

Report of the 43rd Meeting of the JCRB

Held on 15 – 17 March 2021

Online

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Participants

BIPM / CIPM

Dr Martin Milton
Dr Sten Bergstrand
Mr Andy Henson
Dr James Olthoff, CIPM representative to JCRB
Dr Susanne Picard

AFRIMETS

Dr Wynand Louw
Prof. Mohamed Amer
Dr Noha Khaled
Mr Abdelkarim Mallat
Mrs Lerato Ntatamala

APMP

Mr Xiang Fang
Dr Victoria Coleman
Dr Jinyuan Li
Dr Ping Yang
Ms Rugkanawan Wongpithayadisai

COOMET

Dr Valery Hurevich
Dr Anna Chunovkina
Dr Sergei Golubev
Ms Nino Mikanadze
Prof. Pavel Neyezhmakov

EURAMET

Mr Hans Arne Frøystein
Dr Miruna Dobre
Dr Kai Stoll-Malke
Dr Julien Vuillemin-Toledo

GULFMET

Mr Saleh Al Rumaihi
Prof. Amina Albastaki Zainal
Dr Ismail AlFaleh
Mrs Asma Al Hosani
Mr Omar Kanakrieh

SIM

Dr José Salvador Echeverría-Villagómez
Ms Sally Bruce
Dr Lisa Karam
Mrs Claudia Santo
Dr Claire M. Saundry

Guests: Ms Georgette Macdonald (NRC, item 12.2), Dr Antonio Possolo (NIST, item 12.3)

Like the preceding meeting, the 43rd meeting of the JCRB was conducted as a series of daily 2-hour online sessions, held between 12.00 and 14.00 (UTC) to minimize difficulty for participants and to provide the best possible conditions for a meeting with global attendance. Presented here in the order announced in the meeting call, the actual sessions were conducted with items 1 through 6 plus 8 on the first day, items 11 and 12 (followed by a closed session related to item 13) on the second day, and items 7, 9, 10, 13, 14 and 15 on the third day.

1. Welcome by the Chairman and approval of the agenda

The JCRB Chairperson, Dr Milton opened the meeting and presented the Agenda.

The CIPM representative Dr Olthoff suggested to add a discussion of GULFMET's status as RMO in the JCRB as a closed issue at the end of Day 2, adding the outcome as a new item 13 on the Agenda. The suggestion was unanimously accepted, and the updated numbering is reflected in this meeting report.

2. Confirmation of delegations' representatives with voting rights

The RMO delegations were presented by their senior participants and the delegates with voting rights were confirmed without alterations (indicated as underscored in the list of participants).

3. Approval of the minutes of the 42nd meeting of the JCRB

The JCRB Executive Secretary, Dr Bergstrand confirmed that the Meeting minutes of the 42nd meeting had been amended with the approval and publication dates of the CIPM MRA documents that had been decided after the meeting, and that no other changes had been made since the first circulation of the minutes. The minutes were approved.

[The report of the 42nd JCRB meeting is available on the unrestricted BIPM website

<https://www.bipm.org/en/committees/jc/jcrb>

4. Review of pending actions

Action 42/1 requesting the RMOs to review the status of RMO Key and Supplementary comparisons that have not been completed in 5 years is summarized in Table 1 and further addressed in item 9.

Table 1. Comparisons older than 5 years in response to Action 42/1

	>5 YRS JCRB42		ADDED		MOVED IN LIST		STATUS QUO		EXITED		>5 YRS JCRB43	
	KC	SC	KC	SC	KC	SC	KC	SC	KC	SC	KC	SC
AFRIMETS	1	1	-	1	-	-	1	-	-	1	1	1
APMP	16	18	7	3	4	2	11	6	1	10	22	11
COOMET	4	12	1	6	-	2	2	9	2	1	3	17
EURAMET	9	12	1	3	7	10	1	-	2	5	8	10
SIM	5	22	-	3	-	1	5	13	-	8	5	17

Action 42/2 concerning the ad hoc Task Group established in Action 41/1 to formulate a proposal on QMS reporting requirements to the JCRB remains open and is reported in agenda item [12.3](#).

