

**Report of the 34<sup>th</sup> Meeting of the JCRB**

Held on September 8 and 9, 2015

Astana, Kazakhstan

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## Participants

### BIPM-CIPM

Dr. Martin Milton	(Chairman) BIPM
Mr. Andy Henson	(Director, BIPM ILC Department) BIPM
Dr. Douglas Olson	(Executive Secretary) BIPM

### Kazakhstan State Committee of Technical Regulation and Metrology

Dr. Birzhan Kaneshev	(Chairman) KAZMEMST
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### Delegations

Dr. Wynand Louw	AFRIMETS representative to the JCRB
Prof. Noha Khaled	AFRIMETS
Mr. Dennis Moturi	AFRIMETS
Ms. Zakithi Msimang	AFRIMETS
Dr. Peter Fisk	APMP representative to the JCRB
Dr. Jongseon Park	APMP
Dr. Peter Manson	APMP
Dr. Pavel Neyezhnikov	COOMET representative to the JCRB
Mr. Chingis Kuanbayev	COOMET
Mr. Sergey Komissarov	COOMET
Mr. Vassily Mikhalchenko	COOMET
Mrs. Natalia Sedova	COOMET
Dr. Beat Jeckelmann	EURAMET representative to the JCRB
Dr. Wolfgang Schmid	EURAMET

Dr. Enver Sadikoglu.....EURAMET  
Dr. Robert Edelmaier .....EURAMET  
Dr. Claudia Santo .....SIM representative to the JCRB  
Dr. Alan Steele .....SIM  
Dr. Claire Saundry .....SIM  
H.E. Mr. Nabil A. Jolla ..... (observer) GULFMET  
Mr. Mohammed Ahmed Al Mulla ..... (observer) GULFMET  
Eng. Omar S Kanakrieh ..... (observer) GULFMET

## **1. Welcome by the Chairman and approval of the agenda**

Dr. Birzhan Kaneshev, Chairman of the Kazakhstan State Committee of Technical Regulation and Metrology, welcomed the delegates to Astana, Kazakhstan and opened the 34<sup>th</sup> meeting of the JCRB. Dr. Martin Milton, Director of the BIPM and Chairman of the JCRB, thanked Dr. Kaneshev and his staff for hosting the 34<sup>th</sup> meeting of the JCRB and the making the event a resounding success.

The members of the JCRB delegations were then asked to introduce themselves.

The agenda of the 34<sup>th</sup> JCRB meeting was approved without amendments.

## **2. Approval of the minutes of the 33rd meeting of the JCRB and review of pending actions**

The minutes of the 33<sup>rd</sup> meeting of the JCRB were approved without amendments.

M. Milton reported on the status of actions agreed to at the 33<sup>rd</sup> JCRB meeting:

- Action 32/9 (regarding RMOs providing updated training links for linkage to the DCMAS Network website, open item from 32<sup>nd</sup> JCRB) AFRIMETS, APMP, and SIM have provided links. EURAMET and COOMET stated they will supply links shortly.
- Action 33/1 (regarding BIPM providing yearly updates of its QMS to the RMO that the BIPM most recently presented its QMS to) M. Milton stated that the BIPM will now make yearly status reports on its QMS to the RMO it most reported its QMS to on the five year cycle. The 2015 report is in review by the BIPM and is expected to be sent to EURAMET in October, 2015.
- Action 33/3 (regarding the KCDB office reporting Key and Supplementary Comparisons which are incomplete and were started 5 or more years ago) will be reported under agenda item 9.
- Action 33/4 (regarding the RMOs' presentation at the CIPM MRA review) will be reported under agenda item 8.
- Actions 33/5, 33/6, and 33/7 (regarding revision to documents CIPM MRA-D-02, CIPM MRA-G-03, CIPM MRA-D-06) all were revised and posted.
- Action 33/12 (regarding issue of publication of results with participants who are non-signatories of the CIPM MRA) will be covered in agenda item 13.
- Action 33/13 (regarding discussion of granting GULFMET provisional acceptance as an RMO) will be covered in agenda items 7, 11, and 12.

