REPORT ON THE EIGHTEENTH MEETING OF THE JCRB

Held on 3-4 May 2007, in Muldersdrift, South Africa

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0. Participants

Name/email	***RMO***
Dr William Anderson	SIM
Dr Steve Carpenter	SIM
Ms Ajchara Charoensook	APMP
Dr Kwang Hwa Chung	APMP
Prof. Dr Ahmed A. El-Sayed	SADCMET
M. Luc Erard	EUROMET
Dr Pedro Espina	(Executive Secretary) BIPM
Mr Ichiro Fujima	(Representative) APMP
Dr Franz Hengstberger	CIPM
Dr Chang Hsu	APMP
Mr Keith Jones	APMP
Dr Robert Kaarls	CIPM
Mr Joel Kioko	SADCMET
Dr Sergey Korostin	(Alternate Representative) COOMET
Prof. Dr Michael Kühne	(Representative) EUROMET
Dr Wynand Louw	SADCMET
Mr Keeper Morgan	SADCMET
Dr Stanislav Musil	COOMET

Prof. Luis Mussio ..... (Representative) SIM
Dr Attilio Sacconi ..... EUROMET
Dr Angela Samuel ..... APMP
Dr Claire Saundry ..... SIM
Dr Wolfgang Schmid ..... EUROMET
Mr Michael Streak ..... SACDMET
Dr Alan G. Steele ..... SIM
Dr Claudine Thomas ..... (KCDB Coordinator) BIPM
Prof. Andrew Wallard ..... (Chairman) BIPM

1. Welcome by the Chairman and changes to the agenda

The Chairman started the meeting and reviewed the agenda (see JCRB-18/01). There were no modifications to the agenda.

2. Approval of the minutes and discussion on matters arising from the report of the 17th meeting held at BIPM, Sèvres, France

The Chairman asked for modifications to the minutes of the 17th meeting (JCRB-18/02). Dr Kühne asked for a changed to pp. 9, second paragraph. The minutes were approved (motion – Dr Kühne, seconded – Mr Jones).

Action 18/ 1 **Make modification requested by Dr Kühne to the minutes of the 17th meeting.** *(Executive Secretary)*

3. Report by the Chairman on progress since the 17th meeting

The progress on the Actions from the 17th meeting was presented by the Executive Secretary using the following PowerPoint presentation (see JCRB-18/03).

On item 3.9 – *on the responsibilities of CC WG on CMCs on the review of CMCs in the context of new comparison results* – Dr Sacconi thought that changes in the scope of CMCs that resulted from the analysis of the results of KCs should be contained in a written report. M. Erard said that in EUROMET, when the report of a KC becomes available, actions to amend CMCs are handled as part of the annual QS review and are stated in those reports. Dr Louw said that the CCQM KCWG is making sure that the NMIs review their CMCs based on the results of KCs. The suggestion of the KCWG was that this revision be made part of the annual QS report to the relevant RMO.

Dr Kaarls was of the opinion that the CCs should not get involved in QS reviews. Prof. Mussio said that SIM is about to start requesting an annual QS report from its NMIs, but he was of the opinion that the review of CMCs in light of the results of KCs should not be part of such report. The Executive Secretary explained that there are two JCRB documents which state the line of responsibility in this matter (see JCRB-11/6(2) and JCRB-11/7(a)). That line is: that the first responsibility for making changes lies with the NMIs, then the RMOs and finally, the CC WG on CMCs. According to the Executive Secretary, the problem is that this is not being done uniformly throughout the RMOs and CCs.