Action 42/3 concerning a Task Group established to technically review the statistical criteria in CIPM MRA-G-11 reported progress in agenda item [0](#).

5. Comments on the BIPM progress since the 42nd JCRB meeting

Mr Henson presented the BIPM report. He said that Estonia became a Member State (State Party to the Metre convention) on 19 January 2021 and Cambodia an Associate of the CGPM on 1 January 2021 while Zimbabwe may be excluded due to outstanding debts (confirmed 6 April, Zimbabwe ceased to be an Associate of the CGPM as of 1 January 2021). The engagement of the 258 institutes participating in the CIPM MRA is shown in [Table 2](#).

Table 2. CIPM MRA engagement September 2020 - February 2021

	MEMBER STATES	ASSOC	NMI	DI	IO	CIPM MRA	LOGO USERS
STATUS	63	39	102	152	4	258	127
DIFF.	+1	-1	0	-	-	-1	+3

He said that applications for the fourth cycle of the "BIPM–TÜBİTAK UME project placements" are welcome with a deadline for registration 30 April 2021 and that the program must be carried out whilst respecting Covid-19 measures, including the possibility to delay placements if necessary.

The Covid-19 pandemic has also had an impact on BIPM activities. Considerable effort has been put into launching new e-learning activities.

Dr Milton specifically mentioned CCTF activities concerning and extending the generation of UTC, and the CIPM conference on the Digital SI, which attracted 651 participants.

Related to the digital evolution of the SI, Dr Dobre volunteered and was assigned to formulate an Action to collect the RMOs' contact points for digital transformation.

Related [Action 43/1](#)

All RMOs to communicate to M. Dobre (miruna.dobre@economie.fgov.be) the email addresses of contact persons in order to exchange information on digital transformation by the end of March.

Action 43/2

The JCRB requests the JCRB Executive Secretary to incorporate the two minor editorial changes to CIPM MRA-P-11 and CIPM MRA-G-13 and publish them on 31st March. Versions of the documents with tracked changes will be circulated to the RMOs for information.

Action 43/3

The Task Group established in Action 42/3 will prepare a short paper which proposes specific changes to CIPM MRA-G-11 and provides justification for each change that

explains how the operation of the MRA will be improved. The paper shall be sent to the JCRB Executive Secretary before 30 April for circulation to the RMOs. Comments from the RMOs on the report will be requested by 15 July to allow the Task group to prepare a consolidated proposal by 15 August for submission to the 44th JCRB meeting.

Action 43/4

The ad hoc Task Group established in Action 41/1 to submit its proposal (with tracked changes) to the published version of CIPM MRA-G-12 and related changes CIPM MRA-P-11 to the JCRB Executive Secretary by 15 April. The JCRB Secretary will circulate to all RMOs for comment by 15 June. The ad hoc TG to prepare a consolidated proposal for submission to the JCRB no later than 15 August.

Action 43/5

Following the finalization of EURAMET.RI.32.2019 on the JCRB CMC website, the JCRB Executive Secretary shall close the site for all other users except "tcguest". Upon closure, the JCRB CMC website will remain available but not linked from the BIPM website.

Resolution 43/1

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.

Recommendation 43/1 (agreed by post-meeting correspondence on 27 April)

The JCRB agrees that GULFMET fulfils all requirements described in CIPM MRA-P-12 Appendix B, section B1, and recommends the CIPM to admit GULFMET as a full member of the JCRB, with a voice and the right to vote.

6. Comments on the report from the CIPM

Dr Olthoff recalled the long-running cooperation with ILAC and informed the JCRB about progress with a possible update of the Memorandum of Understanding (MoU) in the near future. He also listed progress with other MoUs with the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC), the International Organization of Legal Metrology (OIML) as well as the Consultative Committee for Units (CCU) cooperation with the International Mathematical Union (IMU).

7. World Metrology Day

Mr Henson showed the poster for the coming World Metrology Day 2021: Measurement for Health, which was designed by SASO in association with GULFMET and expressed his appreciation for the good cooperation in its making.

He recalled that in accordance with the cycle, COOMET should be responsible for the 2022 event (further contacts to be taken in the second half of the year).

