

Report of the 37th Meeting of the JCRB

Held on March 15 and 16, 2017

Sevres, France

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Participants

BIPM-CIPM

Dr. Martin Milton.....	(Chairman) BIPM
Mr. Andy Henson.....	(Director, BIPM ILC Department) BIPM
Mr. Nikita Zviagin.....	(Executive Secretary) BIPM
Dr. Barry Inglis	CIPM
Dr I. Castelazo.....	CIPM

Delegations

Dr. Wynand Louw	AFRIMETS representative to the JCRB
Prof. Noha Khaled.....	AFRIMETS
Mr. Dennis Moturi	AFRIMETS
Ms. Zakithi Msimang	AFRIMETS
Dr. Toshiyuki Takatsuji	APMP representative to the JCRB
Dr. Takehiro Morioka	APMP
Dr. Peter Manson	APMP
Dr. Isao Kishimoto.....	APMP
Dr. Takashi Usuda	APMP
Dr. Pavel Neyezhnikov.....	COOMET representative to the JCRB
Dr. Valery Hurevich.....	COOMET
Dr. Vladimir Krutikov.....	COOMET
Mr. Toktabek Tokanov.....	COOMET
Dr. Nikolai Zhagora.....	COOMET
Dr. Beat Jeckelmann	EURAMET representative to the JCRB
Dr. Wolfgang Schmid	EURAMET
Dr. Duncan Jarvis	EURAMET
Dr. Enver Sadikoğlu.....	EURAMET
Mr. Saleh Al-Remaihi	GULFMET representative to the JCRB
Eng. Omar S Kanakrieh	GULFMET
Dr. Majed Alharthi	GULFMET
Ms. Amina Zainal	GULFMET
Dr. Claudia Santo	SIM representative to the JCRB
Dr Héctor Laiz	SIM

Dr. Alan SteeleSIM

Dr. Georgette Macdonald.....SIM

Dr. James Olthoff.....SIM

Also in attendance

Mr Sergei Komissarov.....COOMET

Mr Marat Konkanov.....COOMET

1. Welcome by the Chairman and approval of the agenda

M.Milton, Director of the BIPM and Chairman of the JCRB, welcomed the delegates to the 37th meeting of the JCRB. The members of the JCRB delegations introduced themselves.

The agenda of the 37th JCRB meeting was presented and approved without amendments.

2. Approval of the minutes of the 36th meeting of the JCRB and review of pending actions

The minutes of the 36th meeting of the JCRB were approved without amendments.

M. Milton reported on the status of actions agreed to at the 36th JCRB meeting:

- Action 36/01: Membership list was provided to RMOs by the JCRB Executive Secretary in December 2016.
- Action 36/02: The presentation of the JCRB response to the CIPM MRA was delivered to the 2016 NMI Directors meeting.
- Action 36/03: The draft RACI analysis will be discussed in agenda item 5.
- Action 36/04: Status of KCDB 2.0 will be discussed in agenda item 8.
- Action 36/05: a draft document reviewing “best practices” in formulation and submission of CMCs will be discussed in agenda item 6.
- Resolution 36/2: The host and place of the 38th meeting of the JCRB will be discussed in agenda item 12.

3. Report from BIPM on progress since the 36th JCRB meeting

3.1. World Metrology Day, Members and Associates, update on the status of the BIPM QMS

A. Henson reported on developments at the BIPM since the 36th meeting of the JCRB. The Important points of the report included:

- No changes in Members and Associates since the 36th JCRB meeting;
- Having met the CIPM criteria for encouragement to become Member States, three Associates (Bolivia, Bosnia Herzegovina and Montenegro) have been considered by the CIPM and on their instruction formally encouraged by the BIPM to accede and become Member States. Should they choose to remain as Associates they will reach step one on the ‘escalator’ (graduated increasing subscriptions) in 2018;
- The theme for the 2017 World Metrology Day will be “Measurements for transport”, and the contributing NMI is INM from Colombia;
- In 2018 World Metrology Day launches the information campaign on redefinition of SI. The partner NMI will be selected by EURAMET who are proposing to run a competition to identify which NMI (or NMIs, given the importance of the WMD theme the possibility of more than one NMI is being considered by EURAMET) will

partner. It was noted that as WMD 2018 precedes the CGPM, and thus redefinition cannot automatically be assumed, care will be needed with the poster and message.

