



# Designated Institutes participating in the CIPM MRA

## Expectations and nomination form

CIPM MRA-D-06

Version 1.1



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## 1. Preamble

*This document describes the role and expectations for Designated Institutes participating in the CIPM MRA. The nomination form for designation, to be completed by the designating authority, is appended.*

National metrology institutes (NMIs) have the responsibility of maintaining the national measurement standards and disseminating the SI units nationally (i.e. they provide metrological traceability). The CIPM MRA, signed by the Directors of the NMIs, provides a peer review system to facilitate international recognition of national measurement standards and calibration and measurement capabilities (CMCs), including the calibration certificates issued by NMIs. In many countries the NMI shares this responsibility with one or more Designated Institutes (DIs), which, like the NMI, operate at the top of the national metrology system. DIs play a crucial role in complementing the fields of activities of the NMI and bring in expertise in metrological areas not covered by the NMI, thus making an efficient use of the available national resources.

These additional DIs participate in the CIPM MRA within their limited area of activity in the same way as the NMIs. After successfully undergoing the same review process their CMCs are accorded the same recognition and can be published in the Key Comparison Database (KCDB).

Participating in the CIPM MRA as a DI requires resources and causes additional workload for other CIPM MRA participants. Experience also shows that DIs with very narrow scopes find it difficult to engage effectively at the international level. Alternative ways of satisfying metrological traceability, not involving the creation a DI, may be more appropriate when national demand for metrological traceability in a particular area of metrology is limited.



## 2. Designated Institute in Appendix A of the KCDB

### 2.1. Designation of a Institute

Institutes should only be designated if they have appropriate metrological experience and scientific expertise, and:

- a) hold (or will hold) and maintain national measurement standards, and
- b) will deliver metrological traceability through the provision of calibration services and/or reference materials in a well-defined metrology area, and on an equal basis to all customers, and
- c) will act in a similar way as the NMI within a limited and well defined area of metrology, and understand and accept the obligations of participation in the CIPM MRA, and
- d) are appropriately resourced and sufficiently stable for their role within the national measurement system and as a DI within the CIPM MRA.

The designation must be done by the authorised body of the State or Economy, that is:

- a) the responsible ministry or authority within the government, or
- b) the NMI, if authorised to do so by its government.

Performance of the DI with respect to the CIPM MRA should be monitored.

### 2.2. Notification to the BIPM of a Designated Institute

The body in the State or Economy authorised to designate any additional institute(s) is charged with informing the BIPM of the designation using the form given in Appendix I. This form provides the necessary information for the DI to be listed in Appendix A of the KCDB.

### 2.3. Communication with the Designated Institute and notifying the RMO

The Joint Committee of the Regional Metrology Organizations and the BIPM (JCRB) Executive Secretary will send the new Designated Institute a welcome letter, detailing the expectations for their active participation in the CIPM MRA. The letter will be copied to the



CIPM MRA signatory of the State or Economy, and to the Chairperson and Secretariat of the relevant Regional Metrology Organization (RMO).

Where special arrangements have been made for NMIs that are not members of a recognised RMO, those arrangements shall also apply to any DI from that State or Economy.

### 3. General Guidelines

This section is intended to provide a better understanding of the expectations and requirements which need to be understood when designating an institute, and expand upon the information already given above. The NMI, which will usually have a good understanding of the CIPM MRA, can advise on the need for and selection of new DIs. Involving the NMI in this decision also helps to ensure that the scope of designation meets national requirements and is complementary to that of the NMI.

The metrological scope and responsibilities of the NMI and other DIs of the same State or Economy must always be clearly differentiated. DIs cannot claim calibration and measurement capabilities already declared under the CIPM MRA by other participating institutes (NMI or other DI) in the same State or Economy. It follows that the scope of the designation must be specified and CMCs offered by DIs must be complementary (in terms of measurands or ranges) and not overlapping with those of other DIs or the NMI in the country. It is the responsibility of the coordinating NMI, or the authority within the government responsible for the national metrological infrastructure, to ensure the complementarity. Before listing the new DI in Appendix A of the KCDB the JCRB Executive Secretary will confirm that the scope of the DI is sufficiently differentiated from other DIs or the NMI in the country.

