Report from the BIPM Director

Bureau International des Poids et Mesures

Dr Martin MILTON

01 – Major steps forward in liaison with IOs

World Metrology Day now a UNESCO initiative

The UNESCO General Conference at its 42nd Session (November 2023) agreed to proclaim "World Metrology Day" on 20 May every year.

42 C/Resolution 21)

Many thanks to the Permanent Delegation of Kazakhstan and 43 UNESCO Member States:

21 Member States (out of 64): *Belarus, Brazil, Bulgaria, China, Hungary, Indonesia, Iran, Malaysia, Morocco, Pakistan, Poland, Republic of Korea, Russian Federation, Saudi Arabia, Serbia, Singapore, South Africa, Switzerland, Tunisia, Turkey, United Arab Emirates*

12 Associates of the CGPM (out of 36): *Albania, Azerbaijan, Bangladesh, Ethiopia, Ghana, Mauritius, Moldova, Mongolia, Sri Lanka, Syria, Uzbekistan, Viet Nam*

10 States that are not MS or AS: *Cameroon, Dominican Republic, Gabon, Jordan, Kyrgyzstan, Lebanon, Liberia, Myanmar, Palau, Turkmenistan*

World Metrology Day now a UNESCO initiative

unesco

Message from Ms Audrey Azoulay,
Director-General of UNESCO,
on the occasion of World Metrology Day

20 May 2024

Today, we mark a milestone in our collective pursuit of precision, accuracy and global uniformity in measurement. For the first time, UNESCO is celebrating World Metrology Day, which was officially recognized by our General Conference in November 2023.

Metrology, the science of measurement, has been an integral part of human civilization down through the ages. From the ancient cubit to the modern kilogram, the quest for standardized units has shaped our understanding of the world. A testament to our relentless pursuit of knowledge, it is at the heart of science – and also of scientific progress.

Harmonized measurements have their origins in the Metre Convention, signed on 20 May 1875, which laid the foundation for the metric system, and today transcends borders, cultures and disciplines. Later, in 1999, 20 May was designated by the International Committee for Weights and Measures as World Metrology Day. Since then, this annual celebration has sought to raise global awareness about the pivotal role metrology plays in our lives.

"At UNESCO, the lead United Nations agency for science, metrology underpins all our work. From mapping the ocean floor to assessing the volume of glacier melt in the Andes and Central Asia – two flagship initiatives by UNESCO – we depend on measurements as powerful tools to drive scientific discovery, technological innovation and sustainable development."

In line with the principles of our Recommendation on Open Science, we are also committed to ensuring that the knowledge we produce through metrology is accessible to scientists around the world.

The International Decade of Sciences for Sustainable Development, launched in 2024, is a crucial time to amplify these efforts. It aims to bring together policymakers, scientists and citizens to bridge gaps between scientific disciplines and develop solutions to the challenges facing our world.

As we celebrate this World Metrology Day, let us reflect on the
metrology: from energy conservation to public health, from trade fac
protection. Let us inspire the next generation, especially young wome
as a career, a path that combines science, technology and crea
challenges.

Together, let us measure our aspirations, calibrate our ambitions an
a more equitable, informed and sustainable world.

Happy World Metrology Day!

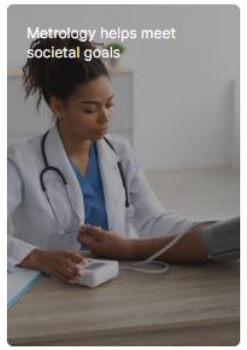
DG/ME/ID/20

Audrey Azoulay
UNESCO Director-General

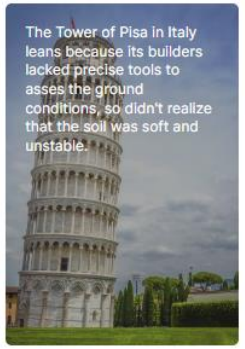
unesco

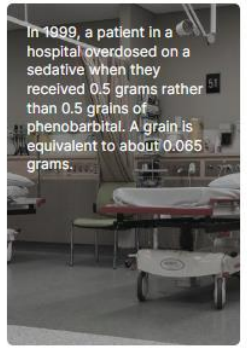
What is metrology?

