

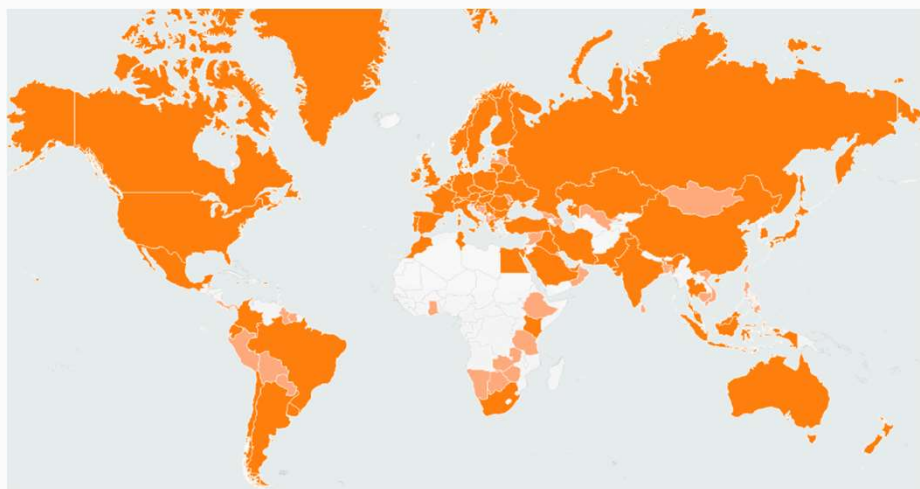
Report from the BIPM

to SIM General Assembly

November 2022

Andy Henson
Director, ILC Department, BIPM

Member States and Associates (May 2022)



- 64 Member States*
- 36 Associates of the CGPM
(States and Economies)

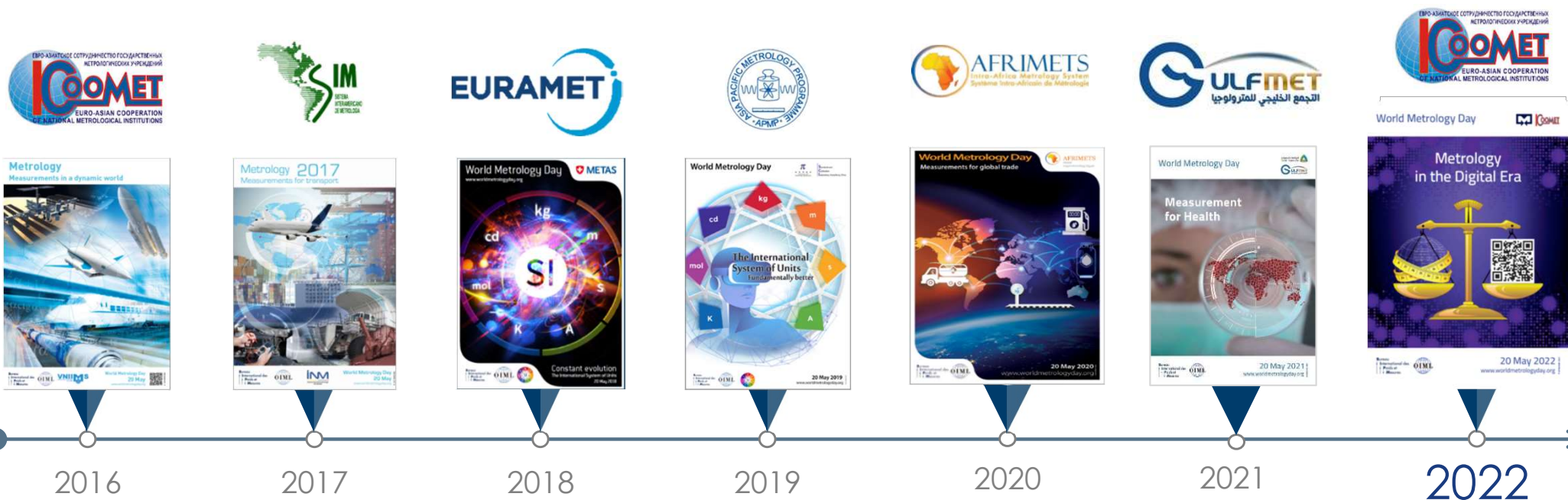
** The official term is "States Parties to the Metre Convention"; the term "Member States" is its synonym and used for easy reference.*