## **3. Report on progress since the 33rd JCRB meeting; update on revision to ISO/IEC 17025**

A. Henson presented a report on the developments at the BIPM since the 33<sup>rd</sup> meeting of the JCRB and an update on the revision to ISO/IEC 17025. The important points of the report included:

- Lithuania, an Associate of the CGPM since 2001, became a Member State of the BIPM on 16 April 2015; United Arab Emirates became a Member State on 27 April 2015;
- Potential new Member States of the BIPM and Associates of the CGPM;
- Associates encouraged to become Member States;
- The BIPM website has webpages that provide summary information on the RMOs. To confirm that the information on the webpages is accurate and up-to-date, the RMOs need to examine the content and provide updated information. The JCRB agreed to the following action:

**Action 34/1:** *Each RMO will review their RMO/BIPM webpages and provide updated information where necessary to the JCRB Executive Secretary by March 1, 2016.*

- World Metrology Day continues to grow as evidenced by increased country event links and poster language translations each year. VNIIMS is working with the BIPM/BIML on the 2016 poster. The strapline for 2016 will be “Measurements in a dynamic world”. The JCRB agreed to the following action in planning for World Metrology Day in 2017:

**Action 34/2:** *SIM will identify, by March 2016, an NMI within its region to work with the BIPM in developing a poster for World Metrology Day for 2017.*

- Lists of the BIPM secondees and guest workers, and upcoming meetings and events.
- Working group WG44 on revisions to ISO/IEC 17025 has met three times. WG44 has about 80 participants. The CD on the current draft is expected to be circulated in late September or early October, with an aim of publishing in 2017. Key issues in the revision are the imposed structure (in particular the split between resources and processes), the imposed Route A/Route B allowing ISO 9001 as an alternative to the management section of ISO/IEC 17025, and whether the scope of the standard should be expanded to cover “standalone” sampling.

*[The BIPM report is available on the restricted-access JCRB working documents webpage. listed as [JCRB-34/03.0](#)]*

#### **4. Report from the CIPM**

M. Milton delivered a verbal report of the CIPM. W. Louw, a member of the AFRIMETS delegation and also a CIPM member, is the CIPM representative for the meeting. Items reported were the upcoming review of the implementation of the CIPM MRA, reforms to provide sustainability of the BIPM staff pension and provident fund, expectation that the report of the 25<sup>th</sup> CGPM will go to press soon, and that the CIPM Bureau has invited chairs of the RMOs to attend a meeting prior to the 2015 NMI Director’s workshop.

## 5. Highlights of the RMO reports to the JCRB

### 5.1. AFRIMETS

W. Louw presented the highlights of the AFRIMETS report.

### 5.2. APMP

P. Fisk presented the highlights of the APMP report.

### 5.3. COOMET

P. Neyezhnikov presented the highlights of the COOMET report.

### 5.4. EURAMET

B. Jeckelmann presented the highlights of the EURAMET report.

### 5.5. SIM

C. Santo presented highlights of the SIM report.

*[The individual RMO presentations are available on the restricted-access JCRB working documents webpage, listed as [JCRB-34/05.1](#); [JCRB-34/05.2](#); [JCRB-34/05.3](#); [JCRB-34/05.4](#) and [JCRB-34/05.5](#) respectively.]*

## 6. Progress on the BIPM Capacity Building and Knowledge Transfer (CBKT) program and discussion of role of RMOs in CBKT

A. Henson presented a report on progress in the BIPM Capacity Building and Knowledge Transfer program. The origin of the program and its goals were summarized, followed by the status and mechanisms that are being pursued for implementation. Several NMIs and RMOs have already indicated their support for the CBKT.