8. Comments on the RMO reports to the JCRB including status of RMO Quality Management Systems

8.1. AFRIMETS

Dr Louw reported that the AFRIMETS yearly report mainly concerned QMS development and that no General Assembly (GA) will be held this year due to the Covid-pandemic.

8.2. APMP

Dr Yang reported that the APMP meetings had been conducted in a series of 23 sessions.

In a comment to SIM's presentations (8.6) APMP informed that their trainings and workshops are open also to other RMOs and considered it both possible and favorable to improve sharing of these resources.

8.3. COOMET

Dr Hurevich commented on the COOMET report. Mr Frøystein asked for the COOMET strategy documents and the committee was informed that they will be placed on the COOMET website. Dr Dobre asked about the status of work on Digital Calibration Certificates and Prof. Neyezhnikov hoped to be able to progress with EURAMET on the subject in relation to the information given in JCRB 42.

8.4. EURAMET

Mr Frøystein reported on the EURAMET strategy towards 2030, which will be published following its online GA 7-11 June and that it incorporates a research program that will be open to other RMOs under special provisions.

Concerning the readmission of the European Joint Research Centre (JRC) to EURAMET, the process is under way with EURAMET Technical committees in Chemistry and Ionizing radiation respectively. The JRC will not be able to present their quality management system on the ordinary EURAMET QMS meeting in April.

8.5. GULFMET

Mr Kanakrieh presented the GULFMET report and thanked specifically NIST for support to establish Chemical metrology facilities at EMI in Bahrain. The GULFMET GA had been made online with the next half-yearly meeting to take place the week starting 20 June.

Ms Al Hosani further commented on the QMS development in GULFMET.

8.6. SIM

Dr Echeverria reported on continuing activities with the SIM stakeholders and mentioned that Guatemala is now included and that there is a new DI in Uruguay. Further, that workshops had been held on the transition of the International Temperature Scale as well as on the transformation to the new kilogram.

Ms Bruce reported from the SIM QS technical forum, which holds meeting twice a year. She also recalled that the US National Oceanic and Atmospheric Administration (NOAA) and the International Atomic Energy Agency (IAEA) report their quality management systems to SIM. The

past year's assessments had been done remotely and a webinar had been held. Several problems had been encountered, particularly related to poor infrastructure and limited bandwidth for communication. These problems motivated the proposal to be discussed under item 11.

9. Comments on the KCDB report

Dr Picard commented on the KCDB report and noted the first-ever CMC publications for GULFMET in Time and Frequency, and for CARICOM in Mass.

Key and Supplementary comparisons appear to be levelling out at around 30 new registrations per year. Furthermore, related to Action 42/1 and Table 1, the number of supplementary comparisons older than five years, which has been above 60 from the KCDB report to JCRB 37 and onwards, is as of 15 March less than 40 (differences in numbers between this number and Table 1 are likely to reflect an offset in report dates; the KCDB reports always referring to the status at last February and 31 August).

10. Comments on the status of CMC submissions and review (including future of website)

Dr Bergstrand reported that the transition to KCDB 2.0 was nearing its end and that the period since October 2019 had been hard work but essentially smooth. In addition to instruction videos and documents, various webinars, technical exchanges and e-learning courses have proved valuable to introduce users to the process of taking part in the CMC publication process. New procedures have been developed when required, most of which are available through the KCDB Help and FAQ functions. He also mentioned that all EURAMET TC-L CMCs have successfully been transformed to quantity-based equations in place of numerical equations, and that other RMOs and metrological areas wishing to make the same transition should contact the KCDB Office.

He gave a brief overview of processing times for the 809 CMC sets on the old platform, as well as the 326 individual CMCs that have gone through the full submit, review, and publication process in KCDB 2.0. While noticing that long-term, "problem" CMCs have so far had little chance to make impact on the data, the recorded time in progress have been reduced to half the time in JCRB review as compared to the old website (326 CMC lines at an average time of 93 days compared to 809 CMC sets at an average time of 188 days). More detailed input concerning the Intra-RMO and JCRB process times, presented country-wise and sorted by RMO as well as by metrological areas, were made available to the RMOs for further analysis and voluntary actions.