There are 250 institutes participating in the CIPM MRA, comprising 97 NMIs, 4 international organizations and 149 designated institutes International organizations

1 801 comparisons
1137 KCs, 664 SCs

25 938 CMCs
Peer-reviewed declarations

World Metrology Day



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

www.bipm.org

Topic in 2023 will be *Measurements and the global food system*

World Metrology Day

World Metrology Day



- The 2022 poster was designed by the National Scientific Centre "Institute of Metrology", Ukraine (in association with COOMET).
- *translations* into 44 local poster versions, plus French and English
- Listing of 32 events hosted by countries/institutions

World Metrology Day - UNESCO Initiative



Our thanks to Kazakhstan who are leading the initiative to have World metrology day recognized each years as a UNESCO world day.

Thanks also to the 40+ states that supported Kazakhstan in the UNESCO Executive Board.

Final step with be the adoption at the 42nd session of the UNESCO General Conference November 2023.

UNESCO takes a key step towards recognizing World Metrology Day

The UNESCO Executive Board took a key step towards recognizing World Metrology Day at their session on 13 October 2022, following the proposal presented by Kazakhstan and supported by the BIPM and OIML. 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.

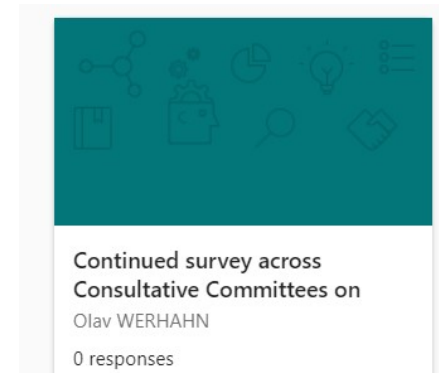
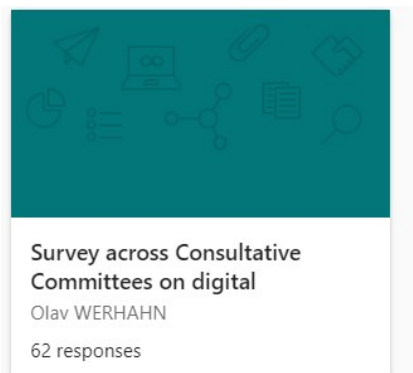
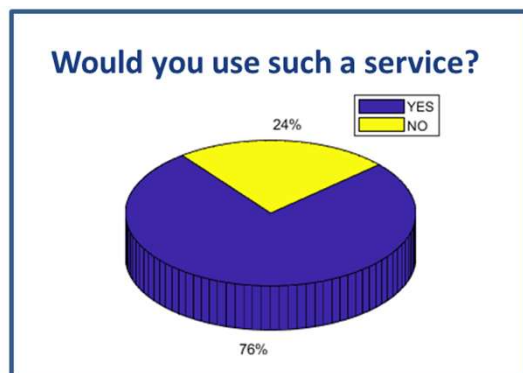
The recognition of World Metrology Day by UNESCO will open new opportunities for the BIPM and OIML to promote World Metrology Day. It has already raised support from a number of UNESCO Member States that do not currently participate in BIPM or Regional Metrology Organization (RMO) activities. This stimulates opportunities for the BIPM to explore their participation within the context of the mission towards "Universal adherence" proposed in Draft Resolution F at the 27th meeting of the CGPM in November 2022. It will also open the possibility for the BIPM to request part of its 150th Anniversary events in 2025 to be hosted at UNESCO and thereby opening it to a truly global audience.

The BIPM expresses its sincere thanks to Ambassador Gulsara Arystankulova and Counsellor Rysbek Alibekov at the Permanent Delegation of the Republic of Kazakhstan to UNESCO in Paris who sponsored the proposal at the Executive Board and lobbied for support amongst Member States.

One of the key drivers bringing the Kazakhstan's economy onto the global arena is aligning the national metrology infrastructure with the global metrology framework led by the BIPM and the OIML. Today, Kazakhstan actively participates in the activities of these scientific and legal metrology organizations, and we would like to emphasize that our metrology system contributes to the economic performance of our country and improves the quality of life of our citizens.