One of mechanisms is a NIST grant opportunity to which the BIPM applied for funds, and which the BIPM received notice (following the JCRB meeting) that the grant will be funded in full. This mechanism will involve focussed training of up to 30 metrologists from emerging NMIs in implementation and leadership roles in global metrology. Two training courses will be held at the BIPM for two groups of metrologists. “Leaders of tomorrow” will provide training in late 2016 for the next generation of TC and WG chairs, and on piloting comparisons. “A sound beginning” will provide training in 2017 on submitting successful CMCs. Each course will contain an activity called “hitting the target”, which is aimed at training in techniques to ensure that CMCs being developed are of greatest benefit to stakeholders within the country of the NMI/DI. Priority will be given to candidates trainees from SIM and AFRIMETS. Full travel and subsistence of trainees will be covered, with the training being conducted mostly by BIPM staff to be supplemented by experts from RMOs. The BIPM will be looking to the RMOs for assistance on nominating candidates for the training. The JCRB agreed to the following action item related to the NIST-funded program.

**Action 34/3:** *RMOs to establish mechanisms to identify potential candidates to participate in the BIPM CBKT training programs on “leaders of tomorrow” scheduled for*

late 2016) and “a sound beginning” (scheduled for 2017) aimed at training metrologists in leadership and implementation roles in global metrology.

[The report is available on the restricted-access JCRB working documents webpage listed as [JCRB-34/06.0](#)]

## **7. GULFMET presentation and discussion on progress toward provisional acceptance as an RMO, Action 3/13**

N.A. Molla delivered a speech thanking the JCRB for inviting the GULFMET delegation to the meeting and providing GULFMET the opportunity to present their progress made since the 33<sup>rd</sup> JCRB meeting toward becoming an internationally recognized RMO. M.A. Al Mulla made a summary presentation on progress made by GULFMET toward addressing Action 33/13 (which requested evidence of a roadmap and timetable to address requirements for GULFMET to be granted provisional acceptance as an RMO), and O. S. Kanakrieh provided specific details of the status of metrology activities in GULFMET member states Saudi Arabia, United Arab Emirates (UAE), Bahrain, Oman, and Qatar. The presentations pointed out that

- Since the 33<sup>rd</sup> JCRB, the UAE has become a member state of the BIPM and will shortly sign the CIPM MRA;
- NMIs participating in GULFMET as Associate Members (in addition to the seven GSO member states) have been granted the right to vote on resolutions and recommendations of the technical committees;
- Outcomes of the 33<sup>rd</sup> JCRB meeting were reported to the 35<sup>th</sup> GSO Technical Board meeting and the 21<sup>st</sup> GSO Ministerial Council Meeting, after which GSO directed GULFMET member states to: develop national strategies to promote metrology activities, develop plans to interact with other RMOs, speed up processes to join the BIPM, and work urgently with GULFMET to fulfil JCRB requirements;
- GULFMET held a workshop to develop a roadmap and timetable to address requirements to be granted provisional acceptance as an RMO. The roadmap was presented to the JCRB;
- New TC chairs and TC secretaries were selected in mass and related quantities, thermometry, electricity and magnetism, and quality;
- Agreed to start interlaboratory comparisons in gas pressure, mass, and force;
- For each of the member states listed above, GULFMET reported on numbers of technical staff, active metrology areas, status of accreditation, numbers of calibrations and tests, participation in ILCs, and training.

Following the presentation JCRB delegates were given the opportunity to ask questions of GULFMET concerning their report and their oral presentation. GULFMET was asked whether their existing calibration capabilities were available for viewing; GULFMET stated they were currently being updated and will be available on their website shortly. GULFMET was asked about accreditation plans for the NMIs, as none have been accredited to date and only UAE is planned for accreditation later in 2015. They were

asked if their numbering scheme for comparisons follows those used for CIPM and RMO comparisons, and they stated it does not. They were advised that technical assessors should be selected according to guidelines stated in document CIPM MRA-G02, as this will assist them later in receiving recognition of the accreditations by the other RMOs.

Following the discussion, the JCRB Chair thanked the GULFMET delegation for their presentation and attendance at the meeting.