Mr Jones asserted that it should be done as stated in the above-mentioned JCRB documents – if the NMIs take the led, then the CCs need not get involved in this task. Dr Steele said that in the CCT the matter is handled between the pilot laboratory and the NMIs and only if the matter can not be settled, is it brought to the attention of the CCT WG8. Dr Korostin said that during the planning stages of a KC the matter of which CMCs are to be affected by the results should be specified. For supplementary comparisons, the relevant body in the RMO should say "*how far the light shines"*. The Chairman asserted that the ultimate responsibility is with the RMOs. Dr Steele said that within the CCT WG8, the coordination follows JCRB-11/7(a) and there is no need to change that approach. Dr Kühne was of the opinion that the JCRB is developing too many guidelines. Dr Steele asserted that there should not be problems with different processes being used for the review of CMCs in different areas of metrology as long as those processes do not violate current rules. The Executive Secretary suggested that it is up to the RMOs to decide.

Action 18/ 2	**RMOs are to develop a process to monitor changes to the CMCs from their NMIs after the results of a comparison.** *(RMOs)*

On item 3.12 – *on the traceability of industrial instrumentation with capabilities better than those of the local NMI* – Dr Steele explained that the specific issue within SIM, raised by Prof. Mussio, has been resolved without any impact on the general principles of the CIPM MRA.

In this instance, the *National Institute of Standards and Technology* (NIST, US) performed the necessary calibrations for Costa Rica's designated lab for electricity, ICE,

on a complimentary basis. As a result, traceability to the SI for any proposed CMCs in electricity submitted by the *Instituto Costarricense de Electricidad* (ICE, CR) will be through NIST, and not through a third-party accredited laboratory whose measurement capabilities and quality system would not be available to the JCRB.

NIST is to be congratulated for their good will in this situation, which benefits all in SIM.

On item 3.13 – *on the temporarily suspension of Greek CMCs from the KCDB* – Dr Kühne said that this item is party completed. He explained that in the area of acoustics, *Ελληνικό Ινστιτούτο Μετρολογίας* (the Hellenic Institute of Metrology, EIM, GR) currently has no personnel to deliver these services and the CMCs will remain suspended until the new personnel are full instated. In the area of flow, there was a communication error between EUROMET and EIM that led to the suspension of the CMCs. However, the misunderstanding has been clarified and the flow CMCs from EIM are in full compliance with all requirements of the CIPM MRA, thus EUROMET asked for their reinstatement.

On item 3.19 – *on the Modification of the Request for Designation Information form (JCRB-17/15.1) to request the acronym used by the designated laboratory and the period of designation* – Dr Steele said that NMI delegates to the CCs could try to increase awareness among the Directors of their NMIs, of the need for the information in these forms. Dr Kühne was of the opinion that the request needs to be sent directly to the NMI Directors, but Dr Anderson was of the opinion that it would be beneficial to use other channels to remind the NMI Directors of the need for this information.

The Chairman requested that the designation form (JCRB-17/15.1) be included in the Minutes of the meeting. Dr Kaarls reminded all that there is a need for these forms to be treated in a formal way. Dr Anderson cautioned that in cases where the NMI has a politically appointed director, he/she might not be the most appropriate person to provide the designation information. The Chairman understood the situation, as it exists in some NMIs, and he said that the BIPM would work with the NMIs to find the best source of this information.

Action 18/ 3 **Append a copy of the *Request for Designation Information form* (JCRB-17/15.1) to the Minutes of the meeting.** *(Executive Secretary)*

4. Report on the present status of the KCDB

Dr Thomas presented the KCDB report to the JCRB.

5. Reports by RMO representatives to the JCRB

BIPM: The Chairman presented the BIPM report to the JCRB.

There followed a discussion of the BIPM's proposal to include a more consistent and transparent set of uncertainties associated with its calibration services on its web site and for a presentation of its quality system to the RMO community. Dr Anderson asked if the BIPM plans to clearly explain on their website, why their uncertainties were expressed in standard format (i.e., $k = 1$) and the Chairman said that this policy had been set by the CIPM and was explained on the BIPM website. Dr Anderson asked if an expert panel will be used for the BIPM's presentation of its laboratory quality system (QS), and if it will be constituted by quality experts from the RMOs; the Chairman answered in the affirmative. Dr Musil asked if there would be laboratory visits as part of the planned BIPM QS review and the Chairman answered that indeed there would be. Mr Jones asserted that the review of the BIPM's QS would be a good exercise on how to make use of the guidelines set out in document CIPM/06-03.