We have followed this path to finally understand how important metrology is for our economy and our people. We have States in our region which are in a period of transition, and which also need to develop their national metrology infrastructure and integrate it into the world metrology system. The 20th of May in 1875 was symbolic for the world. The nations came together and signed the Metre Convention, formalizing international collaboration in measurement science.

Survey on **Digital transformation** for metrology



CCL Survey - Digitalised SI metre

www.bipm.org

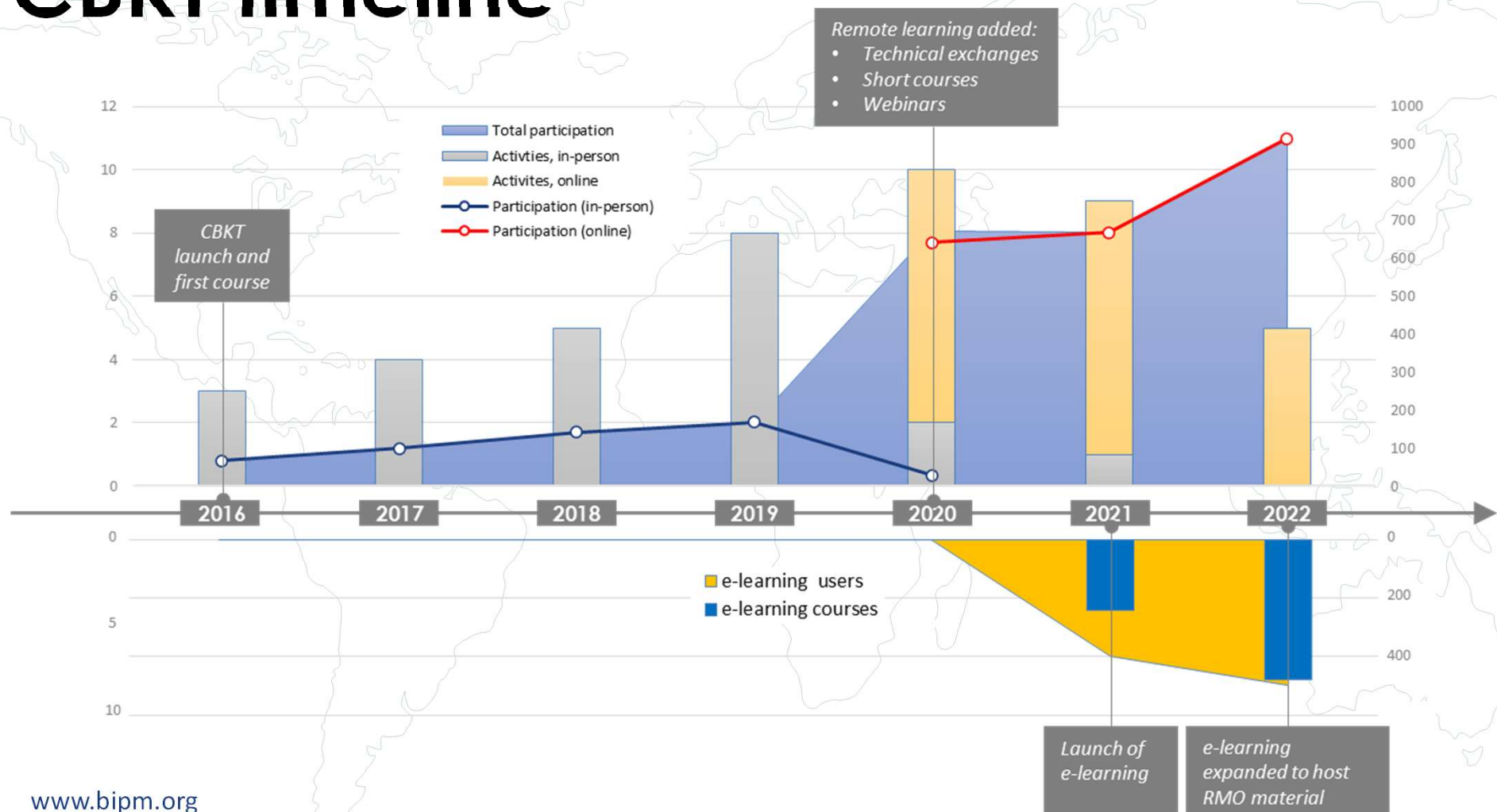
Survey across Consultative Committees on digital transformations