The CIPM MRA addresses the dissemination of the units through calibration and the provision of reference materials. It is not intended to cover testing services, which are better addressed through accreditation (if international recognition is required, ideally by an accreditation body being a signatory of the International Laboratory Accreditation Cooperation (ILAC) MRA). More specifically services that are typically delivered by NMIs and DIs for disseminating the SI include:



- Calibration of transfer measurement standards and measuring instruments and issuing of calibration certificates.
- Provision of Certified Reference Materials (CRMs, also referred to in some countries as SRMs), including value assignment and certification, traceable to the SI or, where not (yet) possible, to other internationally agreed references.
- Assignment of traceable values to "in-house" reference samples of customers.
- Validation of measurement methods/procedures used for disseminating the SI to the end user, for example, as a part of an accreditation process of a calibration laboratory.
- Reference value assignment of Proficiency Testing samples (for the institutes own PT schemes and/or third party PT schemes).

The CIPM advises that the designation of an institute in the private sector needs special attention, stating that *“designating authorities should be aware that designating other laboratories in the private sector, may have a direct influence on the market position of other commercial companies in their own or even in other countries. Great care is needed to ensure that designation does not confer unfair market advantage.”*

Under the CIPM MRA designation is a sovereign right assigned to the appropriate national authority in the participating country or economy. Other than the correct completion of the registration process the BIPM does not judge whether an officially announced designation of a DI is in compliance with the criteria set in the CIPM MRA. The CIPM MRA assigns responsibilities (and workload) related to NMIs and DIs to the RMOs. Thus whilst the appropriateness of a DI is primarily a national responsibility, the RMOs play an important role in establishing that DIs are, in practice, able to satisfy the CIPM MRA criteria.

Since the sole purpose of designation is to allow participation in the CIPM MRA, DIs are expected to participate actively, including publishing CMCs in the KCDB within a reasonable time after its designation. More specifically DIs will be expected to:

- a) meet any specific requirements for membership/participation laid down by their RMOs to ensure CIPM MRA requirements are met;
- b) participate in appropriate measurement comparisons;



- c) operate a quality system complying with ISO/IEC 17025, (and for those producing reference materials, ISO 17034) and subject it to the CIPM MRA peer review process;
- d) declare their calibration and measurement capabilities (CMCs), and subject them to the CIPM MRA peer review process;
- e) participate in relevant technical committee activities of their RMO, and if relevant CIPM Consultative Committee(s);
- f) contribute to the CIPM MRA processes as reviewers (within their scope of designation).

Drawing up CMCs and submission of CMCs for review shall follow the standard practice as described in the CIPM MRA-D-04. In order to declare CMCs, Designated Institutes must:

- a) participate in relevant measurement comparisons organized by the Consultative Committees of the CIPM and/or the Regional Metrology Organizations (RMOs) in order to demonstrate the international equivalence of standards as well as technical competence within the designated areas of activity. Guidelines on measurement comparisons within the CIPM MRA are described in the CIPM MRA-D-05.
- b) have a Quality System (QS) that meets the appropriate international standard(s) and that has been approved by the RMO to which its country belongs. Guidelines for QS review are drawn up by each of the RMOs (following principles established by the JCRB).

The calibration certificates that are issued within the scope of CMCs published in the KCDB are recognized by all participants in the CIPM MRA and may (after authorisation, as described in CIPM MRA-D-02) bear the CIPM MRA logo <http://www.bipm.org/en/cipm-mra/logo/>.

Institutes participating in the CIPM MRA and wishing to publish CMCs in the KCDB should note and consider the following points concerning traceability [5]:

- Traceability to the SI can be via the laboratories' own primary realisation or alternatively via services offered by another recognized NMI/DI or laboratory



participating in the CIPM MRA, and publishing CMCs for these services in the KCDB. Details can be found on specific CIPM documents published by the BIPM.

- Traceability at the national level cannot come via an institute not being an NMI/DI (irrespective of whether it is accredited or not-accredited).
- Traceability at the national level cannot come via CRMs delivered by an institute that is not an NMI/DI.

A list with exceptions to this can be proposed by the relevant CC, approved by the CIPM, and published by the BIPM.

