

	COOMET Recommendation	COOMET R/GM/7:2021
	Procedure for an Intraregional Review of Calibration and Measurement Capabilities of COOMET NMIs and DIs and an Interregional Review of Calibration and Measurement Capabilities of NMIs and DIs of Other Regional Metrology Organizations	
<i>Adopted at the 1st COOMET Presidential Council meeting (2 October 2000), updated in 2004; approved at the 14th COOMET Committee meeting (27–28 May 2004, Albena, Bulgaria), refined and expanded: at the 16th COOMET Committee meeting (4–5 September 2006, Braunschweig, Germany), at the 24th COOMET Committee meeting (16-17 April 2014, Yekaterinburg, Russia), at the 31st COOMET Committee meeting (15-17 June 2021, online).</i>		

1. SCOPE

This recommendation regulates the procedure for intraregional review of calibration and measurement capabilities of COOMET national metrology institutes (NMIs) and designated institutes (DIs), and interregional review of calibration and measurement capabilities of NMIs and DIs of other regional metrological organizations. This recommendation was developed to implement the main provisions of CIPM MRA-G-13.

2. REFERENCES

CIPM MRA-G-13 "CMCs in the context of the CIPM MRA: Guidelines for their review, acceptance and maintenance".

3. DEFINITIONS

This recommendation uses the following definitions and acronyms:

Mutual Recognition Arrangement of National Measurement Standards and of Calibration and Measurement Certificates Issued by National Metrology Institutes (CIPM MRA) is a technical arrangement signed by Directors of national metrology institutes to establish a degree of equivalence of national standards and to ensure mutual recognition of calibration and measurement certificates.

National metrology institute (NMI) is a metrology institute designated by a national government or another public authority responsible for national standards and participating in the implementation of the CIPM MRA.

Designated institute (DI) is an institute responsible for national standards in the areas not covered by NMIs, which maintains CMC lines and participates in the implementation of the CIPM MRA.

BIPM key comparison database (BIPM KCDB) is a free web resource and web platform (www.bipm.org/kcdb) related to the implementation of the CIPM MRA.

Calibration and measurement capabilities (CMCs) represent the highest level of a calibration or measurement available to customers represented by the ranges of measurands and associated expanded uncertainties at a 95 % level of confidence. CMCs are published in the BIPM KCDB (<https://www.bipm.org/kcdb/>).

Regional Metrology Organization (RMO) is a regional association of NMIs and DIs with a wide range of activities to implement the CIPM MRA.

Joint Committee of the Regional Metrology Organizations and the BIPM (JCRB) is an international body responsible for coordination of RMO activities to implement the CIPM MRA and for creation of conditions for mutual recognition of national standards and calibration and measurement certificates issued by NMIs/DIs.

COOMET Joint Committee for Measurement Standards (JCMS) is a COOMET structural body responsible for coordination and methodological support of cooperation between NMIs/DIs of COOMET member countries in the implementation of the CIPM MRA.

COOMET intraregional review of CMCs is a review of CMCs of NMIs/DIs of COOMET member countries carried out by COOMET technical experts on CMC review (by subject fields).

COOMET interregional review of CMCs is a review of CMCs of NMIs/DIs of other RMO member countries carried out by COOMET technical experts on CMC review (by subject fields).

TC – COOMET technical committee.

WG – working group.

4. GENERAL PROVISIONS

CMC review is carried out to provide independent and objective evidence that the measurement uncertainties and ranges declared by NMIs/DIs correspond to key/supplementary comparisons of national standards, and that quality management systems (QMS) implemented by NMIs/DIs support CMC data.

Each RMO is responsible for organizing an intraregional review to ensure that the CMCs submitted for interregional review have sufficient technical support.

A CMC review is organized by the Chairs of technical committees, included in the COOMET JCMS, and is conducted by COOMET technical experts on CMC review (reviewers) (by subject fields). A review is carried out in accordance with CIPM MRA-G-13.

COOMET reviewers carry out intraregional reviews of COOMET NMIs/DIs or interregional reviews of other RMO NMIs/DIs through the BIPM KCDB web platform, which provides special tools for CMC reviews. For a COOMET intraregional review electronic correspondence can be used along with the BIPM KCDB web platform. If necessary, the TC Chair brings up CMC for discussion at the next TC meeting.

The official language of all the documents related to CMCs is English. COOMET intraregional review allows using Russian upon mutual agreement between NMIs/DIs and reviewers.

5. PROCEDURE FOR AN INTRAREGIONAL REVIEW

This procedure establishes the following stages for COOMET intraregional reviews:

5.1. A CMC Writer acting on behalf of the NMI/DI and having an account approved by the COOMET TC Chair submits its CMC in a specific measurement area for a review through the BIPM KCDB web platform. To ensure CMCs publication, it is important to provide all the information requested at the BIPM KCDB web platform. When creating a CMC, it is possible to upload an Excel file.

5.2. The COOMET TC Chair can either accept the CMC line or decline it, or return it to the CMC Writer for revision indicating the reason in the comments. The COOMET TC Chair can involve regional reviewers in the CMC review. Based on the reviewers' comments, the CMC Writer acting on behalf of the NMI/DI makes adjustments. Each time there is a change on the BIPM KCDB web platform all review participants get an automatic notification.

5.3. An intraregional Review does not have a deadline programmed on the BIPM KCDB web platform. Time limits for an intraregional review are set by the Chair of the corresponding COOMET TC.

