CIPM MRA Summer school:
Supporting
RMO TC/WG Chairs
Syllabus

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V2/07.07.2026

CBKT

1. Introduction

RMO TC/WG Chairs play a crucial role in maintaining the integrity and reliability of both the data published in the KCDB and the underlying processes that support the CIPM MRA.

According to the CIPM MRA, RMO TC/WG Chairs are responsible for ensuring technical consistency, quality and process integrity within their domains. They coordinate the intra-regional review of CMCs, organize the inter-regional (JCRB) review of their region's CMCs, participate in the inter-regional (JCRB) review of CMCs submitted by other RMOs, and coordinate or support comparison programmes within their RMOs.

RMO TC/WG Chair's roles in CMC Review and coordination

- Manage the CMC review process within the RMO (i.e. intra-RMO review);
- Engage local reviewers when needed, organize the technical review of CMCs and evidence within the region;
- Ensure that the CMCs are supported by adequate technical evidence, and consistent with the quality management system (QMS) of the submitting institute;
- Confirm that measurement ranges and uncertainties are fully covered by the QMS (often via coordination with a "QS Chair" if different);
- Participate in the inter-regional (JCRB) review of CMCs submitted by other RMOs;
- Monitor if any reviewer requests modifications/revision, liaise with the originating region to revise the submission as needed.

RMO TC/WG Chair's roles in comparisons

- Support or facilitate their RMO in proposing suitable key or supplementary comparisons in their measurement field to the relevant CC;
- Help to identify and prioritise comparison programmes in their RMO;
- Assist in connecting (or "linking") between RMO comparisons and the broader international key comparisons.
- Ensure the comparison design and scheduling is appropriate (pilot labs, artefacts, methods);
- Assist participants, ensure involvement and technical readiness;

- Oversee the conduct of the comparison (measurement execution, data collection, analysis);
- Ensure final reports are prepared, reviewed, approved and entered into the database;
- Ensure comparison results are used as evidence linking to CMC submissions;
- Monitor that comparison results consistent with CMCs already declared in the KCDB.

RMO TC/WG management and communication

RMO TC/WG Chairs interact widely with other components of the CIPM MRA framework, to ensure consistency of practices in CMC reviews and comparisons. Their communication and coordination roles include:

- Act as interface to the Consultative Committee WGs (at CC level) in technical matters, e.g. when CC-level guidance or interpretation is needed;
- Coordinate with RMO leadership, and with BIPM / JCRB Executive Secretary / KCDB, especially for scheduling and procedural issues;
- Help guide potential or new RMO TC/WG Chairs (mentorship, sharing experience);
- Maintain regular communication with the pilot laboratory, participants in the comparison (both regional and inter-regional), the KCDB office, the RMO's TC/WG on QS structures (for corrective actions and CMC impact);
- Promote awareness of guidelines, documentation (e.g. CIPM MRA guidance documents and CC specific documents) among member NMIs / DIs in their region;
- Encourage good practice in submission of evidentiary support, improvements of measurement capabilities, etc.

2. Overview

This three-day interactive training is designed to support RMO TC/WG Chairs in fulfilling their roles within the framework of the CIPM MRA. It focuses on developing a shared understanding and practical skills for implementing CIPM MRA processes.

Based on CIPM MRA guideline documents, CC-specific guidance, KCDB reference materials and case studies from the user community, the programme combines lectures, discussions and hands-on simulations using the KCDB-CBKT learning tool.

The training follows a logical sequence, beginning with the engagement of NMIs and DIs in the CIPM MRA and progressing through the processes of comparisons and CMCs to the best practices of RMO TC/WG management and communication.

Knowledge transfer is achieved through lectures and presentations, followed by hands-on sessions using the KCDB-CBKT learning tool (*a simulation of the CMC review process covering possible cases and outcomes*) and practical sessions on resolving disputed CMCs through case studies of disagreements arising during reviews.

2.1 Learning outcomes

By the end of the training, participants can:

- gain awareness of current developments and future directions in global metrology, including the BIPM, the CIPM Strategy, and the BIPM Work Programme
- refresh their understanding of the objectives, structure and operation of the CIPM MRA and the roles of the BIPM, JCRB, CCs, and RMOs;
- refresh their knowledge of the CMC acceptance criteria and the CMC review process within and across RMOs, including dispute resolution;
- refresh their knowledge of coordinating comparisons in order to effectively organize activities, address discrepancies and link results to CMCs;
- use the KCDB and KCDB-CBKT learning tool to simulate the CMC review and publication process;
- share best practices across RMOs to enhance the global consistency and efficiency of TC/WG operations within the frame of the CIPM MRA;
- stay informed about KCDB 2.0 updates, JCRB outcomes and ongoing developments in the CIPM MRA framework.

2.2 Target Audience

- RMO TC/WG Chairs and Vice-Chairs
- New appointed or potential TC/WG Chairs

2.3 Date and venue

- Details of the schedule, including the dates, are provided when available.
- BIPM HQ, Sevres

2.4 Course Structure & Topics

The standard programme is outlined below and may be subject to updates or adjustments.