CCAUV + CCEM
in one round

2nd run Survey across Consultative Committees on digital transformations

Remaining CCs results in
and being analyzed

CBKT timeline



CBKT stats

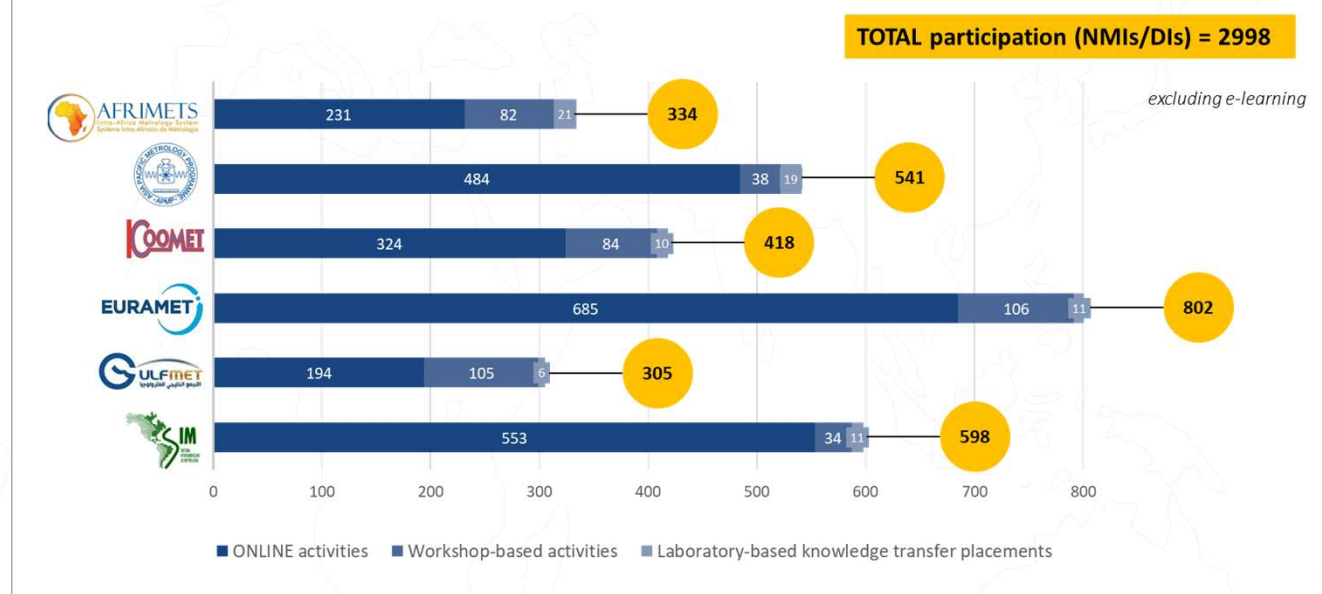
Events: Jan 2020-Oct 2022:

- 1 Workshop based course at the BIPM
- 2 project placements
- 6 webinars
- 17 technical exchanges (11 of them repeated in the afternoons to cover all time zones)

Participation: Jan 2020-Oct 2022:

- 2471 NMI/DI community
- 604 Accreditation community
- + 600 registered participants in e-learning

CBKT Participation by RMO (global)