An intraregional review is completed when the COOMET TC Chair accepts the CMC and receives a confirmation from the NMI/DI that the CMC range and uncertainty are fully covered by the QMS of the NMI submitting the CMC (to confirm the CMC range and uncertainty, the Chair may request a Certificate of the QMS Recognition or information in accordance with the questionnaire given in Appendix 1).

6. PROCEDURE FOR AN INTERREGIONAL REVIEW

This procedure establishes the following stages for COOMET interregional reviews:

6.1. The TC/WG Chair of the initiating RMO submits CMCs for review. For each action, an automatic notification is sent to all involved participants.

6.2. COOMET TC Chairs indicate their interest in participating in the CMC review by confirming the receipt of the notification on the BIPM KCDB web platform and indicating the date by which they intend to complete the review. If COOMET is not interested in participation in the review, it should be stated on the platform to avoid unnecessary delays. The deadline to confirm participation in a review is 3 weeks after the receipt of the notification:

after two weeks, those who have not indicated their interest in participation in the CMC review receive an automatic reminder,

if COOMET does not indicate its interest in participation in the CMC review within three weeks, its right to participate in the review is cancelled.

COOMET TC Chairs must complete the review by the date they have set when confirming their participation. An automatic reminder is sent to the TC Chair three weeks before the selected date.

If the review is not completed by the selected date, the right to continue the review is lost.

6.3. When all RMOs participating in the review accept the CMCs, the BIPM KCDB gets an automatic notification for publication; if COOMET requires revision of the CMC, the Writer carries out the revision in accordance with the comments received from COOMET and participating RMOs, if any. The Writer resolves any issues arising during the CMC review process directly with the participating RMOs. Comments posted on the BIPM KCDB web platform are available to all the review participants. CMCs can be revised several times offline (e.g. by email), but revised CMCs can only be posted on the BIPM KCDB web platform once.

To complete the approval process, the COOMET TC Chair votes IN FAVOR or AGAINST CMC approval no later than 3 weeks after the revised CMCs were submitted.

A vote AGAINST from one or more RMOs prevents the approval of CMC.

6.4. The JCRB Executive Secretary constantly monitors the review process. Repeated or unreasonably long delays may require discussion with RMOs. Any unresolved disputes are dealt with by the JCRB, which may submit information on the dispute to the CIPM for consideration.

APPENDIX 1. EVALUATION CRITERIA FOR CALIBRATION AND MEASUREMENT CAPABILITIES

1. Information on a NMI/DI, demonstrating support of the declared CMCs, is submitted in the form of a completed questionnaire given below. Optionally, a NMI/DI can provide additional information that can be used in a CMC review.

QUESTIONNAIRE FOR ASSESSING THE LEVEL OF COOMET CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)

Type of measurements _____ NMI/DI _____
Item, sub-level item of the BIPM classification

Code	CMC review process	Yes	No	Comments
1	Comparison results corresponding to the claimed CMCs			
1.1	CIPM key comparisons			
1.2	RMO key comparisons			
1.3	RMO supplementary comparisons			
1.4	Bilateral comparisons			
				Please, indicate the source of publication
2	Available information about the NMI/DI work and activities			
2.1	Activities of this NMI/DI:			
2.1.1	Reproduction of units of physical quantities			
2.1.2	Verification and (or) calibration of measuring instruments			
2.1.3	Elaboration of documentary standards			
2.1.4	Certification and testing of measuring instruments			
2.2	Participation of the NMI/DI in the work of international metrology organizations:			
2.2.1	CIPM and/or its Committees			
2.2.2	IEC			
2.2.3	OIML			
2.3	Availability of documentary standards regulating a measurement process (GOST, guiding documents, measurement procedures)			
3	Quality System			
3.1	Does the NMI/DI have international accreditation?			Please, provide the name of the accreditation body and accreditation number
3.2	Does the NMI/DI have national accreditation?			Please, provide the name of the accreditation body and accreditation number

3.3	Does the NMI/DI have its own quality management system (QMS)? Did the COOMET Quality Forum approve the QMS?			
4	Additional information			
4.1	Have representatives of international metrological organisations visited the NMI/DI?			Please, specify by whom
4.2	Have representatives of other RMOs visited the NMI/DI?			Please, specify by whom
4.3	Any scientific publications on the results of the NMI/DI activities in the given measurement field since 1991.			Please, specify the number

2. Criteria for adopting a positive conclusion.

For a positive conclusion on the CMCs of the NMI/DI, an expert should make positive decisions on Groups 1, 2, 3 of questions.

- Questions of Group 1: One positive answer is sufficient, provided that it is based on comparisons relevant for the claimed CMCs in the subject field or subfields indicated or for single CMC entries.

- Questions of Group 2: At least two positive answers are needed. If the only positive answer in the questions of Group 1 is in 1.4, then all questions in Group 2 should have positive answers (2.1; 2.2; 2.3)

- Questions of Group 3: One positive answer is required for at least one item (3.1 or 3.2). In case that 3.3 is answered positively, the expert should consider the own NMI/DI QMS according to Section 3 of this document.

- Questions of Group 4: The information is used by the expert individually.

Information

1. Organization, coordinating the development: Joint Committee for Measurement Standards;

2. COOMET project: 828/RU/21;

3. The updated recommendation was approved at the 31st COOMET Committee meeting (15 – 17 June, online).