- 1st July 2017 is a cut-off date for papers to be accepted for publication with data to be considered for the CODATA-2017 adjustment.
- JCRB Action 30/2 requires RMOs to have their Guidelines on Quality System and CMC reviews available from their websites and corresponding links are then available at BIPM website. This is case for all RMOs except for GULFMET. The JCRB agreed to the following action:

Action 37/01: *GULFMET to make available their guidance documents on QS and CMC review from their website and to provide a link to BIPM so it can be included on the JCRB webpage (according to JCRB Action 30/2).*

- Work continues on the revision of ISO/IEC 17025. The DIS is out for comment and vote, which will close 22 March 2017. The WG44 Drafting Group will meet in early May 2017, and the full WG will meet in June 2017. The decision will be taken in June as to whether an FDIS will be required. The aim is still to publish in late 2017.

[The BIPM report is available on the restricted-access JCRB working documents webpage, listed as [JCRB-37/03.01](#)]

A. Henson gave a presentation reporting on the status of the BIPM QMS. This included BIPM measurement services activity statistics, numbers of QMS documents, dates and status of peer and internal reviews, status of preventive/corrective actions raised internally and from complaints, customer feedback, and continuous improvement. The last global peer review took place on 8-9 November 2016. It was conducted by Dr. Enver Sadikoğlu, EURAMET TC-Q Chair. The comments were minor and the BIPM draft responses to global peer review findings were presented.

[The BIPM QMS report is available on the restricted-access JCRB working documents webpage, listed as [JCRB-37/03.02](#)]

3.2. Update on BIPM CBKT program

C. Kuanbaev reported on progress of the BIPM Capacity Building and Knowledge transfer (CBKT) Programme. He talked about the Programme goals and activities, demonstrated the BIPM model for laboratory-based CBKT, and reported also about all initiatives: completed, ongoing and future. For future 2017 "Sound beginning in the CIPM MRA" course a more detailed analysis of applications was presented as the RMOs will be shortly involved in the candidate selection process.

[The CBKT course update report is available on the restricted-access JCRB working documents webpage, listed as [JCRB-37/03.03](#)]

4. Report from the CIPM

B. Inglis delivered a report from the CIPM. Three new members were provisionally elected to the CIPM in December 2016: Dr M. L. Rastello (Italy), Dr H. Laiz (Argentina) and

Dr M. Sene (United Kingdom). Work on specific issues in the CIPM is now realised with the use of targeted subcommittees and working groups. B.Inglis presented the document *“Discussion points from the meeting of the CIPM ad hoc Working Group on Implementing the Recommendations from the Review of the CIPM MRA”* that took place at BIPM at 13-14th of March 2017, and gave the overview of it, including presenting the report of the WG, noting that the WG had produced a summary of actions for CC Presidents.

The JCRB interest focused primarily around Appendix II ‘*Summary of actions for the JCRB/RMO*’ These actions included encouraging the JCRB:

- to continue to make policy (beyond the review period) and suggestions to facilitate the process of continuous improvement
- to use written papers supporting JCRB agenda points as these can be considered ahead of the meetings with time to allow consultation amongst RMO members, they lead to well informed delegations, and effective discussions at the meetings
- to make best use of the existing links between RMOs and CCs established in the CC RMO WGs, which also help promote a harmonized approach.
- to reflect on, review and revise the ‘*Rules and procedures for the JCRB*’ to reflect the fact that the CIPM member designated to attend the JCRB may be the CIPM Secretary or another designated member of the CIPM, and to better reflect that the JCRB ToR states that the JCRB operates by consensus.
- to ensure that the relationship between CMCs and services are adequately addressed in NMIs Quality Systems.

