



# Members and Associates (March 2023)

The Republic of Costa Rica, which had been an Associate since 2004, became a Member State on 5 September 2022.



The Republic of Zimbabwe was reinstated as an Associate of the CGPM on 8 February 2022.

- 63 Member States\* and
- 38 Associates of the CGPM  
*(States and Economies)*

*\* The official term is "States Parties to the Metre Convention"; the term "Member States" is its synonym and used for easy reference.*

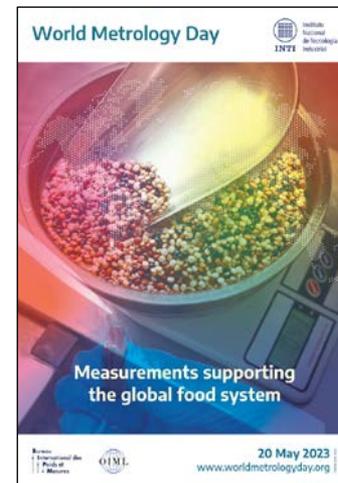
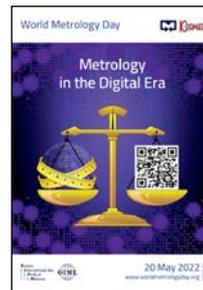
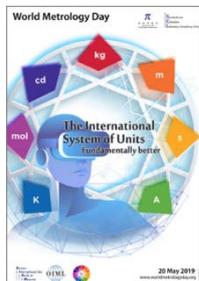
## 251 Institutes participating in the CIPM MRA

- 97 National Metrology Institutes + 3 Ministries
  - 64 Member States
  - 36 Associates
- 4 International organizations (ISA, IAEA, JRC, WMO)
- plus 150 Designated Institutes

**1 814 comparisons**  
1143 KCs, 671 SCs

**25 821 CMCs**  
Peer-reviewed declarations

# World Metrology Day



2017

2018

2019

2020

2021

2022

2023

<http://www.worldmetrologyday.org/>



# World Metrology Day

- The theme of World Metrology Day in 2023 is *“Measurements supporting the global food system”*

- Partner RMO is SIM

<https://www.worldmetrologyday.org/index.html>

- *translations* into 7 local poster versions, next to French and English
- Listing of events open to countries/institutions

# World Metrology Day: UNESCO initiative



The UNESCO Executive Board took a key step towards recognizing 20 May - World Metrology Day at their session on 13 October 2022, following the proposal presented by Kazakhstan (prepared by the BIPM and the OIML) and supported by 42 UNESCO Member States.

The decision will need to be ratified by the 42nd session of the UNESCO General Conference to be held in November 2023.

If all goes to plan, UNESCO will proclaim 20 May of each year as a UNESCO world day which will then be celebrated every year from 20 May 2024.

# International



## International rulemaking for the future

The BIPM participated in the OECD event "*International organizations: Supporting Countries to Anticipate, React and Rebuild in the Face of Global Disruptions*" for the heads of Secretariats of international organizations (IOs) on 5 December 2022.

The BIPM future plans for universal adherence to the Metre Convention was highlighted.

More information on the partnership can be found at <https://www.oecd.org/governance/better-international-rulemaking/>.

# Digital Transformation

## Digital Transformation

Joint Statement of Intent *On the digital transformation in the international scientific and quality infrastructure*

### Joint Statement of Intent

### "On the digital transformation in the international scientific and quality infrastructure"

The joint statement provides a platform for the signatory organizations to come together to indicate their support, in a way appropriate to their particular organization, to the development, implementation, and promotion of the SI Digital Framework as part of a wider digital transformation of the international scientific and quality infrastructure.

The joint statement is part of an ongoing initiative by the CIPM and its Task Group on the Digital SI (CIPM-TG-DSI) to develop and establish a world-wide uniform and secure data exchange format based on the International System of Units (SI).

Signed by: CIE, CODATA, IEC, ILAC, IMEKO, ISC, ISO, OIML

# The Data Plane: Findable and Accessible



User-driven applications

Measurement services

Others

Others

NMI applications

International Metrology Resource Registry

Digital Calibration Certificates (DCCs)

Others

BIPM registry and portal services

KCDB: CMCs

KCDB: KCs, SCs

JCTLM database

UTC data

New services

...