Metrology is the scientific study of measurement. It allows us to set common standards for units and measuring instruments. Metrology has a wide range of applications, including navigation, construction, product development, environmental monitoring, medicine and food processing.



What can go wrong when the wrong units of measure are used





World Metrology Day - launch at UNESCO

Le 14 mai 2024, le BIPM a célébré la Journée mondiale de la métrologie au siège de l'UNESCO à Paris, lors d'un événement organisé avec l'OIML.

World Metrology Day – participation in 2024

56 Posters from member/associates and 35 events

Bahrain

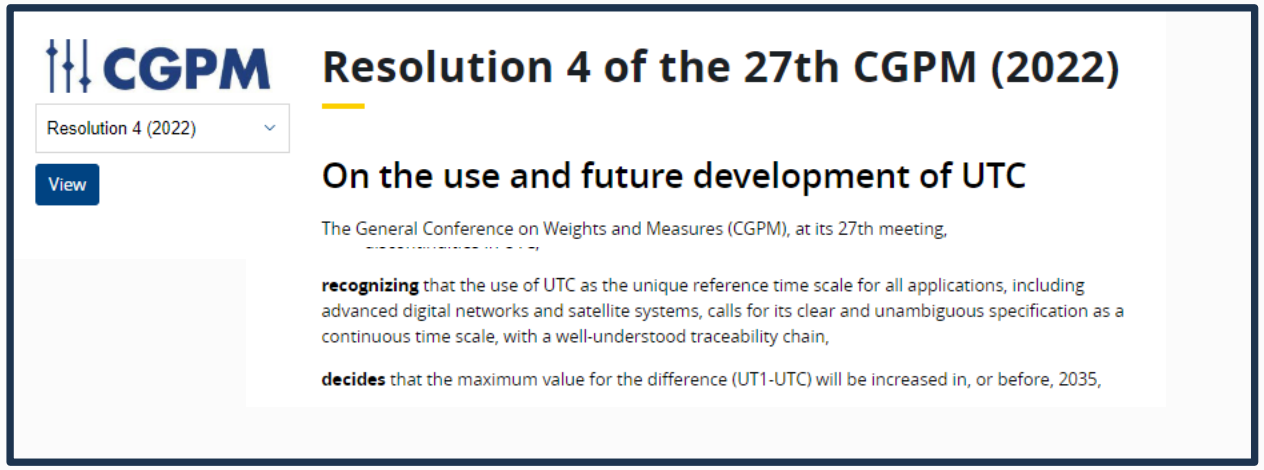
Tadjikistan

Nigeria

Jordan

Posters from non-member/associates

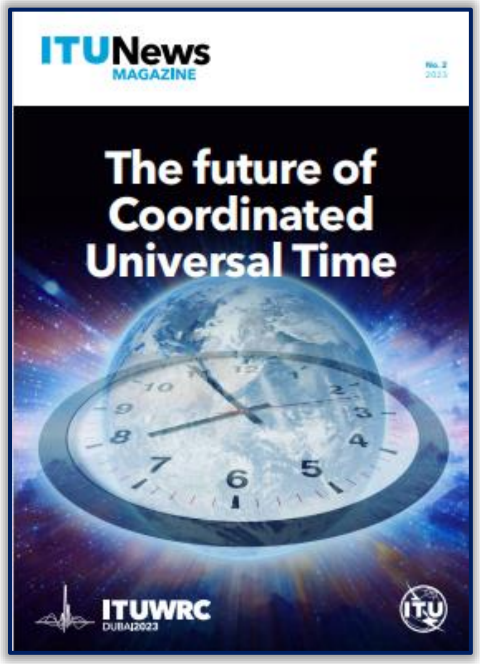
Towards continuous UTC – mandated by the CGPM (2022)