Action 18/ 4	**Make the uncertainty of the measurement services of the BIPM more visible and clearer in the BIPM website and other BIPM publications.** *(BIPM)*

APMP: Mr Jones presented the APMP report to the JCRB.

Dr Kühne suggested that the questionnaire mentioned in the APMP presentation should be circulated to all RMOs for comments. Mr Jones said that that was APMP's plan to have a single questionnaire that could be used by all RMOs. Dr Kühne suggested that once completed, the questionnaire should be sent to the RMOs, for distribution among their member NMIs; the RMOs should report back on the results from their regions. Dr Kühne then asked the Chairman if the questionnaire would be sent to NMIs and their DIs; the Chairman clarified that it will be only sent to the NMIs.

Dr Kühne impressed upon Mr Jones the importance of distinguishing between testing and calibration in the language used in the questionnaire. Dr Kaarls said that he thought that the questionnaire would only address issues related to calibration and not deal with

testing at all. He also asked the Chairman why DIs were not to be considered. The Chairman explained that the DIs will be included through the responses of their NMIs.

The Executive Secretary and Dr Kühne expressed disappointment at not having been able to participate in an APMP QS review process. They attended the New Delhi (IN) meeting (13 December 2006) in the hopes of observing the process unfold, but the structure of the APMP TCQS is such that at their meetings no QS reviews are performed. Mr Jones regretted the confusion and explained that it is APMP's practice to use about 1/3 of their assessors from other regions, and that is the best way for other RMOs to witness their review process. Mr Jones explained that in the APMP system, in which third party accreditation is the recommended practice, it is up to the National Accreditation Body to ensure compliance with ISO/IEC 17025 and that it is not a function expected from their TCQS.

Action 18/ 5	**Distribute the APMP questionnaire to all RMOs.** *(APMP)*
Action 18/ 6	**Provide APMP with comments on their questionnaire.** *(RMOs)*

COOMET: Dr Korostin presented the COOMET report to the JCRB aided by Dr Musil, who presented the portion related to Quality Systems.

Action 18/ 7	**Reinstate into the KCDB those CMCs from COOMET which have gained COOMET *Recognition*.** *(KCDB Office)*

EUROMET: Prof. Kühne presented the EUROMET report to the JCRB.

In response to the question from the meeting, Prof. Kühne clarified that the EUROMET Corresponding Organizations would become EURAMET Liaison Organizations. Dr Samuel asked if the 21 million euros mentioned in the presentation as EU funding for the first year research program of EURAMET could be considered as part of the iMERA funding. Dr Kühne said that this funding was independent from the iMERA funding.

SADCMET: Mr Streak presented the SADCMET report to the JCRB.

SIM: Prof. Mussio presented the SIM report to the JCRB.

Prof. Mussio invited all to the next SIM General Assembly which will take place in September 2007 in Ottawa (CA). He informed the audience that Roberto Arias (CENAM, MX) was the new chairman for the SIM metrology working group for flow and related quantities (formerly chaired by Dr Espina).

Dr Sacconi asked if SIM had plans for requesting an annual report from their NMIs and DIs regarding the status of their laboratories' quality systems. Dr Anderson said that indeed such a request was planned, and that it would be considered in the next SIM QSTF meeting in Ottawa in September.

On behalf of SIM and NRC-INMS, Dr Steele offer to host the next JCRB meeting in Ottawa as part of the activities scheduled for the week of the SIM General Assembly.

6. Proposed changes in operational procedures of the JCRB

The Chairman introduced the topic with the help of this presentation. The presentation drew the Committee into a discussion; the highlights of which were.