Dr Bergstrand recollected Resolution JCRB/42-5 that the JCRB website will close no later than 30 June 2021. At the time of the meeting, there were four approved CMC sets, one waiting for approval and one still in review. He reported that the one in review was active and that the submitting RMO had suggested that it be progressed on the platform no later than 30 March or deleted. (At the time of writing this meeting report, the CMC in review has been confirmed by the reviewing RMOs as ready for approval and will soon be submitted).

On closure, the JCRB website will no longer be linked from the BIPM website and the possibility to perform actions on the CMCs on the JCRB CMC website will be withdrawn. For reference purposes during an indefinite time, the URL:

<https://www.bipm.org/JCRBCMCs/>

will remain available for users with the credentials

Login name: tcguest

Password: tcontact

[Related [Action 43/5](#)]

11. Remote Quality systems peer-review

Ms Bruce referred to item [8.6](#) as well as the SIM proposal for the JCRB to approve an extension of 12 months for all RMO-approved quality management systems set to expire in calendar years 2020 and 2021. She said it related to difficulties encountered while performing reviews remotely. She also informed that several institutes in SIM were not running at full capacity due to Covid-19 related restrictions and asked the other RMOs for an update in that respect (listed below in alphabetical order).

- AFRIMETS relies to a significant degree on accreditation and Dr Noha informed that the applied combination of remote and physical QMS assessments are considered to be working well. In instances where communications have been poor, assessments have been conducted by exchanging videos – noting that it is not the same as ‘live’ visits but works satisfactory.
- APMP also works in close connection with local accreditation bodies and suggested that remote assessments are the preferred solution compared to extending the validity of QMS assessment without review.
- COOMET through Ms Mikanadze informed that they had successfully conducted four full assessments utilizing a combination of remote and on-site technical reviews.
- EURAMET had similar experiences as SIM concerning communication problems when doing certain remote assessments and supported the proposal.
- GULFMET is in an initial state and had not experienced such problems yet, but foresaw to follow the guidelines issued by the JCRB.
- SIM had applied similar methods as AFRIMETS and although now being more successful were still working with the backlog from the November 2020 meeting. The catching up was reported to be up to speed, and the process likely to be balanced in time for the September meeting of the JCRB.

Summing up the general impression of the RMOs that remote QMS review processes were now operational and that efforts should continue to get back on par rather than to unduly push assessments forward in time, Dr Milton suggested the addition of some words to the original proposed resolution in order to encourage continued efforts in the RMOs with reviewing the QMSs. The extended text was unanimously agreed.

[Related [Resolution 43/1](#)]

12. CIPM MRA documents and matters arising from them

12.1. Comments on the update

Dr Bergstrand said that the new CIPM MRA documents (G-1x and P-1x series) were launched on 11 January and had been well received by the community. He confirmed that the objective to present the information in them more coherently appeared to have been successful.

Nevertheless, in CIPM MRA-P-11 the carried-over form “Authorization to use the CIPM MRA Logo” has proved to be redundant, and in CIPM MRA-G-13 an explicit instruction to describe the changes made in the commenting tool when modifying a CMC was proven necessary. Further, a question concerning an extension to the “Mickey Mouse chart” (Fig.1 in CIPM MRA-G-11) came in after the document series had been approved.

The proposed changes to the documents were accepted by the RMOs. Following the presentation of item 12.2, the request from a single user to modify a figure that has been in use for 20 years did not merit a new version (as it will be included in a future update).

[Related [Action 43/2](#)]

12.2. Report from the CIPM MRA G-11 Task group on statistics

Dr Possolo was invited to give a detailed presentation of the work conducted by the Task Group formed by Action 42/3 and the preliminary report written since JCRB 42. The work was well received by the RMOs.

Dr Louw briefly spoke in his capacity of current CIPM President and suggested that, in addition to the RMOs, the CCs be involved in the review of the report and additions to the CIPM MRA-G-11. Dr Olthoff noticed that the work touches upon both the technical CCs in that it relates to data analysis, and at the same time as it has to do with the implementation of the CIPM MRA, which is the role of the JCRB.