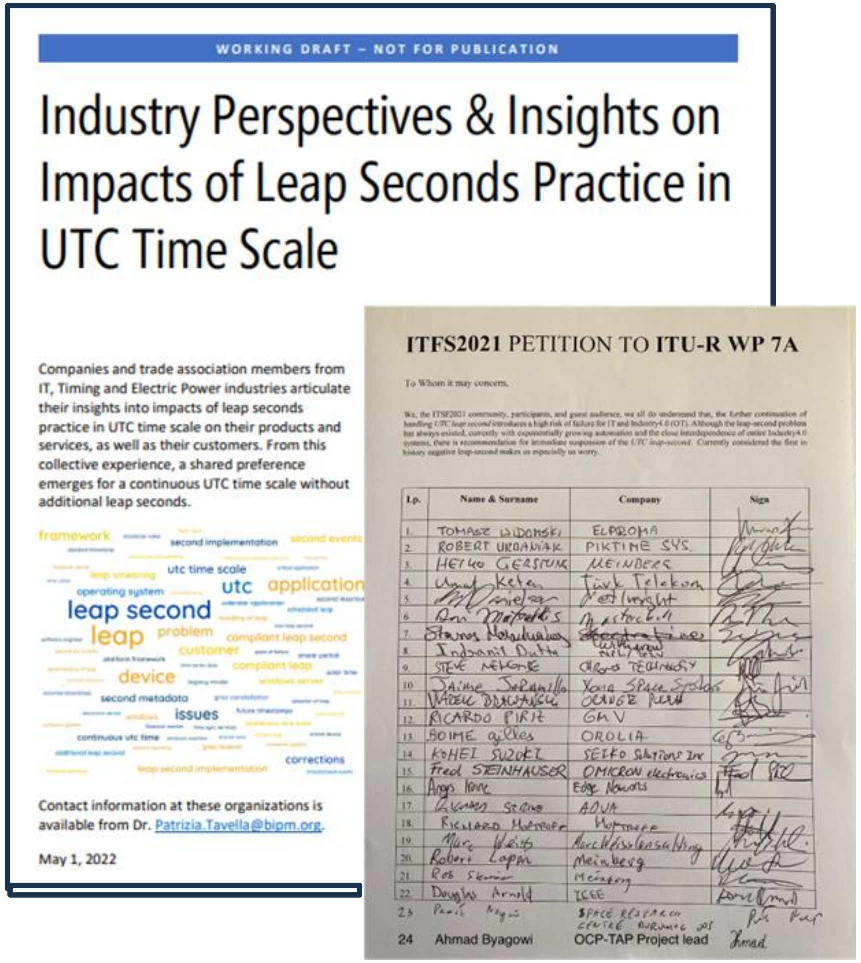
Bureau International des Poids et Mesures

Preparations for the **World Radiocommunications Conf** -2023

ITU publications and events



Industry publications and lobbying



WORKING DRAFT – NOT FOR PUBLICATION

Industry Perspectives & Insights on Impacts of Leap Seconds Practice in UTC Time Scale

Companies and trade association members from IT, Timing and Electric Power industries articulate their insights into impacts of leap seconds practice in UTC time scale on their products and services, as well as their customers. From this collective experience, a shared preference emerges for a continuous UTC time scale without additional leap seconds.

Contact information at these organizations is available from Dr. Patrizia.Tavella@bipm.org.

