

Report of the 45th Meeting of the JCRB

Held on 16 / 17 March 2022

Online

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Participants

BIPM / CIPM

Dr Martin Milton

Dr Olav Werhahn

Mr Andy Henson

Dr Susanne Picard

Mr Chingis Kuanbayev

Dr James Olthoff, CIPM representative to JCRB (*left at day-2, after agenda-item 8*)

AFRIMETS

Dr Wynand Louw

Prof. Mohamed Amer

Prof. Noha Khaled

Ms Lerato Ntamatamala

Mr Abdellah Ziti

Dr Henry Rotich (Observer)

Dr Gouda Mohamed Mahmoud (Observer)

APMP

Mr Xiang Fang

Dr Victoria Coleman

Dr Ping Yang

Dr Jinyuan Li

Ms Rugkanawan Wongpithayadisai

COOMET

Dr Valery Hurevich

Prof. Pavel Neyezhmakov (not attending)

Mr. Evgency Lazarenko

Ms Nino Mikanadze

Dr Anna Chunovkina

Mr Nikita Zviagin (Observer)

Ms Nadezhda Liakhova (Observer)

EURAMET

Dr Jörn Stenger

Dr Julien Vuillemin-Toledo

Dr Kai Stoll-Malke

Dr Miruna Dobre

Dr Davor Zvizdić (Observer)

GULFMET

Eng Amina Hassan AlBastaki

Dr Ismail A. AlFaleh

Mr Jon Bartholomew

Ms Asma Al Hosani

Eng Omar Kanakrieh

Ms Samia Mohamed (Observer)

Eng Abdulelah Al-Qarnas (Observer)

SIM

Lic Lucas Di Lillo (*attended until 15 minutes before the end of day-2*)

Dr Claire M. Saundry

Ms Sally Bruce

Eng Claudia Santo

Dra Marina Gertsvolf
Mr Andrew Conn (Observer)
Mr Christopher Cortez (Observer)

The 45th meeting of the JCRB was conducted as two one-day online sessions, held between 12.00 and 14.00 (UTC) to minimize difficulties for participants and to provide the best possible conditions for a meeting with global attendance. The items were generally addressed in the order foreseen in the agenda with items 1 through 7 on the first day, and items 8 through 12 on the second day. An exception was item 6.5 where GULFMET presented their QS report was delayed to day-2.

1. Welcome by the Chairman and confirmation of delegations' representatives with voting rights

The JCRB Chairperson, Dr Milton opened the meeting, welcoming and identifying the representatives, advisors and observers of each RMO delegation. He stated that all delegations were present with respective voting rights. He made the following comments to open the meeting:

"It is now two and a half years since we last met face-to-face at the 41st meeting in Dubai. During this time, we have sustained the work of the JCRB by holding meetings online. We know that some activities are not performed as efficiently and thoroughly online as they can be face-to-face. Despite these limitations, we have continued our work through a period when cooperation has been difficult.

We will meet this week and again there are events outside of our control that have substantially changed the lives and work of some in the JCRB. In order that we can make our best efforts to sustain the collaboration within the JCRB, I am taking the opportunity here to remind you about the agreed Terms of Reference for the JCRB which appear in Annex E of the MRA.

All six RMOs have submitted the names of their delegations for the meeting which provided the basis to go ahead. If the work of your RMO, within the scope of the terms of reference of the JCRB, is being affected by international events then please consider including an update as part of the comments on your report (agenda item 6).

In the conduct of the meeting today, I believe we should all recall the achievements of the JCRB and should know that we can rely on each other to continue to work within the Terms of Reference of the JCRB. We should all be planning to participate today in the ways that have made the JCRB a success at 44 meetings held over 24 years".

2. Approval of the agenda

The Chairperson went through the agenda and pointed out that no new agenda item had been raised since the draft agenda has been circulated by the JCRB Executive Secretary. The agenda was approved by the representatives, no objection being raised. Later on day-2 of the meeting, the Chair decided to move agenda item 12.3 before agenda item 11. In this report the agenda items are presented in numerical order.

3. Approval of the minutes of the 44th meeting of the JCRB and review of pending actions

The JCRB Chairperson recalled that the draft minutes of the 44th meeting of the JCRB were circulated after the meeting and comments have been received by RMOs that have been incorporated and the revised file has been uploaded as working document to the BIPM website.

Dr Wynand Louw said that he would send an additional typo to be corrected by the Executive Secretary, Dr Olav Werhahn. With these small changes the minutes were approved.