Prof. Mussio asked whether final decisions on CIPM MRA related matters always rest with the CIPM. The Chairman said yes. Dr Kühne was of the opinion that there should be clear rules on what constitutes CIPM business and JCRB business; the same applies to CIPM vs. JCRB documents.

Dr Samuel asked whether the minutes of the JCRB should be in the public domain. The Chairman felt that there might be a need to suppress some discussion items from the minutes to enable a high level of frankness among the participants.

Dr Samuel said that the proposed CIPM MRA summary should be given to developing economies to facilitate their participation in the CIPM MRA.

Prof. Mussio remarked that the numbering of CIPM MRA related documents continues to be a problem. According to him, as the documents develop from meeting to meeting, their numbering changes accordingly and this makes it very difficult to reference them.

Dr Hengstberger remarked that decisions from the JCRB are not filtering down to the CC level. The Executive Secretary said that he makes presentations at all the meetings of the CC working Groups on CMCs and the Chairman participates in all meetings of the CCs. Dr Kaarls remarked that the reverse situation is also affecting the process – CC information is not shared with the JCRB. Dr Samuel suggested that perhaps the

development of a web-based system that enables discussion between the Executive Secretary and the Working Group Chairs might prove useful as a means to keep everyone informed. Dr Louw asked if the reports that the Executive Secretary makes to the CC WG on CMCs are clear on which documents are approved and which remain under development. The Executive Secretary replied affirmatively and described the content of the reports.

Mr Jones said that the Committee should not hesitate to improve documents that might unwillingly be creating problems. The Chairman replied that, ideally, the Committee would like to wait a reasonable period of time before reconsidering a document to avoid the continual development and re-writing of documents. But clearly, there will be instances when this cannot be done.

Dr Kühne said that the draft minutes of the JCRB meetings should be available within 20 days of the meeting. Dr Thomas was of the opinion that these minutes are very long and perhaps a more reasonable amount of time would be 30 days. Dr Steele emphasized that the important issue is to have the action list available within 7 days after the meeting.

Action 18/ 8	**The JCRB has decided to establish a Working Group to revise its rules and procedures. The following tasks are to be completed:** • **RMOs are to suggest issues for consideration to the Executive Secretary by 3 June 2007.** *(RMOs)* • **RMOs are to nominate a member of the new Working Group by 14 May 2007.** *(RMOs)* • **The report of the Working Group should be available 30 days prior to the September 2007 meeting so it might be discussed there in preparation for approval by the CIPM in November 2007.** *(Working Group)*
Action 18/ 9	**The action list from the meetings is to be discussed as a final agenda item in each meeting and to be circulated via email within 7 days. The draft report of the meeting is to be sent to the delegates within 30 days.** *(Executive Secretary)*

7. Report on current CMC reviews on the JCRB website and the status of KCs

The Executive Secretary reported that there were no significant irregularities in the CMC inter-RMO review process or the execution of KCs at this time.

8. Matters arising from work of the CC WG on CMCs and or RMO quality system (QS) reviews

(8.1) Traceability of national mass standards to the international prototype kilogram

The Executive Secretary explained that the CCM WGCMC, under the leadership of Dr Chris Sutton, continues to work to ensure that all mass CMCs state their traceability path back to the international prototype and make any appropriate changes to the statements of uncertainty.

(8.2) Slippage of deadlines in the review of CMC in chemistry

Dr Kaarls and the Executive Secretary reported that this issue was carefully discussed during the last meeting of the CCQM KCWG (13-14 April 2007, BIPM). The members of the KCWG committed to a timeline for the Cycle VIII review and pledged that unexplained delays would result in automatic postponement of the CMCs until Cycle IX (2008). Dr Kaarls expected that the situation would greatly improve.

(8.3) On the support of CMCs by KC in the CCL

The Executive Secretary reported on his discussion of the issue of KC linkage for gauge block comparisons with the members of the CCL WGDM during their last meeting (30-31 October 2006, CENAM, Queretaro, MX). The members of the WGDM committed to a process by which they would reach agreement with the CIPM of how to best link these comparisons in spite the drift of the gauge blocks. It is expected that the CCL President will report on behalf of the WGDM to the CIPM by November 2007.