In the course of discussion JCRB agreed the following action:

Action 37/02: *BIPM to propose amendments to CIPM MRA-D-01 “Rules and procedures for the JCRB” to better reflect that the JCRB Terms of Reference require it to work by consensus, which is the normal modus operandi, and that voting is only used when consensus cannot be achieved.*

[The document “Discussion points from the meeting of the CIPM ad hoc Working Group on Implementing the Recommendations from the Review of the CIPM MRA” with appendices is available on the restricted-access JCRB working documents webpage. listed as [JCRB-37/04.00](#)]

5. RACI analysis of the CIPM MRA review working group recommendations: Action item 36/03

A. Steele led a discussion of a draft RACI (Responsible, Accountable, Consulted and Informed) analysis of the CIPM MRA review working group recommendations. The draft document in Excel format was prepared by a task group of the JCRB in response to Action 36/03 of the 36th JCRB meeting.

Discussion included 4 breakout groups each addressing a theme of the RACI analysis table for 45 minutes. Each group included at least one participant from each RMO. The four groups addressed:

“Governance and Organizational Communication”, “Efficiency and Effectiveness”, “Support for Countries and Economies with Emerging Metrology Systems (CEEMS)”, and “BIPM Operations and Logistics for the KCDB”.

After the break-out session each group reported on its progress. The general opinion was that one 45 minute session was not sufficient time to fully discuss all the corresponding points in the RACI draft document. Further reflection and discussion is required.

A. Steele remarked that he noticed a good level of engagement from the participants in all groups and it was concluded that the work should continue.

[The draft Excel document on RACI Analysis can be found on the restricted-access JCRB working documents webpage as [JCRB-37/05.01](#).]

6. JCRB discussion of “best practices” in formulation of CMCs: Action item 36/05

C. Santo, who leads the Task Team comprising Beat Jeckelmann, Peter Manson, Zakithi Msimang, and Toshiyuki Takatsuji, led a discussion on a draft document reviewing “best practices” in formulation and submission of CMCs, focusing on the ‘broad scope’ challenge. She drew attention to the analysis of Peter Manson, which had been included in the papers. She remarked that the document now is only at the initial stage. The aim of the discussion is to formulate the main objectives and eliminate none crucial issues.

B. Inglis drew the attention of the JCRB to the discussion by the ad hoc Work Group meeting (held immediately prior to the JCRB) where it had been realised that there were different interpretations of what the term ‘broad scope CMC’ and the terms around it meant, and that this is causing confusion. The WG had recommended the following interpretation of terms:

- The term ‘*how far the light shines*’ - is taken to refer to the use of comparisons as the evidence base supporting CMC claims.
- The term ‘*broad scope CMCs*’ - is taken to refer to the possibility of NMIs summarizing their capabilities with the smaller number of CMCs each with a broader scope.
- That the issue of what CMCs should/or should not cover be articulated around the question of whether the CCs’ service category lists are sufficiently detailed to cover the services delivered by the NMIs/DIs participating in the CIPM MRA.
- That it is understood that some RMOs are considering the importance of NMI/DI services where recognition may only be required at regional level.

That the term ‘flexible scope’ has a specialized meaning in accreditation, and is not applicable to the discussion on ‘broad scope CMCs’.

After discussion it was recognised that addressing the ‘broad scope CMC’ challenge required active cooperation with the CCs. A general approach for the Task Group should aim to summarize best practices from different CCs.

Such a consensus will help to focus CCs in a common direction. P. Manson suggested that the JCRB should provide the recommendations for CCs but shouldn’t lay out the rules.

The following action was agreed:

Action 37/03: *The JCRB charged a task group comprising Claudia Santo (convener), Beat Jeckelmann, Peter Manson, Zakithi Msimang, and Toshiyuki Takatsuji with collating the ideas around the possibilities of ‘broad-scope CMCs’ such that they can be considered by the CCs (building on Action 36/05)*

[The background documents related to agenda item 6 can be found on the restricted-access JCRB working documents webpage as [JCRB-37/06.1](#), [JCRB-37/06.2](#)]

7. CIPM MRA documents update

N. Zviagin made a presentation on update of CIPM MRA documents. He presented the list of CIPM MRA documents in which, following the publication of ISO 17034 on 1st of November 2016, references to ISO Guide 34 were to be replaced with references to ISO 17034. The JCRB recommends that all NMIs/DIs operating to ISO Guide 34 complete the transition from the Guide to the new standard no later than November 2019.