[The report of the 44th JCRB meeting is available on the unrestricted BIPM website <https://www.bipm.org/en/committees/jc/jcrb>]

The Chairperson went on to review the actions from the 44th meeting:

Action 44/1 The JCRB requests the Executive Secretary to include the possibility of up to two additional observers from each RMO when issuing the convocation for future online JCRB meetings. *This action has been completed.*

Action 44/2 The JCRB requests the Executive Secretary to include an agenda item for the 45th meeting of the JCRB regarding the validity of RMO-approved quality management systems, to coincide with the end of the extension period granted at the 43rd meeting. *This action has been completed and will be discussed further in agenda item 7.1.*

Action 44/3 The JCRB requests the Executive Secretary to upload proposed draft changes to CIPM MRA-G-13 onto the JCRB site, and requests that the RMOs review these minor changes, with a view to approving the revised text at the 45th meeting of the JCRB. *The progress on this action is reported under agenda item 10.2.*

4. Comments on the BIPM progress since the 44th JCRB meeting

Dr Milton presented the BIPM report, uploaded as JCRB/45-04.1. He explained that the BIPM update will include a section on CBKT (part of JCRB/45-04.1) that will be presented by Mr Chingis Kuanbayev and an update on the BIPM quality system report presented by Mr Andrew Henson. The BIPM QS report has been uploaded as JCRB/45-04.2.

In his presentation, Dr Milton highlighted that there are now 63 Member States and 38 Associates to the CGPM and 252 institutes participating in the CIPM MRA. Notable changes include the reinstatement of Zimbabwe as an Associate of the CGPM as of 8 February 2022. Unfortunately, Cuba and the Republic of Sudan ceased to be Associates of the CGPM on 1 January 2022 having reached the 3-year limit for failure to pay their annual subscription.

The status of Associate States meeting the CIPM criteria for being encouraged to accede and become Member States were displayed and the series of World Metrology Day (WMD) themes was presented. Preparations for the WMD 2022 was collaboratively organised by OIML, BIPM and COOMET with the poster prepared by NSC IM on the topic of Metrology in the Digital Era. He thanked NSC IM for their work and said that the theme was very topical.

Dr Milton recalled that following the established sequence, the 2023 WMD will be organised in cooperation with SIM, and that Andy Henson will contact SIM to discuss the topic. Finally, Dr Milton gave an update of the work being undertaken by the BIPM staff on the digital transformation. Additionally, the BIPM has started to run a survey on digital transformations across the CCs. The Executive Secretary has circulated a Questionnaire to CCAUV and CCEM and feedback has been received and is being processed. With the experience on this, the questionnaire or a modified version will be sent to all the remaining CCs with the view to have consolidated overview on CC opinions completed in time for the CGPM in November. At the end of his presentation Dr Milton drew attention to the job opportunities at the BIPM that are open until mid-May.

The presentation was then taken over by Mr Chingis Kuanbayev identifying the efforts and success of the BIPM CBKT programme, often in association with the RMOs, and the e-learning platform

that has been launched last year. Mr Kuanbayev mentioned that there have been 18 technical exchanges, 4 short webinars and 1 physical workshop from 1/2020 to 3/2022. With those events plus some laboratory-based knowledge transfer placements there have been some 2225 participations. Additionally, almost 500 are registered on the e-learning platform. The e-learning platform has been populated with topical courses provided by different scientific BIPM departments plus a number of modules on the CIPM MRA.

Recently the RMOs have been granted the possibility to use the BIPM technical e-learning platform <https://e-learning.bipm.org/> to provide RMO material. The opportunity has so far been taken up by COOMET, EURAMET, and GULFMET who have all signed a Practical Arrangement with the BIPM and will upload material in due course. Mr Kuanbayev invited the remaining RMOs to contact him if they require further details. A CBKT course is planned with SIM as an online event in late April 2022. At the end Mr Chingis Kuanbayev advertised a new series of CIPM MRA brochures that will be released in near future, whereby new NMIs or NMI employees in the various RMOs will be addressed on the various benefits and support originating for the CIPM MRA participants.

Mr Kuanbayev responded to a question by Ms Claudia Santo clarifying the number of participants in the CBKT programme.

5. Comments on the report from the CIPM

Dr Olthoff presented slides that were uploaded as JCRB/45-05 to the working documents. In his talk he recalled decisions CIPM/110-15 to -26. Among, them is CIPM/110-22 by which a “Joint Statement of Intent” on the digital transformation in the international scientific and quality infrastructure has been approved and will be signed by BIPM, OIML, CODATA and IMEKO. Discussions are ongoing with other major international organisations.