- Whilst PT schemes are very useful for benchmarking performance and creating awareness of measurement competence, obtaining “satisfactory” results in a comparison or in a PT scheme does not in itself demonstrate metrological traceability to the SI.

#### 4. Withdrawal from the Arrangement

Withdrawal from the Arrangement is allowed for in paragraph 11.2 of the CIPM MRA. Withdrawal is presumed to be within the prerogative of the same authority (or any successor) that originally approved the entry of the NMI or DI into the CIPM MRA. Once the BIPM has received confirmation of withdrawal, the status of the DI will be removed from Appendix A of the CIPM MRA and any CMCs will be permanently deleted from the KCDB. Information on removal of the status of the DI from the CIPM MRA and deletion of CMCs from the KCDB is sent to the authorising body and the CIPM MRA signatory of the State or Economy, and to the Chairperson and Secretariat of the relevant RMO.

#### 5. List of acronyms

CC	Consultative Committee
CIPM MRA	Mutual Recognition Arrangement
CMC	Calibration and measurement capabilities
DI	Designated Institute





JCRB	Joint Committee of the RMOs and the BIPM
KCDB	Key Comparison Database
ILAC	International Laboratory Accreditation Cooperation
NMI	National Metrology Institute
QS	Quality System
RMO	Regional Metrology Organization

## 6. Related documents

[CIPM MRA](#) - Mutual recognition of national measurement standards and of calibration and measurement certificates issued by national metrology institutes

[CIPM MRA-D-02](#) - Use of the CIPM MRA logo and certificates statement

[CIPM MRA-D-04](#) - Calibration and Measurement Capabilities in the context of the CIPM MRA

[CIPM MRA-D-05](#) - Measurement comparisons in the CIPM MRA

[CIPM MRA-G-02](#) - JCRB guidelines for the monitoring and reporting of the operation of quality systems by RMOs

## 7. Revision History

Version number	Date of Issue/Review	Summary of change
1	2015-01-07	Suppressed documents:
		JCRB-P-05      Procedure for the Registration of Designated Institutes Participating in the CIPM MRA
	CIPM/2005-07      NMIs and other Designated Institutes	
	2015-03-19	Agreed by the JCRB
1.1	2017-03-16	Changes in references. Approved by JCRB

## Nomination of a Designated Institute

Name of State/Economy: \_\_\_\_\_

Name of body that has the authority to designate: \_\_\_\_\_

Name of the institute to be designated (DI): \_\_\_\_\_

DI legal entity: \_\_\_\_\_

*(if different from above)*

DI Acronym: \_\_\_\_\_ DI website: \_\_\_\_\_

DI mailing address: \_\_\_\_\_

Post code: \_\_\_\_\_ City: \_\_\_\_\_ Tel/Fax: \_\_\_\_\_

Contact Person at DI: \_\_\_\_\_

Contact Person's e-mail: \_\_\_\_\_

Metrology area of designation\*: \_\_\_\_\_

Note that within the meaning of the CIPM MRA only one institute per State or Economy can be designated for any given metrology area\*\*

*We confirm that we have the authority to designate within the meaning of the CIPM MRA and this designation is compatible with the spirit, rights and obligations of the CIPM MRA and with document CIPM MRA-D-06. Furthermore we confirm that the organization being designated understands and accepts the rights and obligations of designation.*

Your name and position within the designating body: \_\_\_\_\_

\_\_\_\_\_

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

**Please return to:**

BIPM Pavillon de Breteuil

F-92312 Sèvres Cedex, France

e-mail: [cfellag@bipm.org](mailto:cfellag@bipm.org); [jcrb\\_es@bipm.org](mailto:jcrb_es@bipm.org)

\* **Chemistry, photometry, force, flow, volume, radioactivity, etc.**

\*\*The metrological responsibilities of Signatory NMIs and other designated institutes of the same State or Economy must always be clearly differentiated. If within a State the Signatory NMI and a DI both have responsibilities within the same metrology area, the designation scope must be specified in sufficient detail to distinguish their responsibilities. This should be done using the classification of services as available on the BIPM website at <http://www.bipm.org/utis/en/pdf/CMCs-Classification-of-services.pdf>

*Note: Starting date of participation in the CIPM MRA will be considered as the date when the BIPM receives the signed designation form and it is this date that the BIPM will display.*