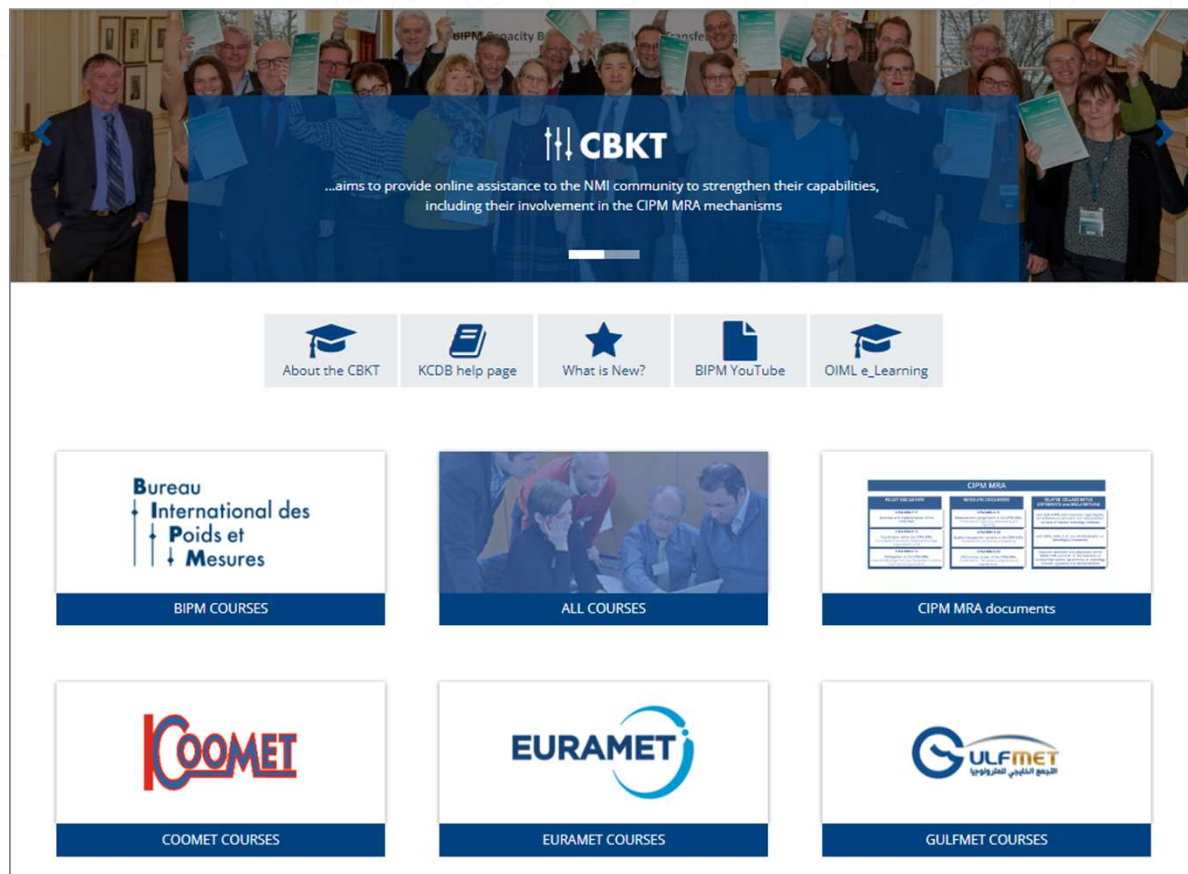
Feedback collected from every course:

- without exception feedback highly positive
- presented in detail to the CIPM Secretary as part of the QMS review

e-Learning

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

*...accessible around the clock
and on any device*



CBKT
...aims to provide online assistance to the NMI community to strengthen their capabilities, including their involvement in the CIPM MRA mechanisms

About the CBKT KCDB help page What is New? BIPM YouTube OIML e_Learning

Bureau International des Poids et Mesures
BIPM COURSES

ALL COURSES

CIPM MRA documents

COOMET
COOMET COURSES

EURAMET
EURAMET COURSES

GULFMET
GULFMET COURSES

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

- **bespoke e-learning solution** based on the Moodle - Open-Source software
- **670 users** in the platform (as of June 2022)
- **3 RMOs** have joined the initiative: COOMET, EURAMET, GULFMET
- **“on boarding” support** for RMOs (trainings for course creators of each RMO + provide guideline document)
- **16 courses** from BIPM and participating RMOs are available today

e-Learning –courses

16 courses from BIPM and participating RMOs are available today

PROVIDER ▼

- ☐ BIPM
- ☐ COOMET
- ☐ EURAMET
- ☐ GULFMET

TOPIC AREA ▼

- ☐ Quality Infrastructure
- ☐ CIPM MRA
- ☐ Miscellaneous
- ☐ Mass and Related Quantities
- ☐ Chemistry and Biology
- ☐ Ionizing Radiation
- ☐ Time and Frequency