He therefore suggested that a more structured process be formalized in which the JCRB's role to suggest and implement changes to the CIPM MRA becomes clearer in relation to the technical CCs' role to address specific scientific issues. Following some discussion, Dr Olthoff, Dr Louw and Dr Bergstrand were assigned to formulate an Action towards the next JCRB meeting. In the discussion, the steps and gateways outlined in [\[Related Action 43/3\]](#)

Table 3 were proposed as a preliminary plan and the related [Action 43/3](#) was formulated by email correspondence and circulated. It was approved after the meeting.

[Related [Action 43/3](#)]

Table 3. Nominated route for the G-11 proposal (subject to date changes and gateway decisions)

WHEN	WHO	WHAT
2021 April	G-11 TG	1st report
2021 July	RMOs	Review
2021 August	G-11 TG	1st revision
2021 September	JCRB	Action/Resolution/Recommendation
2021 October	CIPM	Distribution for consultation
2023 March	CCs	Respond
2023 June	G-11 TG	2nd revision
2023 September	JCRB	Action/Resolution/Recommendation
2023 October	CIPM	Decision

12.3. Report from the CIPM MRA G-12 Task group on quality management systems

Ms Macdonald commented on the Task Group report and the nine points submitted to the meeting. The implications of RMO QS TG/WG acting to either “approve” or “accept” the management systems of member NMIs were discussed at length. Consensus could not be reached – apparently because of different processes applied both within and between the RMOs.

As the discussion mainly concerned expressions used after two rounds of RMO reviews, which were followed by the JCRB’s approval in December 2020 and the document series publication in January 2021, Dr Milton asked for the Task Group’s position on a motion in the RMOs’ reporting requirements related to establishing confidence in each other’s QS reviews as formulated in Actions 41/1 and 42/2. Ms Macdonald said that the members of the Task Group had reached consensus that no changes were required in that respect.

The Task Group was assigned to prepare a consolidated proposal for the 44th meeting of the JCRB.

[Related [Action 43/4](#)]

12.4. Car park

Dr Milton reminded participants of the “Car park” as a repository for ideas that could further improve the CIPM MRA, but that the ideas would need to be tabled again at the JCRB for discussion before incorporation in the CIPM MRA documents. As no such proposal for motion had been received, the participants agreed that no discussion was needed.

13. GULFMET standing as an RMO in the context of the CIPM MRA

Following an incamera discussion between the five RMOs with voting rights at the end of the meeting’s second day, the third day opened with Dr Olthoff giving a summary of the previous day’s discussion. He noted the positive response to GULFMET’s technical development and engagement in CIPM MRA activities as reflected in Table 4, and that no technical issues had been raised by the RMOs in the discussion.

He said that the remaining concerns amongst the voting RMOs concerned the GULFMET bylaws, particularly relating to the status of associate members in the RMO. As the voting RMOs had not been able to find the bylaws outlining this aspect on the GULFMET website at short notice, they requested clarification. Mr Kanakrieh confirmed that the bylaws, which give the associate members full right to vote and participate in GULFMET activities, are available and translated to English on the GULFMET website. To facilitate the search, Mr Kanakrieh was requested to send the related documents to the Executive Secretary for further circulation among the voting RMOs.

Table 4. KCDB record of comparisons including GULFMET members (GULFMET-organized in parentheses) and published GULFMET CMCs.

	AUV	EM	L	M	PR	QM	RI	T	TF
KC	1	7 (2)	3	4 (2)	2	1	0	2 (1)	1
SC	1	11 (11)	4 (2)	9 (5)	0	0	0	2 (2)	2 (1)
CMC	0	0	0	0	0	0	0	0	4

Following the meeting, the requested bylaw documents were informed as being available at <https://www.gulfmet.org/document-and-guidelines>, with identifications:

- GULFMET Organizational structure (BD-101205-02)
- GULFMET TCs Guide - Technical work procedures (TC-153604-01)
- TC QS Guide - Technical work procedures (TC-153604-02)

GULFMET further confirmed that at technical committee level GULFMET associate members participate with the same rights as full members of GULFMET, including the right to vote in the TC.