Dr Steele explained that the CCL only has two working groups that deal with KCs related topics: CCL Working Group on Dimensional Metrology (WGDM) and CCL-CCTF Frequency Standards Working Group. Dr Thomas explained that initially, there were CCL KCs with their corresponding RMO KCs, which could, in principle, be linked. However, the linkage was never completed and currently, only sets of degrees of equivalency are given in the KCDB for each individual KC. Later, the CCL created a new type of comparisons not envisioned in the CIPMMRA and known as “CCL-RMO KCs”, which are not intended to have linkage. Dr Steele stated that the current CCL practice constitutes a significant departure from the normal way in which KCs are conducted in all other CCs. Dr Sacconi reminded the committee that the WGDM

developed the original guidelines for KCs and the format for CMCs. He said that clearly there had been a divergence of process between the CCL and the rest of the CIPM MRA. Dr Sacconi said that Dr Rudolf Thalmann (Chairman of the WGDM, METAS, CH) will prepare a document for the CIPM explaining the technical details of the situation. Dr Sacconi also explained that there is a *Metrologia* paper on how to compute the degrees of equivalence for the length RMO KCs (see *Metrologia*, 2006, 43, n°6, L51-L55).

9. Progress towards the harmonization of the terms BMC and CMC

The subject of the new definition of the term CMC was introduced by the Chairman, who outlined the timeline of the events that led to the current draft of the new definition (JCRB-18/09). He explained that although in Nashville there had been a consensus to make use of a new term, MC (i.e., Measurement Capability), the CIPM had felt uncomfortable with the change and ILAC graciously accepted the use of the term CMC for the future definition.

There was a discussion on the Note 4 and, subsequently, changes to the document were made by the JCRB. The resulting definition is that shown in document JCRB-18/09.

Members of the Committee also requested that the latest version of the CMC draft definition, along with its explanatory notes, be distributed among the participants.

Action 18/ 10	**The Executive Secretary is to circulate the latest version of the CMC draft definition with explanatory notes.** *(Executive Secretary)*
Action 18/ 11	**When the matter is finalized, the Chairman is to send correspondence to the chairpersons of the CC working groups explaining the origins and implications of the new notes attached to the CMC definition.** *(Chairman)*
Action 18/ 12	**After consulting with ILAC, the Chairman is to recommend the definition in document JCRB-18/09 to the CIPM for final approval with the endorsement of the JCRB. He will also present it to the ILAC Accreditation Issues Committee at its next meeting in May 2007.** *(Chairman)*

10. Discussion on how to assist NMIs that lack support of an RMO

Dr Kühne reminded the Committee that he had spoken on this topic in the last JCRB (see JCRB-18/02). He pointed out that the lack of participation in the CIPM MRA in certain areas of the world leads to situations that are harmful, both to countries in those regions and to countries which currently participate in the CIPM MRA. Of special concern are those few countries that are isolated and who do not have support from an

RMO. In the case of Egypt, EUROMET and SADCMET are committed to provide support to their metrology efforts, but it would be very difficult for the current RMOs to support all the countries which currently lack RMO support and those likely to join the CIPM MRA in the future. Dr Kühne praised the efforts of APMP in support of Jordan, but he argued that in the long run, it would be best to create a new RMO which would support the countries in Northern Africa and the Gulf Region. He asked the JCRB to endorse the creation of such an RMO.

Dr Hengstberger agreed with Dr Kühne that the creation of a new RMO is the long-term solution, but added that the associate membership in well-established RMOs is a good transitional step. The Chairman agreed that this is a good practical temporary solution but emphasized that the issue is the creation of a long-term solution. Dr Hengstberger agreed and said that that is why SADCMET is working with NMIs in other regions on how to set up new RMOs. Dr Louw said that in Africa, SADCMET is committed to help NMIs which are not members of any RMO to participate in the CIPM MRA. Mr Jones said that APMP is willing to support associate members as their capacity allows them to, but there are limits to what they can do.