DAY 1 – Foundations of the CIPM MRA and international metrology

TOPIC 1: International metrology and strategic developments

- Overview of the international metrology system
- The CIPM Strategy and the BIPM Work Programme — priorities and implications for RMOs
- Emerging themes in international metrology
- Collaboration with partners and related activities addressing global cross-cutting challenges

Interactive session:
Reflection: the evolving role of RMOs and TC/WG Chairs in the global metrology system

TOPIC 2: Overview of the CIPM MRA framework

- Objectives, structure and benefits of the CIPM MRA
- Key documents and CC-specific guidelines
- Roles of the BIPM, JCRB, CCs and RMOs within the CIPM MRA
- Outcomes and processes: CMCs review and comparisons
- KCDB

TOPIC 3: RMO Guidelines on CMCs and comparisons / practices

- Intra-regional CMC review process
- Obligations of CMC Writers and comparison pilots
- Responsibilities in supporting CMCs review process and comparisons
- Common challenges in coordination and communication across RMOs
- Communication with CCs, CMC Writers, Reviewers, comparison pilots

Interactive session:
Discussion: Identifying shared challenges and collaborative solutions.

Day 2 – RMO TC/WG Chair's responsibilities within the CIPM MRA

TOPIC 4: CMCs: criteria, review and dispute resolution

- CMC acceptance criteria and review processes (intra-RMO and JCRB)
- Evidence required for supporting CMCs (QMS and Technical)
- Roles and responsibilities of TC/WG Chairs in coordinating reviews
- Engagement of reviewers (creating of a reviewer's pool)
- CMC review deadlines
- Grey out and reinstatement of CMCs
- Modification of existing CMCs / withdrawal / change of scope: Procedures when NMIs want to modify or withdraw CMCs, how the TC/WG Chair handles such cases
- Cases: "CMCs slipping through the JCRB review" and "Hanging CMCs"

Interactive session:
KCDB-CBKT learning tool exercise: Simulation of the CMC review process with various outcomes.
Case study: Consistency, transparency and trust: Managing disputed CMCs across RMOs.

TOPIC 5: Comparisons: Organization, Coordination and linking to CMCs

- Key and supplementary comparisons (CIPM and RMOs)
- Planning, coordination and execution (linking RMO with the broader international key comparisons)
- Evaluating comparison results and uncertainty
- Comparison reports / approval / publication
- Monitoring comparison results
- Addressing discrepancies
- Linking comparison results to CMCs
- Comparisons older than 5 years (cause of delay, actions to address the delay)

Interactive session:
Discussion: how TCs/WGs coordinate comparisons or assist pilots in practice.
Case study: Managing disagreements and resolving disputed CMCs.

Day 3 – TC/WG management, RMO practices and Future outlook

TOPIC 6: TC/WG management, RMO practices and Experience sharing

- Transition management of TC/WG Chairs
- Planning, conducting and documenting TC/WG meetings
- Tracking actions, performance metrics, and deadlines
- Sharing RMO practices: case examples (structures, coordination mechanisms, and meeting cycles) from different regions

  Sharing practices on how TC/WG Chairs support countries and economies with emerging metrology systems

Interactive session:
Peer exchange: "How do you organize and conduct TC/WG meetings in your RMO?"
Sharing of practices, meeting formats and documentation approaches.

TOPIC 7: Future outlook and continuous improvement

- Updates on KCDB 2.0 features and planned enhancements
- Mining of the BIPM Website (including KCDB statistics)
- Key outcomes from recent JCRB meetings
- Developments in the CIPM MRA documentation
- Comparison reports: *Moving from Technical supplement to the bipm.org*
- Global digital transformation and the SI

TOPIC 8: Developing good-practice guidance (closing activity)

- Reflection and personal commitments.

Interactive session:
Group exercise: "good-practice guidance"
Consolidate information from the three days into practical, actionable guidance for TC/WG operations. Focus on CMC review, comparison coordination and TC/WG management.

3. Core reference documents

Participants are encouraged to review the relevant materials and documents before the session, as these provide essential background information on the topics covered.

CIPM MRA documents are available on the CIPM MRA documents page of the BIPM website at: http://www.bipm.org/en/cipm-mra/cipm-mra-documents/

- *CIPM MRA- P-11 (Overview and implementation of the CIPM MRA)*
- *CIPM MRA- P-12 (Coordination within the CIPM MRA: Consultative Committees, Regional Metrology Organizations, JCRB)*
- *CIPM MRA- P-13 (Participation in the CIPM MRA: National Metrology Institutes, Designated Institutes, International organizations)*
- *CIPM MRA-G-11 (Measurement comparisons in the CIPM MRA: Guidelines for organizing, participating and reporting)*
- *CIPM MRA-G-12 (Quality management systems in the CIPM MRA: Guidelines for monitoring and reporting)*
- *CIPM MRA-G-13 (CMCs in the context of the CIPM MRA: Guidelines for their review, acceptance and maintenance)*
- *Help on the KCDB:* https://www.bipm.org/en/cipm-mra/kcdb-help

After the Summer School, presentations are made available on the appropriate CBKT webpage of the BIPM website. Participants can access this page using their BIPM website credentials.

4. Activity and participation

Effective learning can only take place when everyone actively participates and freely expresses his/her ideas as well as being enthusiastic and well prepared. Ask, share, and challenge! All attendees must respect the lecturers and other participants.

Participation

Participants are expected to attend all sessions. Attendance is recorded and reported to the relevant RMO. Participants should notify the CBKT team by email if they are unable to attend a session.

5. Certification of completion

On the final day of the Summer School, participants are awarded a Certificate of Participation for their attendance.

6. Copyright information

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