COURSE ACCESS ▼






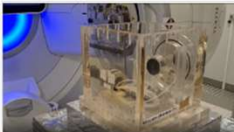






- ☐ Open
- ☐ Restricted

LANGUAGE ▼

- ☐ English
- ☐ Russian

Q Search courses

12 results

 FTIR Analysis for Gas Standards BIPM MORE DETAILS	 SSDL and ISO/IEC 17025:2017 GULFMET MORE DETAILS	 Annual Reporting within EURAMET TC-Q EURAMET MORE DETAILS	 CIPM MRA BIPM MORE DETAILS
 Dissemination of the kilogram following its redefinition BIPM MORE DETAILS	 How to enter a CMC claim for ionizing radiation metrology BIPM MORE DETAILS	 Information about COOMET activities COOMET MORE DETAILS	 ISO 4037:2019 - Radiological protection reference field GULFMET MORE DETAILS
 Non Structure-Related Impurity Content in Organic Pure Materials BIPM MORE DETAILS	 Realization of the kilogram following its redefinition BIPM MORE DETAILS	 Small Volume Comparisons EURAMET MORE DETAILS	 Информация о деятельности COOMET COOMET MORE DETAILS

e-Learning – new courses

BIPM CBKT e-learning courses on the kilogram. The courses describe how to realize the mass unit and how the kilogram is disseminated following its redefinition.



<https://e-learning.bipm.org/course/index.php>

e-Learning – “on boarding” for the RMOs

Training for RMO e-learning administrators and course creators was organized for:

- EURAMET
- GULFMET
- COOMET

Each provided training on:

- operating the RMO Sector
- creating content

This training material is available on the e-learning RMO Sectors

Bureau
International des
Poids et
Mesures

CBKT guideline:

Publication of training material
on the BIPM e-learning platform

- guidance for participating RMOs

CBKT
v. 18/01/2022
<https://e-learning.bipm.org/>
BIPM

This guideline document has been developed to help RMO administrators and course creators who manage the RMO Sectors and publish the e-learning material (course) on the BIPM e-learning platform.

This document will guide you through the key features including how to assign copyright and all aspects of course registration.

Please note, this document may be periodically updated as experience increases and based on the feedback we receive.

1. How to access to the RMO Sector

RMOs' appointed administrators and course creators can have access the RMO Sector and course management, after they have been assigned by their RMOs and allocated appropriate authority by the BIPM.

When you logged in, you will be presented with the landing page. To access to your RMO Sector **go to your RMO tile on the front page, for example, EURAMET COURSES >** and then select **Manage this category** command (see example, Figure 1).

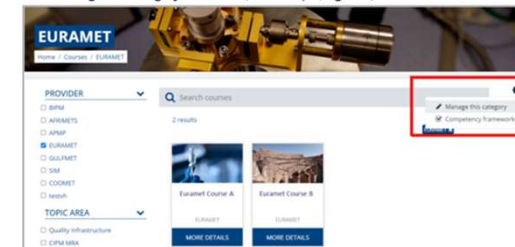


Figure 1. Manage category command

2. RMO Sector

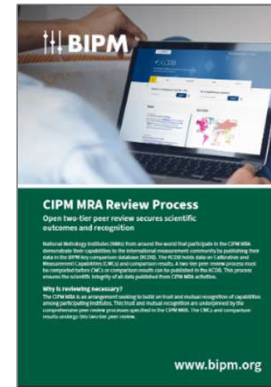
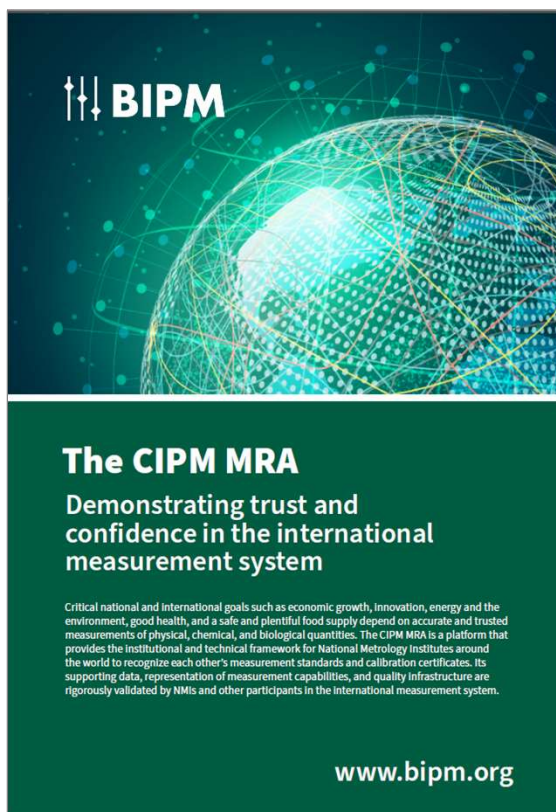
The RMO Sector shows your RMO courses that available or that are in development. **RMOs can have access to manage and create courses only in their own RMO Sector.** The general functionalities available to sector administrators and course creators are identical except that the sector administrators have the permission to approve courses, and thus make them publicly visible on the platform (see Section 4).