11. Activities aimed at NMIs in the developing countries

(11.1) Progress on JCDCMAS

The Chairman informed the committee that the JCDCMAS is working well under the leadership of UNIDO (currently holding the Secretariat until March 2008). He said that the BIPM has been working closely with OIML and ILAC on issues of common interest. The Chairman reported that he visited the Director General of UNIDO, Kandeh Yumkella, and spoke about the need for further work in metrology in the developing world and had received a positive response.

Dr Hengstberger complained that the output from the JCDCMAS is not reaching the RMOs or the NMIs. He said that during the SADCMET GA in Madagascar (23-28 April 2007), none of the presenters were aware of the JCDCMAS activities. Dr Samuel related her experience in a recent APEC Specialist Regional Bodies (SRBs) Workshop where initiatives were proposed, some of which duplicate activities of the JCDCMAS, due to a lack of awareness of the JCDCMAS or its activities. Dr Samuel was of the opinion that the BIPM should place greater emphasis on bringing the metrological needs of the developing world under the scope of its work. The Chairman said that indeed, the

CIPM had been thinking along the same lines when it proposed Resolution G (proposal to create a category of Corresponding National Metrology Institute of the BIPM) to the next CGPM. Dr Kaarls explained that this work, although worthy of our attention, needs to be considered in the light of the limited resources that the BIPM has available, and done with the consent of the Member States and Associates of the CGPM.

(11.2) The BIPM-OIML-UNIDO MoU

The Chairman alerted the Committee to the work aimed at drafting a metrology Memorandum of Understanding (MoU)) between the BIPM, OIML and UNIDO, for the furthering of coordinated metrology efforts in the developing world. The Chairman said that the MoU will probably be available by the end of 2007.

12. CIPM Update

(12.1) CIPM-06/03 Supplement: Guidelines for the review of CMCs and the monitoring and reporting of the operation of quality systems by intergovernmental organizations who are signatories of the CIPM MRA (JCRB-18/12.1)

This document was tabled by APMP. Mr Jones explained that from APMP's point of view, the document CIPM-06/03 lacks some requirements that are demanded from NMIs in APMP and accordingly it would be difficult for APMP to approve laboratory quality systems without them. Mr Jones said that the proposed "supplement" aims at closing those gaps. The discussion followed about the merits of the additional requirements proposed in the "supplement", especially in light of the new document on peer-visits (JCRB-18/12.2). Mr Jones said that at the time of the drafting of the "supplement", the peer-review document was not yet available and he said that APMP would revisit the points considered in the "supplement" in light of those items considered in JCRB-18/12.2.

Action 18/ 13	**The Chairman is to request an annual report on the status of the laboratory's quality system from each of the IGOs participating in the CIPM MRA and report back to the JCRB. Those reports are to be annexed to the JCRB report.** *(Chairman)*
Action 18/ 14	**RMOs are to submit annual reports of the operation of laboratories' quality systems in their NMIs and DIs and present them to the JCRB. Those reports are to be annexed to the JCRB report.** *(RMOs)*

(12.2) CIPM-06/05: Recommendations for on-site visits by peers and selection criteria for on-site visit peer reviewers

Dr Kühne summarized the timeline of the development of this document. He reminded the Committee that the document had been recommended to the CIPM for approval in October 2006, but the CIPM had requested changes to simplify it. According to Dr Kühne, the version here presented, includes the simplifications that the CIPM requested and he invited the Committed to re-recommend it to the CIPM for final approval.

Dr Kaarls had comments on the document but the Committee argued that further changes risked the disapproval of the document by the CIPM – something that would adversely affect RMOs who have been waiting for this document for some time. With the consent of Dr Kaarls, the Committee re-recommended the document to the CIPM.