Finally, Dr Olthoff mentioned the draft resolutions for the 27th CGPM. All draft resolutions are uploaded and publicly accessible as part of the documentation for the CGPM from the publication and events tab on the BIPM website:

<https://www.bipm.org/documents/20126/64811571/Draft-Resolutions-2022.pdf/2e8e53df-7a14-3fc8-8a04-42dd47df1a04?t=1644502962693> .

Claudia Santo asked whether the text of the Joint Statement would be available to the JCRB delegations. Mr Andrew Henson agreed to circulate the statement to the RMO Representatives to the JCRB immediately after the meeting.

6. Comments on the RMO reports to the JCRB

6.1. AFRIMETS (uploaded as JCRB/45-06.1-1 and JCRB/45-06.1-2)

Dr Louw reported that the AFRIMETS General Assembly would take part in Julye 2022 and that he hoped to see it as a physical meeting. On the Members and Associates in AFRIMETS Dr Louw pointed out that AFRIMETS Secretariat and TCs strengthened the collaboration with the newly formed sub-regional metrology organisation in West Africa, “ECOMET”, that is based on the ECOWAS regional economic community, comprising 13 countries. On the same topic, he regretted the exclusion of the Republic of Sudan from Associate status and the work of the CIPM MRA due to financial issues. On the other hand, he welcomed the re-entry of Zimbabwe. He highlighted the importance of AFRIMETS supporting economic developments as AfCFTA gains pace and with it the importance of intra-African trade and the need for metrological underpinning. CIPM MRA activities

by AFRIMETS institutes have continued despite the pandemic. Zimbabwe's CMCs have been reinstated and numerous institutes have published new CMCs. Due to some countries' policies CMCs are not necessarily published in a one-by-one relation to services but rather on generic measurement capabilities backed-up by CMCs whereon many different services are designed for customers. Based on this AFRIMETS' CMCs have not changed in numbers substantially during the years 2020 to 2022.

The AFRIMETS QS report to the JCRB (JCRB/45-06.1-2) was presented by Dr Noha Emad Khaled. Her presentation was given following agenda item 6.6 due to technical reasons. She reported that despite the pandemic QS reviews of AFRIMETS laboratories had continued. Numbers are given in the uploaded working document JCRB/45-06.1-2.

6.2. APMP (uploaded as JCRB/45-06.2-1 and -2)

In his presentation (JCRB/45-06.2-1) Mr Xiang Fang highlighted that at the end of his term, the APMP Chairperson-elect, Hyun-Min Park (KRISS) will take over at the APMP GA 2022 at the end of the year. Furthermore, 6 new TC-Chairs have started in their roles after the GA in November 2021. Recently, the APMP Focus Group on Digital Transformation, DXFG, has been supported by a new Chairperson, Dr Blair Hall (MSL). Mr Fang pointed out that the DXFG has launched four directions of work, on Liaison, Enablement, Technology and Core or digital transformations, based on the new Chair's work plan, having set three-year goals for each of these directions. Digital transformation was also among the topics of the 2021 APMP Directors Workshop, where he said that 'ideas have been shared and discussed to develop a holistic understanding of metrology digitalization'.

Mr Fang recalled the work of APMP's Developing Economies' Committee (DEC) in overseeing and coordinating associated programs to address the needs of corresponding APMP member institutes.

Regarding CIPM MRA activities, APMP has seen 3 new CIPM MRA participants since 2021, a number of 176 new CMCs and 9 new Key and Supplementary comparisons.

Answers were exchanged after Claudia Santo asked about APMP's DEC experiences with respect to an evaluation of its impact to relevant economies. Mr Fang said an evaluation process is currently in progress.

APMP's QS report to the JCRB was uploaded as working document JCRB/45-06.2-2.

6.3. COOMET (uploaded as JCRB/45-06.3-1 and -2)

Dr Hurevich presented slides on the COOMET's report to the JCRB (JCRB/45-06.3-1) that were uploaded as JCRB/45-06.3-2. COOMET has organized an extraordinary Committee meeting in October 2021. Possible options to progress an intergovernmental agreement, or on a transition to an association of national metrology institutes were mentioned. A registration of a legal entity and its appropriateness has been discussed as well as the operation of a permanent secretariat. Finally, funding of COOMET activities based on a fee-scale that would need to be built and insights on the expenditures have been exchanged. Dr Hurevich stated that COOMET seems at the beginning of a reorganization well realizing that 'there is a long road ahead, which implies challenges and difficulties'.

With respect to the digital transformation, the COOMET Task Group on the issues of digital transformation in metrology chaired by Dr Andrey Pankov (VNIIMS) and Dr Stanislav Zub (NSC IM) organized two meetings since the last JCRB and a 'COOMET Concept for the issues of digital transformation in metrology' has been prepared.