BIPM digital references

Standard frequencies data

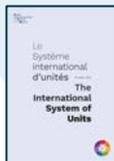
Temperature scales data

Data for realizing the kilogram

Data for realizing other SI units

...

BIPM core references

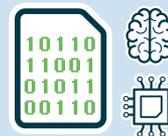


SI brochure + Agreed realization protocols

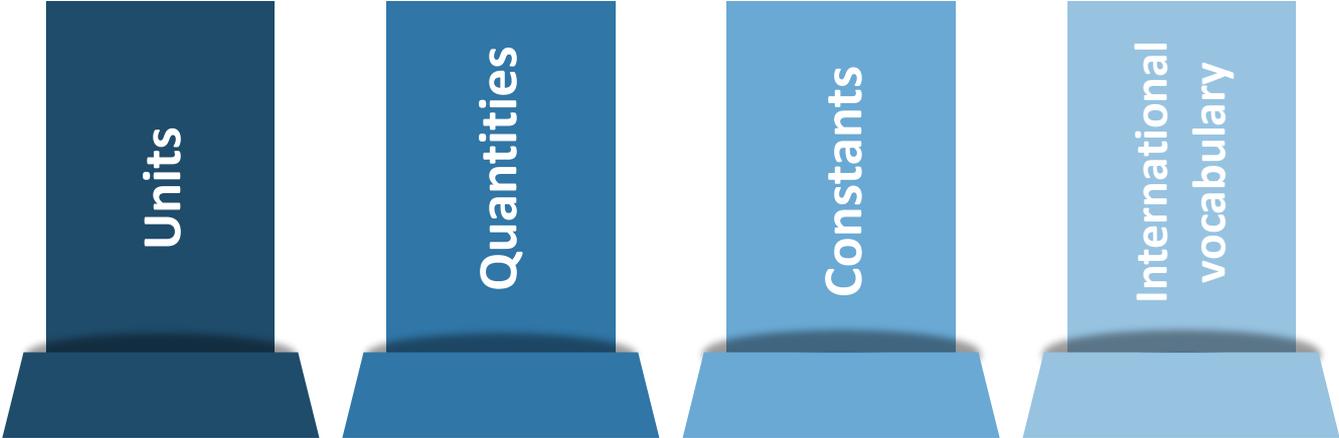
Fundamental constants data



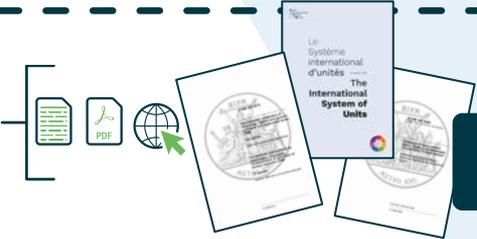
Encoding line



# The Interoperability Plane: Interoperability and Reusability



BIPM core references



VIM

SI brochure

GUM



# e-Learning –courses



<https://e-learning.bipm.org/>

A “training platform” operated by the BIPM, able to host both BIPM and RMO e-learning material.

- bespoke e-learning solution based on the Moodle - Open-Source software
- 840 users in the platform
- 4 RMOs have joined the initiative: APMP, COOMET, EURAMET, GULFMET
- 17 courses from BIPM and participating RMOs are available today
- Self-registration system

...accessible around the clock and on any device

# Technical exchanges

The screenshot shows the KCDB website interface. At the top, there is a navigation bar with the KCDB logo and the text "All data listed in the KCDB have been reviewed and approved within the CIPM Mutual Recognition Arrangement". Below the navigation bar, there are four tabs: "CMCs", "COMPARISONS", "NEWS", and "STATISTICS". The "COMPARISONS" tab is currently selected. Under "Calibration and Measurement Capabilities - CMCs", there is a search bar with the text "Type a keyword" and a "SEARCH" button. Below it, there is a link to "Advanced search". Under "Key and supplementary comparisons", there is a search bar with the text "Type a keyword or identifier" and a "SEARCH" button. Below it, there is a link to "Advanced search". The "News" section displays three news items, each with a date of 17 FEBRUARY 2023 and a brief description. The "Statistics" section features a world map with colored regions and labels for various CMCs: SIM, EURAMET, CODOMET, GULFAMET, APMP, and AFRIMETS. Below the map, it states "Currently in the KCDB there are" and shows two statistics: "251 CIPM MRA participants" and "1143 key comparisons".