May 1, 2022

ITFS2021 PETITION TO **ITU-R WP 7A**

To Whom it may concern,

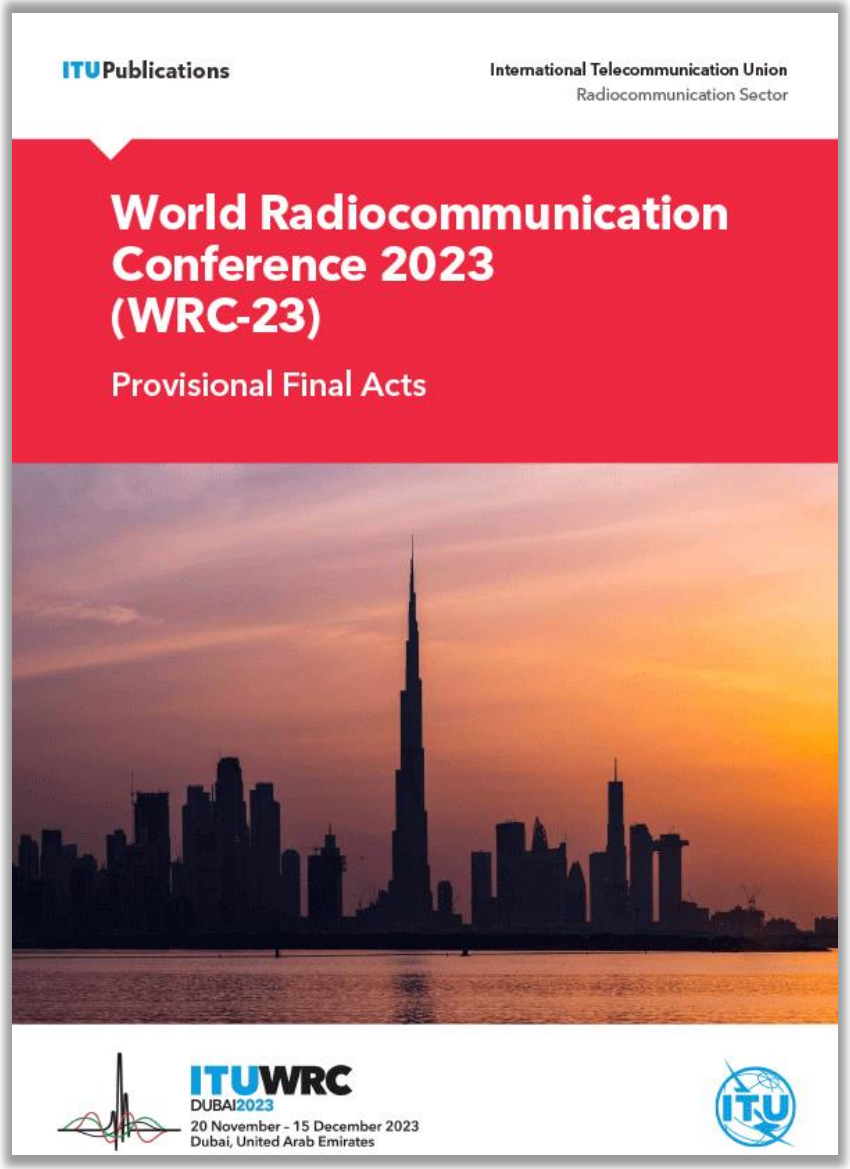
We, the ITSF2021 community, participants, and guest audience, we all do understand that, the further continuation of handling *UTC leap second* introduces a high risk of failure for IT and Industry4.0 (OT). Although the leap-second problem has always existed, currently with exponentially growing automation and the close interdependence of entire Industry4.0 systems, there is recommendation for immediate suspension of the *UTC leap-second*. Currently considered the first in history negative leap-second makes us especially us worry.

Lp.	Name & Surname	Company	Sign
1.	TOMASZ WIDOMSKI	ELPROMA	
2.	ROBERT URBANIAK	PIKTIME SYS.	
3.	HEIKO GERSTUNG	MEINBERG	
4.	[illegible] Keten	Türk Telekom	
5.	[illegible]	Netinsight	
6.	[illegible]	[illegible]	
7.	[illegible]	[illegible]	
8.	Indranil Dutta	[illegible]	
9.	STEVE NEWCOMBE	[illegible] TECHNOLOGY	
10.	JAIME JARAMILLO	Xona Space Systems	
11.	[illegible]	ORANGE [illegible]	
12.	RICARDO PIRIZ	GMV	
13.	BOIME gilles	OROLIA	
14.	KOHEI SUZUKI	SEIKO Solutions Inc	
15.	Fred STEINHAUSER	OMICRON electronics	
16.	[illegible]	Edge Networks	
17.	[illegible]	ADVA	
18.	RICHARD [illegible]	[illegible]	
19.	Marc Weiss	Marc Weiss Consulting	
20.	Robert Lopez	Meinberg	
21.	Rob [illegible]	Meinberg	
22.	Douglas Arnold	IEEE	
23	[illegible]	SPACE RESEARCH CENTER [illegible]	
24	Ahmad Byagowi	OCP-TAP Project lead	

Many thanks for support from:

- NMIs in CCTF from 20 Member States covering all regions who followed up with their national ITU delegations in 2022 and 2023.
- Other international organization including URSI, ITU-T, IGS, and the ITU-R Director.
- Digital companies such as Google, Facebook, and timing equipment manufacturers.