Version 0.1

1 / 8

19/01/2022

The CIPM MRA brochures



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., Schlamming 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*.

<https://www.bipm.org/en/committees/cb/cbkt/cbkt-metrologia-initiative>

Planned Project -

Joint BIPM and OIML knowledge transfer initiative

The aim is to:

- support countries and economies with emerging metrology systems (CEEMS) in the implementation of their national metrology systems through the prism of the OIML and BIPM document - *“National Metrology Systems - Developing the institutional and legislative framework”*
- underpin the CGPM’s Draft Resolution F *“On universal adherence to the Metre Convention”*, which is likely to stimulate increased interest in metrology systems in the number of CEEMS countries

Outputs of the initiative:



- e-learning interactive course compatible with the BIPM’s and OIML’s e-learning platforms and published on both;



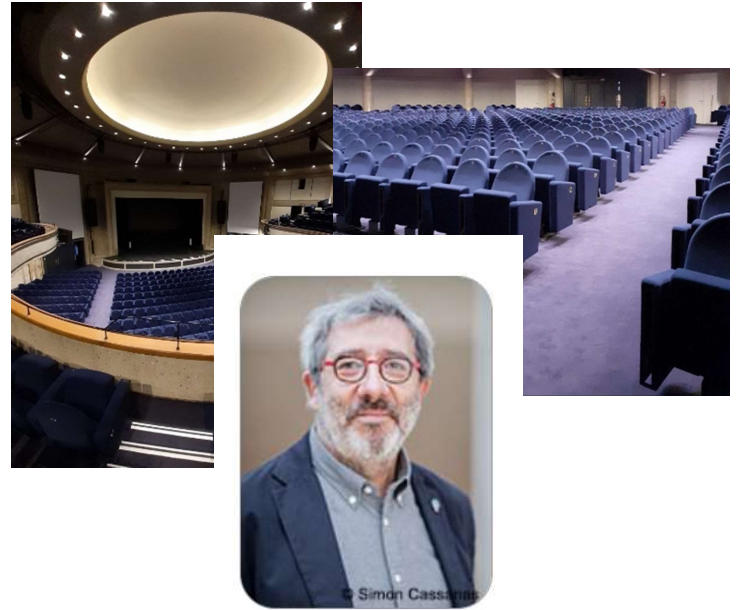
- brochure with inserts (written in accessible way) and published on BIPM and OIML websites.

The 27th meeting of the CGPM

At the
Palais des Congrès, Versailles
15th to 18th November 2022

Chaired by the
Président of the Académie des sciences
Prof Patrick Flandrin

Official convocation has been sent to
Embassies in Paris of States Parties and Associate
States and Economies
with copies to NMIs and State representatives accredited in
2018
Documents uploaded, some only accessible by those whose
credentials have been submitted!



Draft resolutions developed by the CIPM

- A. On the evolving needs for metrology
From the CIPM Strategy Sub-committee
- B. On the digital SI framework and new (digital) missions for the BIPM
From the CIPM Task Group on the Digital-SI Framework
- C. New SI prefixes
From the Consultative Committee for Units
- D. On the use and future development of Universal Coordinated Time (UTC)
From the Consultative Committee for Time and Frequency
- E. On the future re-definition of the second
From the Consultative Committee for Time and Frequency



Draft resolutions developed by the CIPM (cont.)