COOMET has stated the termination of memberships of NMIs of Romania and DPR Korea. And regretted to be informed that its member Cuba has ceased its participation in the work of the CIPM MRA.

On CIPM MRA activities COOMET members have published 15 new CMCs since the last JCRB meeting and a number of 86 projects are currently progressed, among 10 new comparisons were registered in the KCDB.

COOMET has acknowledged the activities on CBKT and Dr Hurevich highlighted the 'Practical Arrangement between the BIPM and COOMET on cooperation in delivering capacity building and knowledge transfer activities using the BIPM e-learning platform'. This arrangement was signed in January 2022. Furthermore, he pointed out that COOMET has provided a webinar to its member institutes on the current policy and guideline series CIPM MRA-P-11 to 13 and CIPM MRA-G-11 to 13, respectively, COOMET's recommendations on the assessment of comparison results and calibration capabilities.

Dr Hurevich's presentation then also included brief information about COOMET's QS to the JCRB. In particular, he stated that related to the COVID pandemic and in line with the Resolution JCRB/43-1, COOMET decided to extend the recognitions of the quality management systems of SE "NDI Systema" and KazStandard until August 2022.

In addition to the report of Dr Hurevich the COOMET Vice-President Ms. Mikanadze gave a short presentation containing a more detailed information about the activities of the COOMET Quality Forum (Status of recognition of the QMS of COOMET NMIs/DIs according to the ISO/IEC 1725:2017 and ISO 17034:2016, as well as information about the COOMET practice regarding the confirmation of CMC's coverage by QMS).

6.4. EURAMET (uploaded as JCRB/45-06.4)

Dr Jörn Stenger orally reported on EURAMET that the new metrology research programme, the "European Partnership on Metrology", has been further prepared since the last JCRB. The legislation behind the programme was decided by EU Parliament and Council end of November, and the signature of the agreement between EU and EURAMET for the programme implementation is expected by end of March. In parallel, a Work Programme for the ahead-of-contract implementation had been adopted, enabling the launch of the 2022 call for research proposals in the areas of metrology for digital transformation, health, pre-normative, and capacity building-related themes.

Dr Stenger then read out the EURAMET position regarding the invasion of Ukraine by Russia. As a consequence of EU sanction policies, it included a recommendation of the Board of Directors that all EURAMET projects and activities involving federal or public institutions from Russia or Belarus are to be terminated, suspended, or concluded without Russian or Belarussian participation. (The meeting returned to this topic under agenda item 11).

Mr Henson asked Dr Stenger on the EURAMET report JCRB/45-06.4 which contains a statement on the intended re-entry of the European Joint Research Center's as a CIPM MRA participant, that if the JRC wants to reinstate their greyed-out CMCs, then EURAMET may want to initiate a communication about that as the reinstatement needs to be initiated by the institute. Dr Stenger answered that evaluations of the JRC's capabilities are in progress and the reinstatement of greyed-out CMC will be discussed with JRC.

6.5. GULFMET (uploaded as JCRB/45-06.5-1 to -3)

Eng Amina H. AlBastaki presented the GULFMET report JCRB/45-06.5-1 stating that GULFMET has recently decided on some new TC-Chairs and the new GULFMET President at their GA in November 2021. The GA also established a new Working Group for Digital Transformation. In January 2022, the 4th meeting of GULFMET TC-Chairs has been conducted, that set out to review work in progress, discuss and approve the TC Action Plan 2022, and to conduct a workshop to enhance the capabilities of GULFMET members in reviewing CMCs. Furthermore, GULFMET progressed a new mission statement and reformulated its visions. By that defining the strategic goals for the period 2022 to 2025.

On the CIPM MRA participation, Ms AlBastaki highlighted that 6 laboratories in GULFMET participate and have 24 published CMCs in EM, L and TF. GULFMET contributes to 28 Key and Supplementary comparisons also in the M, PR, and T area.

Since the last JCRB meeting, in total 4 events have been organized in GULFMET to underpin QS guidelines referring to CIPM MRA-G-12, CMC review and topical competences on quality management systems for ionizing radiation laboratories and radiation protection, respectively.

Finally, Ms AlBastaki reported the signing of the Practical Arrangement with the BIPM on the e-learning platform use by GULFMET and the corresponding training session in March 2022.

For the upcoming IMEKO conference “Digitalisation” (M4Dconf) GULFMET acts as a sponsor.