Action 18/ 15 **The Chairman is to re-recommend document JCRB 18-12.2 (formerly document CIPM-06/05) to the CIPM for final approval.** *(Chairman)*

(12.3) CIPM 2007-XX: Designated institutes of intergovernmental bodies, with special reference to the laboratories likely to be designated by the World Meteorological Organization (WMO)

The Chairman explained that the responsibility on policy regarding DIs from IGOs lies with the CIPM. He introduced the paper currently being developed on policy in this regard as it applies to the World Meteorological Organization (WMO; see CIPM 2007-XX) and explained that the document was necessary as the WMO wishes to sign the CIPM MRA but it does not have metrology laboratory of its own. Currently, the WMO has three metrological associated laboratories: the *Physikalisch-Meteorologisches Obseratorium Davos and World Radiation Center* (PMOD/WRC, Davos, CH), EMPA (Dübendorf, CH), and the laboratories of National Oceanographic and Atmospheric Administration (NOAA, US). The Chairman said that the intention of the WMO would be to designate or to nominate those laboratories for purposes of the CIPM MRA but the laboratories had expressed no interest in submitting CMCs; they only wish to participate in KCs. As a result, the Chairman asked the Committee if it was necessary for DIs to have CMCs in the KCDB (with corresponding QS) in order to participate in the CIPM MRA.

Prof. Mussio asked if it was possible for two laboratories to be designated in the same area of metrology within the same country/economy (in this case, gas chemical metrology by NIST and NOAA within the US). The Chairman said that he had conversations with NIST from which he learned that NOAA had no interest in having CMCs and in any case, the metrology was not quite in the same area. Dr Kaarls said that this conversation was of relevance in other areas of metrology like health and food where in many countries there are National Reference Laboratories and a new path is needed to connect their activities to those of the Metre Convention. Dr Kühne pointed out that the PMOD/WRC is already designated for purposes of the CIPM MRA. The Executive Secretary gave further details about the special situation with the NOAA laboratories. Dr Kaarls reminded all that there is no explicit requirement in the CIPM MRA mandating the inscription of CMCs in the KCDB. Dr Thomas supported this view by saying that in the CIPM MRA a laboratory may choose to participate in the activities of Appendix B, Appendix C, or both. Dr Kaarls reminded the Committee that in the special case of Time and Frequency, many of the laboratories that contribute to the International Atomic Time (TAI) are not signatories of the CIPM MRA. Dr Kühne was convinced that there were multiple ways in which these laboratories could be brought into the CIPM MRA. Dr Kaarls said that one of the main obstacles for these laboratories was the requirement of QS to submit CMCs. Dr Anderson said that NIST had no interest in designating NOAA for purposes of the CIPM MRA and thus this route would not provide a solution in the case of those particular laboratories. Dr Steele was of the opinion that the WMO laboratories should be allowed to participate in the activities contained in Appendix B and not be required to have CMCs and the supporting QS. Dr Steele went on to say that their activities could be brought under the umbrella of the CIPM MRA but they would not be able to provide calibrations recognized by the CIPM MRA, as they would not have CMCs.

Dr Sacconi was of the opinion that networks of other metrology laboratories should be strongly connected to the SI. He made the point that a laboratory's participation in a KC does not assure its traceability to the SI. Dr Kühne was of the opinion that participation in a KC without corresponding CMCs constitutes a problem. Dr Steele was not sure as he said that not all QSs support all the services tested in KCs; as an example, he cited the KCs in the CCTF. Dr Anderson asked what the role of the NMI should be in the case where an IGO wishes to designate a metrology laboratory in the same country –

would that constitute a violation of the sovereignty of the NMI? The Chairman was of the opinion that there should not be a conflict in those cases as there would be two independent entries in the KCDB. Dr Carpenter said that in the US, because NIST provides traceability to the NOAA laboratories that would constitute a problem. Dr Kaarls asserted that similar situations are bound to happen if and when the World Health Organization (WHO) signs the CIPM MRA. Prof. Mussio said that the root of the problem is the ability of participating IGOs to designate metrology laboratories in countries where the NMIs are sovereign. Dr Kühne wanted to make a distinction between the IRMM and NOAA; the IRMM is an international laboratory, NOAA is a national laboratory and thus it cannot be designated by an international organ. Dr Kaarls agree that NOAA is a national laboratory but in this particular case, as it concerns the WMO, NOAA plays an international role.