*[The GULFMET presentation is available on the restricted-access JCRB working documents webpage listed as [JCRB-34/07.1](#)]*

## **8. CIPM MRA review workshop**

W. Louw presented a draft RMO presentation on the JCRB perspective for the CIPM MRA workshop in which he summarized the presentations the RMOs made at the 33<sup>rd</sup> meeting of the JCRB. The RMOs discussed both the content and form of the presentation. It was agreed that W. Louw would give a more general presentation to the workshop in which he would articulate CIPM MRA successes, high-level principles, and opportunities for improvements that were common to all of the RMOs. RMOs will have the opportunity at the workshop to make individual presentations on their perspective and recommendations for improvements. The BIPM presented the draft agenda for the workshop which was discussed by the participants.

D. Olson made a presentation on the analysis of the participation of NMIs and RMOs in comparisons, and the distribution of CMCs by NMIs and RMOs. The analysis looked at trends over time, and in particular for Key Comparisons, the distribution among NMIs of the relative number of KCs piloted to KC participation. The results showed how the piloting workload for KCs is concentrated in a small number of NMIs. On average there are 9 participants for each KC; 15 of the 91 institutions who have participated in a KC have piloted comparisons more than the average, 34 institutions have piloted at least one KC but less than the average, and 42 institutions have participated in a KC but never been the pilot. The results also showed how the piloting load was distributed over three time periods: prior to 1999 and the signing of the CIPM MRA; from 1999 to 2015; and from 2015 onward (planned KCs and those not yet completed). This analysis indicated how the load sharing in terms of KC piloting has changed over time. Results were also shown for RMO comparisons, and the distribution of comparisons by metrology area. The CMC analysis showed the distribution of chemistry/physical CMCs by NMI/institution (chemistry CMCs are concentrated in fewer institutions than physical CMCs); the growth in CMCs by metrology area (chemistry, ionizing radiation, and electricity and magnetism currently account for 59 % of all CMCs); and the growth in CMCs by RMO (EURAMET has 46 % of all CMCs).

*[The presentation on comparison and CMC analysis is available on the restricted-access JCRB working documents webpage, listed as [JCRB-34/08.2](#)]*



## 9. KCDB report

A. Henson presented a summary of the semi-annual KCDB report to the JCRB prepared by Dr Susanne Picard. S. Picard is now the KCDB coordinator following the retirement of Dr Claudine Thomas. The report included the following points:

- As of 1 September 2015, the KCDB included a total of 24 041 CMCs, a net increase of 72 since the 33<sup>rd</sup> JCRB. Over this period the number of chemistry CMCs has increased by 120, and the number of physics CMCs has decreased by 48. There were new CMCs published in physics however the net decrease was due to several requests for greying out CMCs and the application of uncertainty tables in electricity and magnetism by Peru.
- 253 CMCs are in grey-out status (temporarily removed from the KCDB), compared with 154 CMCs as of 1 March 2014. CMCs from Mexico (RI), Bulgaria (L), and Denmark (RI) were permanently deleted from the KCDB. Greyed-out CMCs in New Zealand (5 CMCs in EM) and Canada (4 CMCs in PR) reached the 5-year grey-out status on 20 August 2015; when notified of the requirement to detail a reinstatement plan, both NMIs requested the CMCs be permanently removed (action followed the JCRB meeting). 11 CMCs in L for Canada will reach the 5-year grey-out status on 21 January 2016.
- 22 of the 40 Associates who have signed the CIPM MRA have CMCs currently published in the KCDB.
- As of 01 September 2015, there were 1348 total comparisons in the KCDB (915 KC, 433 SC). 67 % of the total are complete and their reports published in the KCDB. Since the 33<sup>rd</sup> JCRB, there have been 18 KC and 14 SC new registrations, 2 KC and 2 SC deletions, and 35 KC and 11 SC reports published.
- In response to Action 33/3, the written KCDB report lists comparisons that were started 5 or more years ago and that have not reached a conclusion. There are currently 82 KCs and 48 SCs in this category, or 10 % of all comparisons. RMOs were asked to examine the comparisons listed for their RMO and consider taking appropriate action.