In a separate presentation, Ms Asma Al Hosani reported on the GULFMET quality system. (This presentation JCRB/45-06.5-3 was given on day-2 of the JCRB meeting due to technical reasons in between agenda items 9.1 and 9.2). Ms Al Hosani presented about the 19th GULFMET TC-QS meeting in November 2021. At this meeting, Ms Al Hosani was elected as the new TC-QS Chair. At the meeting amongst other topics, the poll of QS-Assessors has been discussed based on procedures and criteria that has to be developed at GULFMET in combination with a technical platform to facilitate it. Within the GULFMET TC-QS a number of training activities has been reported to have happened.

6.6. SIM (uploaded as JCRB/45-06.6-1 and -2)

Lic Lucas del Lillo presented the SIM report to the JCRB. The corresponding working document JCRB/45-06.6-1 highlights 2 new active members and 11 new associates to the SIM. Among them the IAEA is listed. As an internal organisation its participating in the CIPM MRA is subject to CIPM MRA-P-13. Historically, IAEA has been participating through EURAMET but indicated sometimes ago its intention to rotate its participation around the RMOs over time with SIM now taking on the role (see also Dr Kai Stoll-Malke’s question further down). With respect to CIPM MRA activities, the SIM report further lists 8 Key and Supplementary SIM-piloted comparisons listed in the KCDB and a number of 73 new CMCs published since the last JCRB.

Mr del Lillo furthermore presented on SIM projects including the IDB SIM Project “Metrology for digital transformation to support health services in LAC” where a workshop will be held in April 2022.

On the QS related report as partly written in JCRB/45-06.6-1 and JCRB/45-06.6-2, SIM reported that the Quality System Task Force continued to meet virtually to review and approve QSs of member institutes. From Sep. 2021 to March 2022, 13 reviews have been undertaken, in sometimes more than one area per institute. On the onboarding of IAEA, the IAEA’s quality

manager has already attended the SIM QSTF meeting. By this the IAEA gets prepared to be reviewed by the SIM QSTF in future. With respect to QS reviews, a number of SIM members reported delays in their internal quality audits due to COVID-19 impacts.

Following the SIM update, Dr Jinjuan Li asked about the availability of more detailed information on the IDB SIM Project on digitalization. Claudia Santo responded that various activities from this project are ongoing, and more details are to be found on the SIM web site.

Finally, Dr Kai Stoll-Malke asked about IAEA's change from EURAMET to SIM. Dr Sally Bruce replied this is to be discussed offline between IAEA, EURAMET and SIM.

Following agenda item 6 (RMO reports to the JCRB) there was some discussion of opinions on how RMO reports to the JCRB should be formulated and on what content they should include. This discussion was triggered by Dr Louw who observed the range of content of the different reports from the different RMOs has increased over the years. He said he could remember attempts in the past to harmonize reports by means of a template.

Mr Henson said that some old templates are available from the early 2000 years. The current CIPM MRA policy and guidelines documents provide clear statements and recommendations on the content of the RMO reports to the JCRB (see CIPM MRA-P-11, Section 7; CIPM-P-12, Annex A13; CIPM MRA-G-12, Section 5). Dr Olav Werhahn seconded, that the JCRB Executive Secretary could propose a set of RMO report templates if the JCRB would like.

Dr Milton consequently asked all RMO Representatives to the JCRB and nobody objected. Then, he asked the JCRB Executive Secretary to formulate an action on this issue to propose a RMO QS report template (see Action JCRB/45-1).

Under the same agenda item 6 and following some technical problems at agenda item 4, Mr Andrew Henson reported on the BIPM's QS update. The corresponding presentation is uploaded as JCRB/45-04.2. Mr Henson explained that the BIPM's QMS has been peer-reviewed by SIM under the auspice of Dr Cortés Zuniga. Following this, some actions have been set out on the roles in the quality system, on updating the general QMS procedures, and on clarifications of the risk/opportunity review procedure.

7. Remote Quality systems peer-review

7.1 Following Action 44-2 an update of the RMOs related to Resolution 43/1

Resolution 43/1 states that: *Due to the continuing effects of the global pandemic on travel and workplace accessibility, the JCRB allows the RMOs to extend the validity of RMO-approved quality management systems for one year if it is not possible to develop sufficient confidence in reviews carried out online, in person or a combination of both. The JCRB will revisit this topic at its 44th meeting.*

At the 44th JCRB, Resolution 43/1 was carried over to the current meeting. On this, Dr Milton expressed his hope that after March 2022, the work of the JCRB could focus on resuming with appropriate 'COVID-19-learned-lessons' working conditions. Dr Louw said he was generally in agreement with this and observed that the situation was still not as it had been before COVID-19.

A number of delegates expressed their views that a mixture of remote and onsite assessments and QS audits is still necessary. Even using this “hybrid” approach review deadlines could not be met.