Resolution from the **World Radiocommunications Conf -**2023



Resolution from the **World Radiocommunications Conf -**2023

ITU Publications

International Telecommunication Union
Radiocommunication Sector

RESOLUTION 655 (REV.WRC-23)

Definition of time scale and dissemination of time signals via radiocommunication systems

The World Radiocommunication Conference (Dubai, 2023),

considering

a) that the ITU Radiocommunication Sector (ITU-R) is responsible for setting standards for the content and structure of time signals to be disseminated via radiocommunication systems, including the standard frequency and time signal service (SFTS) and the standard frequency and time signal-satellite service (SFTSS);

b) that the International Bureau of Weights and Measures (BIPM) is responsible for establishing and maintaining the second of the International System of Units (SI) and the reference time scale UTC with the SI second as its scale unit;

c) that the definition of reference time scale and dissemination of time signals via radiocommunication systems are important for applications and equipment that require a time traceable to the reference time,

considering further

a) that ITU-R has a liaison with the Consultative Committee for Time and Frequency (CCTF) and participates in the General Conference on Weights and Measures (CGPM) as an observer;

b) that BIPM is a Sector Member of ITU-R and participates in the relevant activities of ITU-R,

ITUWRC DUBAI2023
20 November - 15 December 2023
Dubai, United Arab Emirates

resolves

1 that, until the implementation of continuous UTC (see *recognizing g)*), UTC as described in Recommendation ITU-R TF.460-6 shall continue to apply;

2 that ITU-R cooperate further with BIPM, CIPM and CGPM in response to the consultation in *realizing*, to define a new maximum value for the difference between UT1 and UTC and on the implementation date for continuous UTC, possibly in 2035;

3 that ITU-R conduct studies, as appropriate, related to actions consequential upon *resolves* 1 and 2 to provide new and revised ITU-R Reports and Recommendations, such as, but not limited to, a revision to Recommendation ITU-R TF.460-6;

4 to establish a transition period for implementation and allow for the possibility to disseminate the increased difference between UT1 and UTC via radiocommunication system until 2035, but no later than 2040, in cases where existing equipment cannot be replaced earlier;

5 to maintain the name "UTC" as contained in Recommendation ITU-R TF.460-6 when it is revised,

instructs the Director of the Radiocommunication Bureau

to report on the progress of this Resolution to WRC-27,

Next step

A Resolution at the CGPM in 2026 to state the "new maximum value and the implementation date".

Promoting metrology to the **global climate community**

United Nations
Climate Change
COP 28
DUBAI UAE

COP28
UAE

- The first BIPM delegation to attend the United Nations Climate Change Conference (COP28) in November 2023.

- Set a foundation for collaboration with our liaison organizations (WMO, UNIDO etc) at future COP conferences.

Promoting metrology to the **global climate community**

United Nations
Climate Change
COP 28
DUBAI UAE

COP28
UAE

- The first BIPM delegation to attend the United Nations Climate Change Conference (COP28) in November 2023.
- Set a foundation for collaboration with our liaison organizations (WMO, UNIDO etc) at future COP conferences.

1st Stakeholders' Meeting of the CIPM Sectorial Task Group for Climate Change and Environment

400 participants, 80 speakers, 71 posters

Review of recommendations from 2022 workshop - >50% addressed by the NMI community.