Also a number of small changes made to the document CIPM MRA-D-04 “Calibration and Measurement Capabilities in the context of the CIPM MRA” were shown. The changes consisted in updating outdated references, modifying text in order to correspond to the present options of the system for Interregional CMC review, merging two appendices into one. Some further modifications of the text were proposed and approved by the JCRB to improve consistency.

JCRB agreed the following resolution:

Resolution 37/1: *JCRB approves the proposed changes to the suite of JCRB documents, primarily to update the references from ISO Guide 34 replacing them with ISO 17034 (following the publication of that standard in November 2016), and including a number of minor corrections, and instructs the BIPM to update and publish the guidance documents accordingly.*

[The presentation related to agenda item 7 can be found on the restricted-access JCRB working documents webpage as [JCRB-37/07.00](#)]

8. Status of the scope for KCDB 2.0: Action item 36/04

S. Picard reported on the status of the scope for KCDB 2.0. She talked about the current stage of developing the technical specifications, which are well advanced, and demonstrated some principal screenshots from the future system. Her presentation was focused on possibility of integrating numerical search on CMCs into the KCDB 2.0 platform. She also talked about the request from CCL to abandon numerical value equations and instead use quantity equations.

In the course of discussion the general opinion was that the change to numerical data is necessary despite it generating some ‘one off’ increased workload on NMIs. A.Steele suggested finding specialists in programming to automate the process of transition to numerical data as much as possible. S. Picard confirmed that it was already planned to explore this option, as well as any other course of action that could limit the workload on the NMIs. The approach should be based on minimizing handwork and maximizing flexibility of the process. The question of whether there should be a further round of

consultation with CC Presidents on this issue was raised. Finally, given that three CC Presidents were present in the discussions and were supportive, the JCRB agreed that the transition to numerical data is needed and any additional discussion will only slow down the process. The following action was agreed:

Action 37/04: *The JCRB agrees with the proposal made by the BIPM that in KCDB 2.0 the range and uncertainty should, if possible, be in a numerically searchable format, noting that this would require the transform of existing CMC data and charges the BIPM to continue work on developing KCDB 2.0.*

[The summary of functionalities of KCDB 2.0 and the presentation on KCDB 2.0 can be found on the restricted-access JCRB working documents webpage as [JCRB-37/08.00](#) and [JCRB-37/08.01](#)]

9. Highlights to the RMO reports to the JCRB

9.1. AFRIMETS

W. Louw presented the highlights of the AFRIMETS report.

N. Khaled presented the highlights of the AFRIMETS Quality System report.

9.2. APMP

T. Takatsuji presented the highlights of the APMP report.

I. Kishimoto presented the highlights of the APMP Quality System report.

9.3. COOMET

P. Neyezhnikov presented the highlights of the COOMET report, including Quality System.

9.4. EURAMET

B. Jeckelmann presented the highlights of the EURAMET report.

E. Sadikoğlu presented the highlights of the EURAMET Quality System report.

9.5. GULFMET

O. Kanakrieh presented highlights of the GULFMET report, including Quality System.

9.6. SIM

C. Santo presented highlights of the SIM report.

G. Macdonald presented the highlights of the SIM Quality System report.

[The individual RMO reports and presentations are available on the restricted-access JCRB working documents webpage, listed as [JCRB-37/09.1.1](#), [JCRB-37/09.1.2](#), [JCRB-37/09.1.3](#), [JCRB-37/09.1.4](#), [JCRB-37/09.2.1](#), [JCRB-37/09.2.2](#), [JCRB-37/09.3.1](#), [JCRB-37/09.3.2](#), [JCRB-37/09.4.1](#), [JCRB-37/09.4.2](#), [JCRB-37/09.5.1](#), [JCRB-37/09.5.2](#), [JCRB-37/09.6.1](#) and [JCRB-37/09.6.2](#) respectively.]