After some discussion, with input from Dr Louw, Dr Bruce and Ms Mikanadze, it was agreed to draft a Resolution that would be finalised at day-2 of the meeting. *(It was adopted as Resolution JCRB/45-1).*

The Chairperson closed day-1 of the 45th meeting.

Day-2:

8. Comments on the KCDB report (uploaded as JCRB/45-08)

Dr Picard presented the slides of JCRB/45-09-1 that are summarising the first part of the KCDB report. She noted that as already stated by the previous KCDB reports the total number of CMCs as well as the increase in Key and Supplementary comparisons appear to be levelling out. Dr Picard also noted that the number of ongoing Key and Supplementary comparisons in the system that are older than 5 years has a natural variation between the March and September meetings. Notwithstanding that, the number of delayed CC KCs has decreased whilst there does not seem to be the same improvement with the SCs. RMOs were encouraged to address this situation.

With respect to the KCDB API by which machine readable CMCs are being accessible, Dr Picard pointed out that a detailed user guide has been produced. The CIPM TG-DSI Expert Group has called for the KCDB as a use case.

Claudia Santo asked about the reasons for the resistance of the number of SCs older than 5 years as compared to the decrease of KCs of the same status. Dr Picard responded that the difference is that KCs are under the auspices of the CCs whereas SCs are governed by the corresponding RMOs.

9. Comments on the status of CMC submissions and review reporting on the system’s performance

9.1 Reporting on the system’s performance (uploaded as JCRB/45-09.1)

Dr Olav Werhahn reported on review durations for submitted CMCs in both the intra-RMO and the JCRB review. The reduction in review times already seen in the previous KCDB report has been maintained at the March 2022 report. Dr Werhahn also reported review durations for all submissions since 2020 basically covering the time since the implementation of the KCDB 2.0 platform. The average across all metrology areas and all RMOs in both review stages shows a mean duration per CMC of less than 60 days. He mentioned an interesting observation on the reviews of the last six months when breaking it down to the different metrology areas. Comparing both review stages, it seems that CMCs in those metrology areas where a very short intra-RMO review has been

achieved, has seen a rather long JCRB review and vice versa. However, this may only be a snapshot for this reporting period but will be looked at again for the next KCDB report. Since the area of QM has completed its first full year cycle in the KCDB 2.0 it is interesting to see that the JCRB review duration has increased again. Whereas the mean duration was reported as 110 days for QM in September 2021, the March 2022 numbers show an increase to 189 days again. This might be a seasonal effect with variations between the September and March meetings of the JCRB that is linked to the CCQM's specific schedule of KCWG meetings where CMC review is concerned and that is closer in time to the September meeting of the JCRB than to the March meeting. This is to be re-evaluated for the upcoming meetings.

On agenda item 9.1 Ms Marina Gertsvolf asked whether there might be a correlation between the reduction of review durations and changes in the review quality. The question was taken-up by Mr Nikita Zviagin mentioning the data on loss of rights in the JCRB review. Dr Werhahn answered that so far there has been no way to measure the review quality.

9.2 Reporting on the enquiry regarding implemented RMO-practices on handling the QS approval when submitting CMC claims to the KCDB

On agenda item 9.2 Dr Werhahn reported the outcome of an enquiry amongst the RMOs that he has started following his task to constantly monitor the review status as laid down in CIPM MRA-G-13. In his presentation Dr Werhahn explained that the reasoning of the enquiry is linked to the operational routines on the KCDB 2.0 platform that does not provide the option for the KCDB Office and the Executive Secretary to monitor the QS coverage of the CMC submissions which the previous system had allowed.

The feedback from the RMOs was acknowledged and Dr Werhahn concluded that all RMOs have practices implemented to ensure the QS coverage in CMC submissions. He reported that the approaches vary between the different RMOs and that the feedback showed that each RMO had used the trigger to look once more at their internal practices and procedures. Some of the RMOs reported that based on the enquiry a revision of RMO-internal practices and procedures would likely be proposed.

Following his presentation Dr Werhahn was asked by Ms Mikanadze whether a technical means could be foreseen to be implemented to enable approval of the QS for each CMC as part of the KCDB 2.0 platform. This is something that also the SIM feedback has mentioned. Mr Henson said that might be technically possible, but it would likely be expensive as it would be a significant change of the architecture of the platform. Dr Milton observed that it would only be useful if all of the RMOs used the same process which was currently not the case. It was never the intention of the KCDB2.0 to require the RMOs to adopt the same processes in house. Dr Werhahn recalled that the RMOs have reported that the assurance that the CMCs are covered by their QS is well under control.