Promoting metrology to the **global climate community**

1st Stakeholders' Meeting of the CIPM Sectorial Task Group for Climate Change and Environment

Quantifiable outputs … no. of regional/national/IO groups with NMI input

Type of Group/Project	Active Groups/Projects with a Metrology Component
CIPM Groups (BIPM)	CCQM* (GHG TG, Isotope TG, Spectra TG, Stability TG), CCRI* (TG on14C?), CCPR-TG*?, CCM-Flow*?
International Organization Groups/Projects	ISO TC 207/SC7/WG17*, WMO-GAW*, WMO-G3W, TCCON, COCCON, NDACC, CEOS
Regional Projects/Groups	ICOS, ACTRIS, MEDUSA, ESA–FRM4GHG, MetCTG*
National Projects	UK GEMMA*, China Initiative*, US initiatives*, Korean Initiative*, German Initiative

*Indicates involvement of at least one National Metrology Institute

Promoting metrology to the **global climate community**

1st Stakeholders' Meeting of the CIPM Sectorial Task Group for Climate Change and Environment

Quantifiable outputs … no. of regional/national/IO groups with NMI input

Type of Group/Project	Active Groups/Projects with a Metrology Component
CIPM Groups (BIPM)	CCQM* (GHG TG, Isotope TG, Spectra TG, Stability TG), CCRI* (TG on14C?), CCPR-TG*?, CCM-Flow*?
International Organization Groups/Projects	ISO TC 207/SC7/WG17*, WMO-GAW*, WMO-G3W, TCCON, COCCON, NDACC, CEOS
Regional Projects/Groups	ICOS, ACTRIS, MEDUSA, ESA–FRM4GHG, MetCTG*
National Projects	UK GEMMA*, China Initiative*, US initiatives*, Korean Initiative*, German Initiative

*Indicates involvement of at least one National Metrology Institute

Next steps …

Focus on technical/scientific input to the IPCC …

ipcc INTERGOVERNMENTAL PANEL ON climate change — WMO — UN environment programme

BIPM was granted IPCC observer status in 2024

- To support the work of the IPCC and its development of WG reports and the Seventh Assessment Report.
- To strengthen its links with the global network of measurement laboratories by encouraging experts to review draft IPCC reports and participate in IPCC processes as requested.

02 – Highlights in delivering the workprogramme

Overview of outputs 2020-2024

515 Calibrations certificates and Study notes issued by the BIPM

573 Participations in comparisons coordinated by the BIPM

87/61 Participations in the TIME comparisons (*Circular T*/ UTCr)

2770 Participations in Workshop- based CBKT activities

38 Participation in Laboratory-based CBKT (36 placements at the BIPM)

52 WP Secondees assisted to deliver the Work Programme projects

Overview of outputs 2020-2024

Growth in all output measures since 2016-2019

515 Calibrations certificates and Study notes issued by the BIPM

573 Participations in comparisons coordinated by the BIPM

87/61 Participations in the TIME comparisons (*Circular T*/ UTCr)