10. KCDB report

S. Picard presented a summary of the semi-annual KCDB report to the JCRB. The report included the following points:

- As of 31 March 2017, the KCDB has a total of 25 896 CMCs, with 19 699 in physics (including ionizing radiation) and 6 227 in chemistry. Over the last six months 39 countries published CMCs. The total number of CMCs increased by 310 over the

last 12 months, corresponding to a relative increase of 1 % evenly distributed over Chemistry and Physics.

- Bosnia Herzegovina provided their first CMCs in Time-Frequency and Thermometry, Macedonia published their first CMCs in Thermometry and Moldova registered their first CMCs in Ionizing Radiation.
- 231 CMCs are in grey-out status (temporarily removed from the KCDB), compared with 173 CMCs in this status as of 1 March 2016. There were no reinstatements since the last JCRB Meeting. There presently are no greyed-out CMCs in the 1-year reinstatement period. CMC that will reach the 5-year greyed-out limit in the next 6 months are Mexico (3 CMCs in PR) on 15 March 2016 and Finland (6 CMCs in M) on 28 August 2017. CMC that will reach the 5-year greyed-out limit in the next 12 months are France (1 CMC in M) on 25 November 2017, Argentina (1 CMC in L) on 29 November 2017, Belgium (6 CMCs in TF) on 5 February 2018.
- As of 1 March 2017, there were 1467 total comparisons in the KCDB (970 KCs, 497 SCs). Since the 36th JCRB, there have been 34 comparisons registered as new: 19 KCs and 15 SCs. Reports were published for 49 comparisons since the 36th JCRB.
- The number of comparisons seems to have reached a steady yearly increase at around +80. The total ratio of Supplementary Comparisons, 1 out of 5 in 2006, has progressively increased to 1 out of 3.

[The KCDB report is available on the restricted-access JCRB working documents webpage listed as [JCRB-37/10.0](#) and on the unrestricted BIPM website at <http://www.bipm.org/jsp/en/ViewKCDBReport.jsp>].

11. Status of CMC submissions and review / issues from Consultative Committees

N. Zviagin made a presentation on the status of CMC submissions and review, and operation of the JCRB CMC review. Since the 36th JCRB, 20 CMC sets have been published, 15 CMC sets have been submitted, 2 sets were not approved, and no sets were abandoned. As of 7 March 2017, 24 sets were in the status of “review in progress”. 2 CMC sets had their last update more than 2 years ago, and 4 sets had their last update more than a year ago. RMOs whose CMCs sets were last updated in the first half of 2015 or earlier were asked to take appropriate action to bring the review process to conclusion. It was reported that 4 of the published CMC sets took longer than 200 days for the inter-RMO review; 1 of them took almost a year (350 days). In most cases the longest portion of the review was the posting of the revised file by the submitting NMI/RMO.

In the period since the September of 2016, Inter-RMO review performance (the number of reviews performed according to meeting process deadlines) was 95 % for AFRIMETS, 94% for EURAMET, 87% for GULFMET, 79% for APMP, 76% for SIM and 66% for COOMET. This time, the information on final voting was included into statistics hence the decreasing of results compared with previous time periods. The lack of voting at the final stage was the main reason for loss of review rights (4 of 4 loss of rights for SIM was due

to the lack of final vote). The performance of GULFMET increased significantly compared with the previous period (53 % in September 2016). COOMET has improved its performance, but still has the lowest result.

The percentage of CMC sets submitted without the required confirmation of the QMS evidence decreased but the situation still continues to occur. In the six months since the 36th JCRB meeting, 100 % of CMC sets in QM and T metrology areas were submitted without the confirmation of the QMS evidence. In other areas, all sets were submitted with the required confirmation. Confirmation of QMS evidence is always verified before a CMC set is published. Only 1 CMC set that is currently in review is awaiting the QMS confirmation.