F. On universal adherence to the Metre Convention

From the CIPM; requesting a mandate for future strategy development

V. The dotation of the BIPM for the years 2024 to 2027

From the CIPM



Development of the **CIPM Strategy**

CGPM 2022

Five resolutions to improve the system and advance the SI

CGPM requested to mandate CIPM to develop proposals and to consult on broader participation

Consultation with CCs and stakeholders on Strategy reports

CIPM 2022-2026

CIPM consults with Member States and the community on popular new vision/mission, model for broader participation, investigate best practice for IOs

Concludes and Presents Strategy 2030+ to the community in 2025

CGPM 2026

Member States agree on:

- modernising the organisation, new vision/mission
- structures,
- funding models,
- broader participation

for full implementation

Timetable proposed for the 27th meeting of the CGPM (2022)

v7b2

Tuesday 15th November	Wednesday 16th November	Thursday 17th November	Friday 18th November
Presentation of credentials (in person and online)	[09h15 - 10h30] Invited talk (#3) health/life sciences + Report from JCTLM Invited talk (#4) - Pandemic preparedness Liaison talk (#1) Report from CCRI	[09h15 - 10h30] Invited talk (#6) - Economic impact of QI on regulation Report from CCL Invited talk (#7) - Digital Transformation Liaison talk (#2)	[09h15 - 10h30] Invited talk (#10) - Implementing the rev'd SI Report from CCM Invited talk (#11) - Metrology for energy networks Report from CCEM
Coffee/Tea	Coffee/Tea (30 min)	Coffee/Tea (30 min)	Coffee/Tea (30 min)
[11h00 - 12h45] Opening session Opening speeches Agreement of "Special procedure" Report by the CIPM President Report by the BIPM Director	[11h00 - 12h45] Reporting session Report on BIPM Finance and Pension Presentation of proposals for 2024-27 WP Intro to Res F Invited talk (#5) - Metrology and QI	[11h00 - 12h45] Reporting session Summary of discussion at the Informal Dotation meeting (CIPM Pres.) Report from CCU Intro to Res C (SI prefixes) Intro to Res B (Digital-SI Framework) Liaison talk (#3) from OIML	[11h00 - 12h45] CGPM closed session (I) Presentation of Res V (Dotation) Opening of voting on CIPM and CEC (with explanation of method)
Lunch (75 min)	Lunch (75 min)	Lunch (75 min)	Lunch (75 min)
[14h00 - 15h30] Reporting session Intro to "Emerging Needs" and Res A (G Rietveld) Invited talk (#1) - Climate (inc feedback from Climate Conf) Report from CCQM	[14h00 - 15h30] Closed session for dotation discussion Informal meeting on the BIPM Dotation 2024-27	[14h00 - 15h30] Reporting session Invited talk (#8) - Requirements for timescales Invited talk (#9) - Optical clocks Report from CCTF Intro to Res D and E	[14h00 - 15h30] CGPM closed session (II) Voting on resolutions Voting on dotation Results of voting on CIPM and CEC Plans for the 150th anniversary (CIPM Pres.)
Tea/Coffee (30 min)		Tea/Coffee (30 min)	
[16h00 - 17h00] Invited talk (#2) Reports from CCPR and CCT		[16h00 - 17h00] Liaison talk (#4) Report from CCAUV Report from the JCRB	

Communication plan

16th Feb 2022	<u>On-line information meeting for State Reps</u>
22nd -24th March 2022	Meeting of the CIPM (<i>held online</i>)
May 2022	CIPM President writes to State Reps proposing agenda for a preparation meeting and for an informal CGPM dotation committee.
21st - 22nd June 2022	Meeting of the CIPM (<i>held in Sevres</i>)
6th Sept 2022	<u>On-line information meeting for State Reps</u>
Sept 2022	Publication of “near final version” of the Work Programme and “Highlights and Notes” to support dotation discussions at the CGPM.
15th - 18th Nov 2022	<u>27th CGPM meeting held in Versailles</u> (<i>with online participation</i>)



Governance issues being addressed by the CIPM

Actions completed (on Modernising the Organization)

- **Rules of Procedure for the CIPM** have been agreed and published on the website. After a legal opinion of who is delegated by the Convention to sign legally binding documents, the RoP was amended in 2021.
- **Code of Conduct for the CIPM** has been approved and published.

Actions in response to the work of the ad-hoc SR WG

- Decision by correspondence.

*“Considering the response to comments on the text for a draft resolution prepared by the ad-hoc Working group of State representatives in February 2022, and in accordance with the First Article of the Metre Convention, the CIPM recalled its decision 107-06 and **decided to recommend the use of the term “Headquarters” (in French Siège) whenever it is required (for example in formal or informal documents) to refer to the scientific and technical staff and facilities at the Pavillon de Breteuil**”.*

Thank you