10. CIPM MRA documents and matters arising from them

10.1 Reporting feedback from the CC consultations regarding the Statistics Task Group's proposal to revise CIPM MRA-G-11

On this item Dr Werhahn reported that all CCs have sent feedback to the JCRB Executive Secretary. Dr Werhahn presented the slides JCDB/45-10.1 that showed that

- **Two CCs** (CEM, CCQM) have provided their feedback with the statement that **further CC-internal consultation** would be required in order to get a joint CC view, **additionally a further two** (CCQM, CCPR) have indicated that developing a firm view would require discussions at **future CC meetings**.
- **CCEM, CCM, CCQM, CCTF** raised concerns about whether **CIPM MRA-G-11 was the appropriate** document for this topic and level of detail, and **two CCs** (CCQM, CCPR) see potential conflict with their own **CC internal policies**.
- **Two CCs** (CCPR, CCT) have communicated concerns about **unknown and complicated follow-on effects on CMCs** resulting if the Statistics TG's proposal would be accepted.

In conclusion, Dr Werhahn observed that the most striking view is probably that expressed by four CCs (CCQM, CCEM, CCM and CCTF) which could be summed up as: *'CIPM MRA-G-11 may not be the appropriate type of document for recommendations with this level of detail'*.

Following the presentation, Ms Santo asked for the individual CC feedback sheets. It was agreed to upload them after the meeting (*now uploaded and findable to the very bottom of the webpage under the headline 'CC comments on proposed changes to CIPM MRA-G-11 by the JCRB Statistics TG'*).

Dr Gertsvolf recalled that one of the most important aspects of the TG's proposal was the introduction of the concept of 'dark uncertainty' next to the level of details being increased by the proposal. Dr Milton responded that the different CCs have very different views on this aspect.

Due to the lack of consensus of CCs and noting the requests from some of them for more time for their CC-internal discussions, Dr Milton recommended waiting until all CCs have confirmed their opinions.

10.2 Decision on the proposed revised draft of the G-13 document (to better align the 'greying-out practice' with KCDB 2.0)

Following the 44th meeting and Action JCRB/44-2 Dr Olav Werhahn had uploaded a draft revised text to Section 10 of the CIPM MRA-G-13 as JCRB/44-10.2.1. The feedback received from the RMOs supported the minor proposed changes related to NMIs deleting their own greyed-out CMCs if no longer needed. However, comments from AFRIMETS and APMP highlighted the complexity regarding deletion dates after the 4-years warning.

Mr Henson said that based on these inputs, a detailed analysis has been undertaken. He provided a historical summary of the development of the text in Section 10. He noted that the reinstatement plan had only been imposed as a last measure for CMCs that have already reached the 5-year limit. He further explained that the reason for this was that when the 5-year limit was introduced there were very many CMCs greyed-out for longer than 5 years. Now that warnings are given at 4 years there is no longer a need for the reinstatement plan. Thus, a far simpler workflow could be introduced in which CMCs to be reinstated were treated the same way irrespective of when in the 5-years limit the reinstatement takes place. He summed up the suggestion as "warning at 4 years, deletion if not reinstated at 5 years". This was strongly supported by all of the RMOs. Dr Stoll-Malke stated that he in particular would appreciate the removal of any required reinstatement plan.

Dr Werhahn pointed out that amending CIPM MRA-G-13, Section 10, accordingly is straightforward since it largely requires removal of redundant text such that Section 10 now would read:

“A greyed-out CMC is a calibration and measurement capability published in the KCDB that has been temporarily withdrawn, with the intention of being reinstated at a later date. The greyed-out CMCs are not visible on the public KCDB website but are retained in the database for possible reinstatement and visible to the writer and the institute holding the greyed-out CMC.

Greyed-out CMCs usually arise because of non-compliance with the criteria for acceptance of CMCs as described in Section 3 but may also occur when an institute indicates that the service has been temporarily withdrawn. In agreement with Section 9, this responsibility lies with the institute declaring the CMC.

The maximum period for greyed-out status is five years. Reinstatement of CMCs within the five-year period is made on case-based evaluations of evidence showing that the reasons behind the greying-out have been identified and solved. This process is generally under the auspice of the institute holding the greyed-out CMC and can be initiated by this institute at any time within the 5-year-period. General adherence to the acceptance criteria as laid down in section 3 and 4 of this guideline as well as on modification rules as laid down in section 8 are under the responsibility of the RMO where the institute holding the greyed-out CMC belongs to.

Records on the greyed-out CMCs are kept in the KCDB (visible for logged in users) and are available through the KCDB Statistics. This information is reported at each JCRB meeting as part of the regular KCDB report.