*[The KCDB report is available on the restricted-access JCRB working documents webpage listed as [JCRB-34/09.0](#), and on the unrestricted BIPM website at <http://www.bipm.org/jsp/en/ViewKCDBReport.jsp>]*

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

D. Olson made a presentation on the status of CMC submissions and the JCRB website. Since the 33<sup>rd</sup> JCRB, 18 CMC sets have been published, 21 CMC sets have been submitted, one set was not approved, and one set was abandoned. As of 1 September 2015, 14 sets were in the status of “review in progress”. 4 of those sets were waiting for the inter-RMO review, while the remaining 10 were waiting for the revised file to be posted. Two CMC sets had been in the status longer than 2 years; SIM requested its CMC set be

abandoned and COOMET will notify the JCRB executive secretary of appropriate action (if any) to take on its set.

Several CMC and CC issues were raised. In a noticeable number of CMC sets, the QMS evidence has not been supplied at the time of CMC submissions. This has occurred in 6 of the last 9 sets in IR, and for all the chemistry submissions in Cycle XVI fast track. In those cases the JCRB executive secretary makes a special request to the RMO to submit the QMS evidence. This becomes problematic when a CMC set includes submissions from multiple NMIs, as none of the CMCs can be published until the QMS evidence is supplied from all the NMIs. In the metrology area of AUV, there has been an increase in the loss-of-rights to review since October 2013. Reviewers in RI have requested an additional reminder at one week prior to the review deadline, in addition to the current reminder three weeks prior to the deadline. SIM asked if customized deadline reminders could be provided specific to the requests of individual reviewers. In response the JCRB agreed to the following action:

**Action 34/4:** *The BIPM will investigate the programming burden related to providing customized deadline alert dates to RMO reviewers of CMCs. The specific request is to add a one week reminder prior to the deadline date for submitting the review, in addition to the present three week reminder.*

D. Olson presented an analysis of the time to review and publish CMC sets (time from initial set posting to publication, classic review) based on 364 CMC sets from 2001 to 2015. The analysis showed significantly shorter review times as time progressed from 2001 to 2015. The median time in the 2013-2015 time period is now 124 days, which is less than half the median time during the first 6 years of the CIPM MRA.

D. Olson then presented an analysis of the value added by the inter-RMO review of CMCs, determined by how many CMC lines receive a comment at the inter-RMO review (either due to formatting, technical quality, or lack of supporting evidence). 63 CMC sets submitted for classic review, with a total of 1061 CMC lines, were examined from March 2013 to June 2015. These CMC sets covered the 7 metrology areas that utilized classic review and all RMOs. On average, 43 % of the CMC lines passing out of the intra-RMO review receive a comment at the inter-RMO review, with approximately half of these comments related to technical quality (including supporting evidence). The conclusion is that at least 20 % of submitted CMC lines receive some value by the inter-RMO review.

D. Olson presented results of the on-going analysis of inter-RMO review performance (defined as adherence to review deadlines, of loss-of-rights), that was started after the 2013 CMC best practices workshop. In the time period since the 33<sup>rd</sup> JCRB, SIM has shown significant improvement in reducing loss-of-rights. In this period, AFRMETS, APMP, EURAMET, and SIM are now completing close to 80 % or more of the reviews without loss-of-rights. Specific information reasons for loss-of-rights was provided to the RMOs.

*[The CMC status report is available on the restricted-access JCRB working documents webpage listed as [JCRB-34/10.0](#)].*

## 11. Summary of JCRB position on GULFMET progress

A session was held without the GULFMET delegation present. Each RMO stated its view on GULFMET's progress since the 33<sup>rd</sup> JCRB meeting and how it had addressed the requirements of **Action 33/13** during its presentation and follow-up discussion. The JCRB delegations then discussed various aspects of the development of GULFMET. After the discussion, each RMO was asked whether they were in favor of granting provisional status as an RMO to GULFMET. The JCRB agreed to the following recommendation:

**Recommendation 34/1:** *The JCRB recommends to the CIPM the granting of provisional acceptance of GULFMET as an RMO (within the meaning of the CIPM MRA).*