Dr Steele said that the CIPM MRA is clear – one country/economy, one signatory. But the question is… Can one country designate two laboratories for the same purpose? Clearly the answer is no. Thus, it follows that an IGO cannot designate two laboratories for the same purpose. Dr Kaarls said that he was aware of these sensitivities but there are requirements that need to be addressed by an evolving CIPM MRA. The Chairman said that in the case of NOAA they provide traceability for CH_4 and CO_2 metrology to the WMO worldwide network – that constitutes an international need. Prof. Mussio said that the *Laboratorio Tecnológico del Uruguay* (LATU, UY) would have a problem if an IGO would like to designate another laboratory in Uruguay – it is a matter of sovereignty. Dr Carpenter made the distinction that NOAA might be designated by the WMO, but NOAA derives its traceability from NIST. The Chairman said that such a situation already occurs between some of the laboratories participating in the CIPM MRA and it is not a problem as long as clients of NIST and NOAA are not the same. Dr Sacconi was of the opinion that this issue could undermine the structure of the CIPM MRA and urged all to be cautious.

13. Other JCRB business

Dr Sacconi spoke of his concerns regarding the lack of uniformity among the various areas of metrology and RMOs, on the inclusion of the uncertainty associated with the device under test. Specifically, he spoke of flow metrology CMCs, which do not always include the uncertainty of the device under test. The Chairman asked if a workshop on

this topic would be useful. Dr Kühne was of the opinion that a workshop was not needed as it is clear from the CIPM MRA guidelines what should be done. Dr Hengstberger said that the issues, in the various areas of metrology, are too different to be implemented by one solution throughout the CIPM MRA community. The Committee acknowledged that there might be disparities in how the uncertainty of the device under test is considered, and encouraged Dr Sacconi to further research the topic and report back to the Committee at its next meeting.

Members of the Committee also encouraged the BIPM to finish the *Guide to the Implementation of the CIPM MRA*[†] at the earliest possible time.

Action 18/ 16	**Dr Sacconi is to write a question on the implementation of the uncertainty of the device under test which is to be circulated among the RMOs.** *(Dr Sacconi)*
Action 18/ 17	**The Executive Secretary is to circulate that question and gather responses for presentation at the next Committee meeting.** *(Executive Secretary)*
Action 18/ 18	**Complete the document *Guide to the Implementation of the CIPM MRA* at the earliest possible time.** *(BIPM)*

14. Next Meetings

(14.1) Next meeting: Ottawa, Canada, September 27-28, 2007

In a reversal of Resolution 17/1, which called for the cancellation of the second meeting of 2007 because of the preparations for the 23rd CGPM, the Committee accepted the invitation from SIM to hold the next meeting in Ottawa, CA, September 27-28, 2007.

(14.2) 1st Quarter 2008 meeting: New Zealand, May 1-2, 2008

The Committee accepted the invitation from APMP to hold the first meeting of 2008 in New Zealand, May 1-2, 2008. Details will be provided towards the end of 2007.

Resolution 18/ 1	**The second meeting of 2007 will be held in Ottawa, CA, September 27-28, 2007.**
Resolution 18/ 2	**The first meeting of 2007 will be held in New Zealand, May 1-2, 2008.**

15. Meeting closure

[†] An always up-to-date, web-based document what will summarize all policy and guideline documents related to the CIPM MRA.

ACTIONS

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RESOLUTIONS