The institute holding the greyed-out CMC will be informed when greyed-out CMCs are exceeding the fourth year of the five-year period by an automated alert from the KCDB copied to the JCRB Executive Secretary, the RMO representative to the JCRB, the relevant RMO TC/WG Chair, and the Chair of the RMO TC/WG Chair of quality management systems. An oral alert will be raised at each JCRB meeting when CMCs are within six months of the five-year limit for greyed-out status.

There are two possible courses of action during the period for greyed-out status:

– **Reinstatement:**

The institute holding the greyed-out CMC, after consulting with the relevant RMO TC/WG Chair and when appropriate, the RMO TC/WG Chair of quality management systems, initiates a reinstatement of the CMC. Confirmation that the CMCs have been reinstated is sent as an automated note by the KCDB to the institute holding the greyed-out CMC copied to the JCRB Executive Secretary, the RMO representative to the JCRB, the relevant RMO TC/WG Chair, and the Chair of the RMO TC/WG Chair of quality management systems.

– **Deletion of the CMC:**

This course of action occurs either when the institute concludes its greyed-out CMC is no longer required and:

- uses the functionality of the KCDB and deletes the CMC, or
- requests the JCRB Executive Secretary to arrange the deletion of the CMC;

or when the 5-years-limit has expired. In this case a notification is sent to the contact list specified above”.

11. Any other business

Dr Stenger on behalf of EURAMET raised again the effects that the Russian-Ukrainian situation would have on EURAMET CIPM MRA activities. He said that EURAMET's position to suspend JCRB review of CMCs and comparison-based collaboration with Russian and Belarussian institutes may impact the system.

In response to a question from Dr Milton, Dr Stenger said that this will concern a number of Key and Supplementary comparisons of which a list will be sent to the BIPM plus some unknown number of future CMCs undergoing the JCRB review. (Following the meeting, EURAMET sent a list of these comparisons, which included 2 RMO KCs in PR, 1 RMO KC in L, plus 5 SCs listed in the KCDB).

The Executive Secretary was asked to determine how many CMCs may be affected by EURAMET's position on CMC review and to send the list to the JCRB President. The JCRB President will then circulate the list to the Heads of the RMO delegations and ask their views as to whether any additional practical action would be needed to support the JCRB review process.

Dr Louw in the absence of Dr Olthoff offered to raise the issue of participation in KCs and SCs that are impacted by the EURAMET decision at CIPM. If additional discussion is necessary after a CIPM response, the RMO Representatives to the JCRB could meet to discuss a plan of action. He offered to contact the other representatives after a CIPM response.

12. Next meetings and meeting closure

12.1/2 The 46th meeting of the JCRB

Dr Milton pointed out that due to the considerably high level of challenges for the organization of the 27th meeting of the CGPM as a hybrid event in 2022, the September meeting of the JCRB will not take place this year.

Therefore, the JCRB Executive Secretary will circulate appropriate options for dates of the 46th meeting of the JCRB at the BIPM in week beginning 13th March 2023.

12.3 Reading of the Resolutions, Recommendations, and Actions

The following Resolution and Action of the JCRB with respect to agenda item 7.1 and 6, respectively, were read out and agreed:

Resolution JCRB/45-1: The JCRB noted that the RMOs have progressed successfully with a mix of in-person, online and hybrid periodic reviews of quality management systems of the institutes in their regions. The JCRB encouraged the RMOs to further develop these review routes and keep to the 5-year review period. Exceptionally, where this is not possible, they may extend the validity of these QMSs subject to a case-by-case evaluation by the RMO concerned. This extension of validity shall be for a period not exceeding one year. The power to grant such extensions will be re-evaluated at the time of the 46th meeting of the JCRB.

Action JCRB/45-1: The JCRB noted that the RMOs have submitted reports to the JCRB on the status of the quality management systems of the institutes in its regions using a variety of different formats and content. The JCRB reminded the RMOs that the expected content is outlined in CIPM MRA-G-12 Section 5. To simplify the reporting obligation, the JCRB requests the JCRB Executive Secretary to draft a template and to circulate it to all RMOs for their comments in 3 months' time.

Before closing the meeting Dr Milton took the opportunity to thank two BIPM members, Dr Susanne Picard and Mr Andy Henson for their support of the JCRB over many years. Dr Picard will retire at the end of September 2022 and Mr Henson at the end of February 2023. For both, the 45th meeting of the JCRB was the last one they attended as active BIPM members. All delegates expressed their warm gratitude to the two of them.

The 45th meeting of the JCRB was closed by the Chairperson on day-2.