



CIPM MRA Review Process

Open two-tier peer review secures scientific outcomes and recognition

National Metrology Institutes (NMIs) from around the world that participate in the CIPM MRA demonstrate their capabilities to the international measurement community by publishing their data in the BIPM key comparison database (KCDB). The KCDB holds data on Calibration and Measurement Capabilities (CMCs) and comparison results. A two-tier peer review process must be completed before CMCs or comparison results can be published in the KCDB. This process ensures the scientific integrity of all data published from CIPM MRA activities.

Why is reviewing necessary?

The CIPM MRA is an arrangement seeking to build on trust and mutual recognition of capabilities among participating institutes. This trust and mutual recognition are underpinned by the comprehensive peer review processes specified in the CIPM MRA. The CMCs and comparison results undergo this two-tier peer review.

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How does the review of comparison results assure their quality?

Comparisons organized by a CIPM Consultative Committee or by a Regional Metrology Organization (RMO) provide the central mechanism to deliver technical evidence to support an NMI's metrological capabilities. The two-tier peer review process for comparison results is performed on the draft reports that are produced by the pilot institute. The first stage of the two-tier process is the review of the Draft A report by all participants. The Draft A report is circulated among the participants only after all the individual participants have submitted their results to the pilot institute, without knowing the other participants' results. Once the Draft A has been circulated to all participants by the pilot institute, the disclosed results are discussed, and the determined degrees of equivalence are reviewed by the participants. Following approval, the Draft A becomes the Draft B report. The second stage of the review process involves the Draft B being circulated to the corresponding CIPM Consultative Committee working group on key comparisons (or another appropriate working group that has been delegated the right to review) and reviewed, after which it becomes the Final report and published in the KCDB.

How does the review of CMC submissions assure their quality?

The international acceptance of an NMI's metrological capabilities as expressed by CMCs is assured by a two-tier peer review process for CMCs: the intra-RMO review and the JCRB review. NMIs submitting their CMCs to the KCDB for publication are members of an RMO. It is this RMO that arranges the first review stage, known as the intra-RMO review. This review is performed by relevant technical experts within the RMO and coordinated by the Chair of the technical committee of the metrology area. The CMC is reviewed against transparent acceptance criteria, which are documented in the CIPM MRA-G-13 guidelines. The criteria are based on whether the CMCs are underpinned by the technical evidence and quality management system. Following the acceptance of a CMC by the intra-RMO review it is transferred to the second stage; the JCRB review. The JCRB review is performed by technical experts from other RMOs. A CMC is only accepted for publication in the KCDB after approval through the JCRB review.

For more information:

BIPM website: <https://www.bipm.org/en/>

CIPM MRA documents: <https://www.bipm.org/en/cipm-mra/cipm-mra-documents>

CIPM MRA-G-11 'Measurement comparisons in the CIPM MRA: Guidelines for organizing, participating and reporting'

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

KCDB: <https://www.bipm.org/kcdb/>