Given the overall positive response from the voting members and the prospect to have the remaining issues resolved, Dr Olthoff expressed his preference to receive the JCRB's recommendation for GULFMET's future standing in time for the 110th CIPM meeting (22–24 June). Prof. Neyezhnikov noted that the time between receiving the question and being asked to issue a JCRB Recommendation had been rather short and requested more time to analyze the available information. Following the usual JCRB time frame of four weeks preparation for deciding on a motion, a Draft recommendation was worded for agreement by correspondence. Dr Olthoff said that the CIPM would need the recommendation no later than 7 June and based on the circulation date of the requested GULFMET documents to the JCRB representatives, the deadline for the RMOs' feedback on the Draft recommendation was set to 23 April.

For general purposes, it was recalled that the closed discussion agreed that the CIPM MRA-P-12 B1 (subclause 5) "technical competence required to participate in Consultative Committees activities" is interpreted as relating to CIPM MRA matters in the appropriate working groups, i.e. not necessarily including research activities within the CC main frame. Also, that following CIPM MRA-P-12 B2.3, voting rights on CMCs are granted one technical area at the time and independent of voting rights in the JCRB.

(While completing [Table 4](#) for the meeting minutes, it was realized that contacts should be established between GULFMET and CCAUV-RMOWG, which now are in place.)

[Related [Recommendation 43/1](#)]

14. Any other business

Dr Picard presented an Application Programming Interface (API) which had been applied to the KCDB and foreseen to be made available to logged-in users in a not-too-distant future.

15. Next meetings and meeting closure

15.1. 44th meeting of the JCRB

While noticing the difficulties to foresee the evolution of Covid-19 and any related measures, it was decided to hold the 44th meeting online (14 – 16 September).

15.2. 45th meeting of the JCRB

The 45th JCRB meeting is planned for the week starting 14 March 2022. Detailing locations for the meeting was considered speculative and hence will be considered at the 44th meeting. With respect to meeting arrangements in 2022, Dr Milton reminded the JCRB that 2022 will be a CGPM year which normally means that the JCRB only meets once.

16. Actions, Recommendations, and Resolutions

Action 43/1

All RMOs to communicate to M. Dobre (miruna.dobre@economie.fgov.be) the email addresses of contact persons in order to exchange information on digital transformation by the end of March.

Action 43/2

The JCRB requests the JCRB Executive Secretary to incorporate the two minor editorial changes to CIPM MRA-P-11 and CIPM MRA-G-13 and publish them on 31st March. Versions of the documents with tracked changes will be circulated to the RMOs for information.

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The Task Group established in Action 42/3 will prepare a short paper which proposes specific changes to CIPM MRA-G-11 and provides justification for each change that explains how the operation of the MRA will be improved. The paper shall be sent to the JCRB Executive Secretary before 30 April for circulation to the RMOs. Comments from the RMOs on the report will be requested by 15 July to allow the Task group to prepare a consolidated proposal by 15 August for submission to the 44th JCRB meeting.

Action 43/4

The ad hoc Task Group established in Action 41/1 to submit its proposal (with tracked changes) to the published version of CIPM MRA-G-12 and related changes CIPM MRA-P-11 to the JCRB Executive Secretary by 15 April. The JCRB Secretary will circulate to all RMOs for comment by 15 June. The ad hoc TG to prepare a consolidated proposal for submission to the JCRB no later than 15 August.

Action 43/5¹

Following the finalization of EURAMET.RI.32.2019 on the JCRB CMC website, the JCRB Executive Secretary shall close the site for all other users except "tcguest". Upon closure, the JCRB CMC website will remain available but not linked from the BIPM website.

Resolution 43/1

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.

¹ The JCRB CMC website <https://www.bipm.org/JCRBCMCs/> was disengaged 23 April 2021

Recommendation 43/1 (agreed by post-meeting correspondence on 27 April)

The JCRB agrees that GULFMET fulfils all requirements described in CIPM MRA-P-12 Appendix B, section B1, and recommends the CIPM to admit GULFMET as a full member of the JCRB, with a voice and the right to vote.