## 12. Debrief of GULFMET Delegation

M. Milton delivered a debriefing to the GULMET delegation on the position of the JCRB which would recommend to the CIPM the granting of provisional acceptance of GULFMET as an RMO. M. Milton explained to GULFMET aspects of follow-up requirements set out in CIPM MRA-P-01, and issues raised during the discussion relating to their readiness to be granted provisional status. GULFMET continues to make significant progress and the JCRB would like to see that momentum continue. The focus going forward for GULFMET should be to show technical competence in their metrology activities. Although there is a minimum waiting period of one year to be granted full membership as an RMO, GULFMET should understand that technical competence is the key issue in obtaining full membership, and not the time spent in the provisional status. Technical competence should be shown, among other ways, by results of inter-laboratory comparisons, clarification of CMCs with associated uncertainties, activities of technical committees, and accreditation of quality systems. The GULFMET delegation to the 35<sup>th</sup> JCRB should include an expert in quality, and they should come prepared to detail more clearly their quality systems, quality structures, and accreditation evidence. GULFMET is encouraged to utilize the numbering system for its comparisons that match those of the CIPM CCs and the RMOs. They are invited to attend RMO working group meetings and should request attendance at relevant working group meetings of the CCs.

N.A. Molla thanked the JCRB for their recommendation and continued support.

## 13. Reports of comparisons involving non-signatories to the CIPM MRA, Action 33/12

C. Santo presented the SIM proposal on reports for comparisons involving participants who are non-signatories to the CIPM MRA. The essential aspects of the proposal is that (1) measurement comparison reports should be written to reflect the comparison that was actually performed, including results from all participants; and (2) these reports should be accessible from the online Key Comparison Database (which is a change from the policy stated in CIPM MRA-D-05), but the graphs and tables of equivalence explicitly shown should include results only from signatory NMIs and DIs (same as existing policy). After discussion and some minor revision to the text of the proposal, the JCRB agreed to the following resolution and actions:

**Resolution 34/1:** *The policy for reporting comparisons that involve non-signatories to the CIPM MRA is clarified according to the following text:*

*“Measurement comparison reports should be written to reflect the experiment that was actually performed, including summary results from all participants. These reports should be accessible from the online Key Comparison Database, but the graphs and tables of equivalence explicitly shown should include results only from signatory NMIs and DIs.*

*The results for non-signatory participants should be considered as evidence of metrological competence for any future CMC submissions in the event that the laboratory becomes a signatory to the CIPM MRA.*

*Note: This would not apply to laboratories participating in a measurement comparison under less stringent rules than the signatory laboratories (e.g. as a ‘pilot study’ participant for a measurement comparison in chemistry).”*

**Action 34/5:** *The BIPM to alert the CC presidents and the CC executive secretaries of Resolution 34/1 which revises the policy for publishing results of comparisons involving participants who are non-signatories to the CIPM MRA.*

**Action 34/6:** *The BIPM will review procedural documents of relevance to publishing reports of comparisons involving non-signatory participants, and draft proposed changes to those documents to be reviewed at the 35<sup>th</sup> JCRB meeting (revised policy stated in Resolution 34/1).*

The JCRB then discussed the issue of listing the comparison participants within the KCDB pages on the BIPM website. Currently, there are examples of comparisons where non-signatory participants are listed along with the signatory participants, but it was not clear if the practice of listing non-signatories is consistent or not. This issue is particularly relevant in the case when the non-signatory is not a member of an RMO and is an “expert laboratories” that may also be a commercial institution. Prior to taking a decision on this the JCRB tasked the BIPM to investigate the current practice within the KCDB and agreed to the following resolution:

**Action 34/7:** *The BIPM to look at the current practice within the KCDB website of listing non-signatory participants in comparisons, identifying how extensive the practice is, and establish the feasibility of rectifying inconsistencies within the website should the JCRB recommend a consistent and retroactive policy of website listings (either always list the non-signatory participants or never list the non-signatory participants).*

*[The SIM report of this agenda item is available on the restricted-access JCRB working documents webpage listed as [JCRB-34/13.0](#)].*

## **14. Other business**

### **14.1. RMO comparisons not registered in the KCDB (EURAMET)**

EURAMET raised the issue of the current practice among the RMOs of registering RMO comparisons in the KCDB. After discussion it was agreed that if the intention of

the comparison is to provide evidence to support CMCs, then the comparisons should be registered in the KCDB. If the comparisons are conducted primarily as training exercises, then the comparisons should not be registered in the KCDB.