## KCDB 2.0 - Online technical exchanges – CMC Writers and Reviewers

This webinar is designed to support the KCDB CMC Writers and Reviewers from General Physics, Ionizing Radiation and Chemistry and Biology fields.

Two 2-hour sessions (morning and repeated in the afternoon)

### Programme highlights:

- Introduction to KCDB 2.0
- CMC Writer user account
- Creation of new CMCs
- Update existing CMCs
- Reviewer dashboard
- CIPM MRA requirements
- Machine-readable links to CMCs

**23<sup>rd</sup> March 2023:**

Morning session: 08:00 UTC - [registration](#)

Afternoon session: 15:00 UTC - [registration](#)



# Knowledge Transfer through *Metrologia*



Knowledge Transfer initiative through funding the open-access publication of selected review papers in *Metrologia*

## METROLOGIA REVIEW - OPEN ACCESS

**The irony of the magnet system for Kibble balances - a review**

### Authors:

Li S., Schlamminger S.

→ [Metrologia 59 \(2022\) 022001](#)

SPONSORED BY: NIST (US)

## METROLOGIA REVIEW - OPEN ACCESS

**The new *mise en pratique* for the metre - a review of approaches for the practical realization of traceable length metrology from  $10^{-11}$  m to  $10^{13}$  m**

### Authors:

Schödel R., Yacoot A., Lewis A.

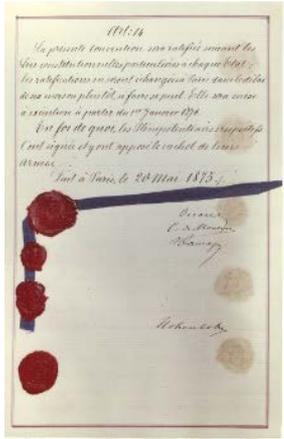
→ [Metrologia 58 \(2021\) 052002](#)

SPONSORED BY: PTB (DE)

This initiative highlights the service rendered to the world-wide metrology community by senior scientists devoting time to publishing review papers on topics of interest and these papers being made openly available to all through Open Access publication in *Metrologia*.

Authors interested in proposing a review paper for open-access publication are invited to contact the Editor of *Metrologia*.

The Metre Convention was signed in Paris by 17 nations on **20 May 1875**



We are planning a number of events in Paris in the week of 20<sup>th</sup> May 2025.

To celebrate the achievements of 150 years of metrology by the BIPM since the signature of the Metre Convention.

To present a new vision and strategy for the BIPM for 2030 and beyond developed by the CIPM.

To promote metrology to the widest possible global audience.

**“to assure the international unification and perfection of the metric system”**

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“The High Contracting Parties ... wishing to assure the international unification and perfection of the metric system ...

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(States and Economies)



The CGPM ... invites the CIPM

“to examine the current application of Article III of the Metre Convention and report to the CGPM at its 28th meeting on how ... to facilitate lasting and universal adherence to the Convention”

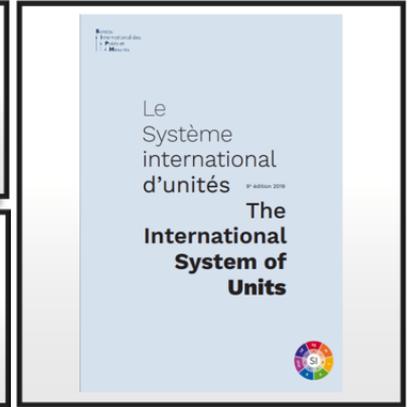
27<sup>th</sup> CGPM, 2022

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## “Digital transformation”



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