As of 14 March 2017, 99 KCs and 74 SCs are in the category of unfinished and were started 5 years or more ago. In the last six months, 5 KCs and 4 SCs were removed from the category due to being approved. The complete list of comparisons remaining in this category is available in KCDB report.

[The CMC status report is available on the restricted-access JCRB working documents webpage listed as [JCRB-37/11.0](#)].

12. Next meetings

The JCRB agreed to the following resolutions regarding the next three JCRB meetings:

Resolution 37/2: *The 38th meeting of the JCRB will take place on September 13 and 14, 2017 at Bern, Switzerland. The meeting will start in the morning of September 13 2017 and will last two full days if warranted by the Agenda items, otherwise for a full day and a half.*

Resolution 37/3: *The 39th meeting of the JCRB will take place on March 14 and 15, 2018 at BIPM.*

Resolution 37/4: *The decision whether to hold a JCRB meeting in September 2018 will be taken at the 38th meeting of the JCRB in September 2017 (noting that the CGPM will be held in the November 2018). If the meeting is held then this 40th meeting of the JCRB will take place during week 37 (the week beginning September 10, 2018) and will be hosted in Dubai by GULFMET.*

13. Any other business and meeting closure

M. Milton introduced the work of CIPM Task Group for the promotion of the SI. After a short discussion it was decided that despite the fact that 2019 will be the special year for metrology due to the redefinition of SI becoming effective on World Metrology Day in 2019 (assuming the CGPM decides in November 2018), JCRB will not change the regular schedule and World Metrology Day 2019 will be hosted by APMP.

P. Neyezhnikov presented the new COOMET Recommendation "Procedure of organization and publishing the data about calibration and measuring services of COOMET national metrological institute on COOMET web resources" and welcomed all RMOs to read and make comments.

[The presented COOMET Recommendation is available on the restricted-access JCRB working documents webpage listed as [JCRB-37/13.01](#)].

M. Milton read the resolutions, recommendations, and actions. He called the 37th meeting of the JCRB to a closure.

14. Resolutions, Recommendations, and Actions

Action 37/01: GULFMET to make available their guidance documents on QS and CMC review from their website and to provide a link to BIPM so it can be included on the JCRB webpage (according to JCRB Action 30/2).

Action 37/02: BIPM to propose amendments to CIPM MRA-D-01 “Rules and procedures for the JCRB” to better reflect that the JCRB Terms of Reference require it to work by consensus, which is the normal *modus operandi*, and that voting is only used when consensus cannot be achieved.

Action 37/03: The JCRB charged a task group (comprising Claudia Santo (convener), Beat Jeckelmann, Peter Manson, Zakithi Msimang, and Toshiyuki Takatsuji) with collating the ideas around the possibilities of “broad-scope CMCs” such that they can be considered by the CCs.

Action 37/04: The JCRB agrees with the proposal made by the BIPM that in KCDB 2.0 the range and uncertainty should, if possible, be in a numerically searchable format, noting that this would require the transform of existing CMC data and charges the BIPM to continue work on developing KCDB 2.0.

Resolution 37/1: JCRB approves the proposed changes to the suite of JCRB documents, primarily to update the references from ISO Guide 34 replacing them with ISO 17034 (following the publication of that standard in November 2016), and including a number of minor corrections, and instructs the BIPM to update and publish the guidance documents accordingly.

Resolution 37/2: The 38th meeting of the JCRB will take on September 13 and 14, 2017 at Bern, Switzerland. The meeting will start in the morning of September 13 2017 and will last two full days if warranted by the Agenda items, otherwise for a full day and a half.

Resolution 37/3: The 39th meeting of the JCRB will take place on March 14 and 15, 2018 at BIPM.

Resolution 37/4: The decision whether to hold a JCRB meeting in September 2018 will be taken at the 38th meeting of the JCRB in September 2017 (noting that the CGPM will be held in the November 2018). If the meeting is held then this 40th meeting of the JCRB will take place during week 37 (the week beginning September 10, 2018) and will be hosted in Dubai by GULFMET.