Hisahi + group of experts from WG Hu** should make a suggestion to the change of CMC review protocols for humidity **deadline 16. November 2020.**

Agenda:

- 1) Review of submitted CMCs - problems and suggestions
- 2) Review protocol amendments - changes
- 3) New CMC review protocols - thermal diffusivity
- 4) Decrease of number of categories (thermocouples only one category) and number of CMCs (use equations, matrices, ...)
- 5) Which comparisons cover which calibration services
- 6)* Inter-RMO review process harmonization - difficulties and delays in CMC review process in the last three years
- 7)* KCDB 2.0. and its impact to CMC review process
- 8)* Any other business

*only partially discussed during the meeting, next online meeting is foreseen on 26.November 2020 13:00-15:00 CET

In order to increase efficiency of the online meeting, the members of the WG CMC had to provide any documents and comments prior to the meeting for others to review. The documents sent before

the meeting were: "Issues detected in the thermometry CMCs inter-RMO review v2.docx" prepared by EURAMET, "Issues on Humidity CMC review_HA_R1.docx" prepared by APMP.

Besides documents, which were prepared by RMOs, also following documents were circulated in order to initiate discussion and make conclusions: "Reducing the CIPM MRA Workload: Case Study for the Contact Thermometry and Hygrometry fields", by A Peruzzi, J Bojkovski, and R Bosma, IMEKO World Congress 2018", CMC review protocol for LF thermal diffusivity_final-version190930, "Uncertainties in the realisation of ITS-90 metal freezing points using sealed cells - CCT/17-20".

- 1) Each regional metrology organization (RMO) presented status of submitted and potential future CMCs. At this moment within AFRIMET CMCs which are submitted are usually of higher value when compared to other RMOs. This is resulting that they are accepted without major problems. However, **Efrem** emphasized that in order to speed up and harmonize process, it would be beneficial if CMC review protocols are expanded with examples of documentation, which has to be submitted as an evidence. APMP and EURAMET have a yearly review of CMCs in accordance with CMC review protocols. **Inseok** brought out the fact that KCDB 2.0 enables us to submit theoretically one CMC per day, per country, which will generate in parallel problem in timing of the CMC review. **Dolores** informed that there are repeating problems within interRMO review process, which are slowing down the review process. Also, CMC review protocols could be improved. This matter of harmonization will be again dealt at point 6 of Agenda. Within GULFMET region there are two laboratories having primary capabilities in the field of temperature and humidity (Saudi Arabia and UAE) and two laboratories having secondary capabilities (Qatar and Bahrain). **Miltiadis** informed us that the UAE is accredited in accordance with ISO 17025. **Susanne** informed us that JCRB document D.04 "Calibration and Measurement Capabilities in the context of the CIPM MRA" should be always consulted when in doubt regarding procedures related to CMC. **Susanne** also informed us, after the introduction of KCDB 2.0, different CC adopted different approaches regarding CMC submission timing. Usually it is either one or two agreed time slots within the year. APMP and EURAMET are more for two agreed time slots, while COOMET and AFRIMET are for one. In order to manage CMC submission efficiently, it has to be understood that the CMCs can't be submitted after these time slots and they will wait for next time slot. Appropriate documentation, such as quality system peer review/accreditation or equivalent, documents required by CMC review protocol and results of comparison should accompany and CMC submission.
- 2) From the discussion among participants, it is clear that CMC review protocols need revision. In order to harmonize their usage and understanding, the examples of supporting documentation are needed. Immediate changes should be done to protocol for industrial category and humidity.
- 3) **Jovan** to ask RMOs about review protocol for air temperature, as a part of existing CMC review protocol for industrial thermometers. The protocol for thermal diffusivity should be published at the webpage. All the revised protocols should be available from BIPM CCT webpage.
- 4) And 5) Representatives of RMOs gave their opinion about sent documents, which are related to decrease number of comparisons, categories and number of CMCs. AFRIMET in principle agrees with suggested approach. APMP partially support the suggested approach. **Inseok** emphasized that current approach is based on CMC categories of instruments. Maybe in the future we could think about physical quantity based approach. EURAMET agrees with suggested approach. **Dolores** point out that when we reduce the number of CMCs and categories, we still can issue calibration certificates for other categories, which are not

directly written in KCDB, if we agree. COOMET informed us that it is good approach to quantity of CMCs. However, **Anatoly** emphasized that we have to be careful to improve and not to break current CMC system. GULFMET in principle agree. However, **Miltiadis** pointed out potential problem with customers and usage of the KCDB 2.0 . **Susanne** brought to our attention the document D.02, “Use of the CIPM MRA logo and certificates statement”, where it is written “The “CIPM MRA Logo” and the “CIPM MRA statement” can only be displayed on the certificates of those calibration and measurement services that are covered by a Calibration and Measurement Capabilities (CMCs) published in the Appendix C section of the BIPM key comparison database (KCDB) available on the BIPM website”. There was discussion and ideas among participants what are potential approaches that could decrease number of CMC categories. Ideas were that we have calibration at fixed points and calibration by comparison, one category for thermocouples at fixed points and by comparison. AFRIMET informed as about potential problems with NAB, which could require that each category should be present in order to provide traceability to accredited laboratories. All the ideas should be in line with CIPM and NMI directions.

Susanne informed us that the usage of equations for CMCs are acceptable by ILAC.

- 6) **Hisashi** presented the idea from APMP regarding the Issues on CMC review of Humidity. Humidity CMC submissions without comparison results are sometimes mistakenly approved within RMO. It is clear that at least simple comparison should be performed. GULFMET agree with suggested inputs from APMP, COOMET also agree. EURAMET suggested to include template to humidity review protocols. **Dolores** also mentioned that hybrid comparisons could be used as solution where there are no other comparison performed. AFRIMET agrees with suggestion from APMP. **Hisahi + group of experts from WG Hu** should make a suggestion to the change of CMC review protocols for humidity. EURAMET presented the document that was sent prior to the meeting the WG CMCs members. Due to the lack of time, we have discussed only about the point about IPRT (category 2.2.2 in service categories). It was agreed among participants to change the category name from current “2.2.2 Industrial platinum resistance thermometers (IPRTs)” to “2.2.2 PRT by comparison”. In this way, it will be emphasized that this category covers any PRT calibrated by comparison (IPRT, SPRT, CSPRT, HTSPRT). The name change has to be approved by BIPM CCT.
- 7) **Date for the next meeting is Online meeting 26. November 2020 13:00-15:00 CET.**

Drafted by Jovan Bojkovski, sent to participants for comments on 18. October 2020

Final version 28. October 2020