#### **14.2. Web-access capabilities for CC meetings (SIM)**

SIM raised the issue of making CC meetings web-accessible. M. Milton stated that WebEx capability already exists for meetings at the BIPM and its use is decided on a case-by-case basis in communication with the CC president or CC WG chair. RMOs should make the request to the chair for the particular meeting of interest.

### **15. Next meetings and meeting closure**

**Resolution 34/2:** *The 35<sup>th</sup> meeting of the JCRB will take place on March 16 and 17, 2016 at the BIPM in Sevres.*

**Resolution 34/3:** *The 36<sup>th</sup> meeting of the JCRB is notionally scheduled for week 37, September 13 and 14, 2016. The decision as to whether to hold the meeting and its location will be made at the 35<sup>th</sup> JCRB meeting.*

### **16. Resolutions, Recommendations, and Actions**

**Action 34/1:** Each RMO will review their RMO/BIPM webpages and provide updated information where necessary to the JCRB Executive Secretary by March 1, 2016.

**Action 34/2:** SIM will identify, by March 2016, an NMI within its region to work with the BIPM in developing a poster for World Metrology Day for 2017.

**Action 34/3:** RMOs to establish mechanisms to identify potential candidates to participate in the BIPM CBKT training programs on “leaders of tomorrow” (scheduled for late 2016) and “a sound beginning” (scheduled for 2017) aimed at training metrologists in leadership and implementation roles in global metrology.

**Action 34/4:** The BIPM will investigate the programming burden related to providing customized deadline alert dates to RMO reviewers of CMCs. The specific request is to add a one week reminder prior to the deadline date for submitting the review, in addition to the present three week reminder.

**Action 34/5:** The BIPM to alert the CC presidents and CC executive secretaries of Resolution 34/1 which revises the policy for publishing results of comparisons involving participants who are non-signatories to the CIPM MRA.

**Action 34/6:** The BIPM will review procedural documents of relevance to publishing reports of comparisons involving non-signatory participants, and draft proposed changes to those documents to be reviewed at the 35<sup>th</sup> JCRB meeting (revised policy stated in Resolution 34/1).

**Action 34/7:** The BIPM to look at the current practice within the KCDB website of listing non-signatory participants in comparisons, identifying how extensive the practice is, and

establish the feasibility of rectifying inconsistencies within the website should the JCRB recommend a consistent and retroactive policy of website listings (either always list the non-signatory participants or never list the non-signatory participants).

**Resolution 34/1:** The policy for reporting comparisons that involve non-signatories to the CIPM MRA is clarified according to the following text:

*“Measurement comparison reports should be written to reflect the experiment that was actually performed, including summary results from all participants. These reports should be accessible from the online Key Comparison Database, but the graphs and tables of equivalence explicitly shown should include results only from signatory NMIs and DIs.*

*The results for non-signatory participants should be considered as evidence of metrological competence for any future CMC submissions in the event that the laboratory becomes a signatory to the CIPM MRA.*

*Note: This would not apply to laboratories participating in a measurement comparison under less stringent rules than the signatory laboratories (e.g. as a ‘pilot study’ participant for a measurement comparison in chemistry).”*

**Resolution 34/2:** The 35<sup>th</sup> meeting of the JCRB will take place on March 16 and 17, 2016 at the BIPM in Sevres.

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**Recommendation 34/1:** The JCRB recommends to the CIPM the granting of provisional acceptance of GULFMET as an RMO (within the meaning of the CIPM MRA).