2770 Participations in Workshop- based CBKT activities

-

38 Participation in Laboratory-based CBKT (36 placements at the BIPM)

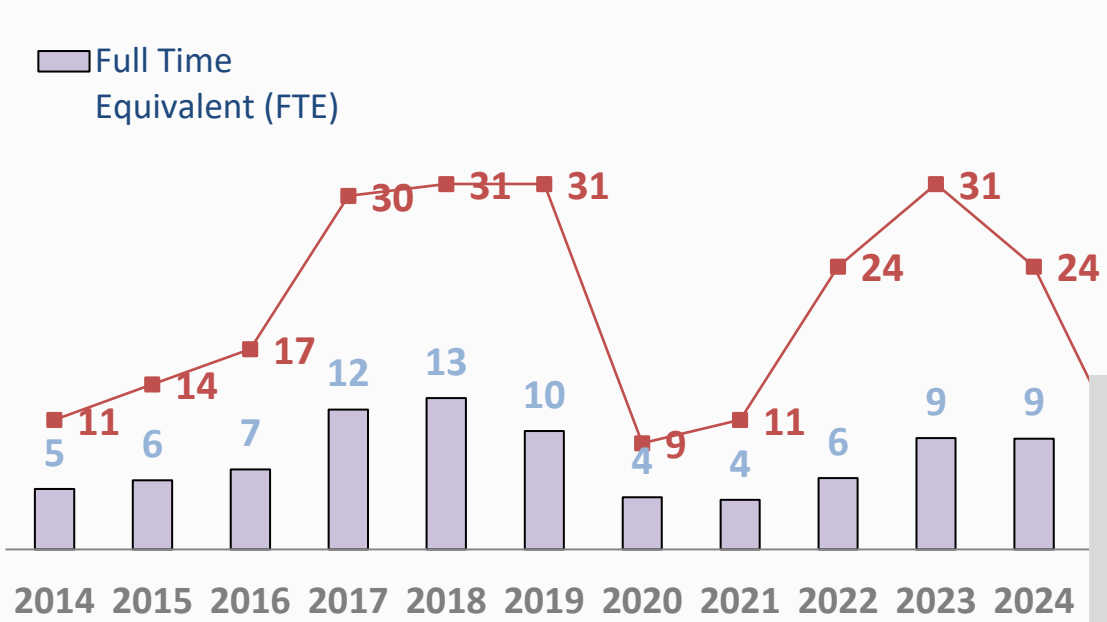
+40%

52 WP Secondees assisted to deliver the Work Programme projects

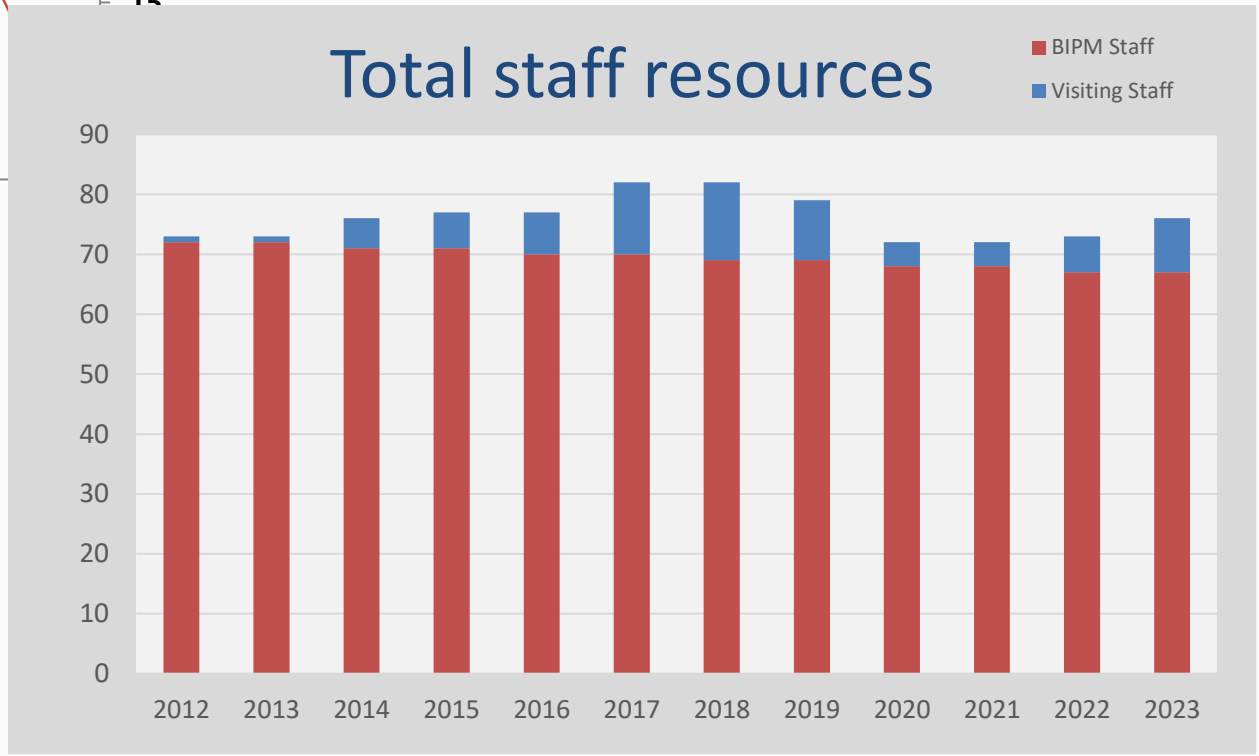
+21%

Growing our outputs that support NMIs **depends on support from NMIs**!

BIPM staff working with visiting staff



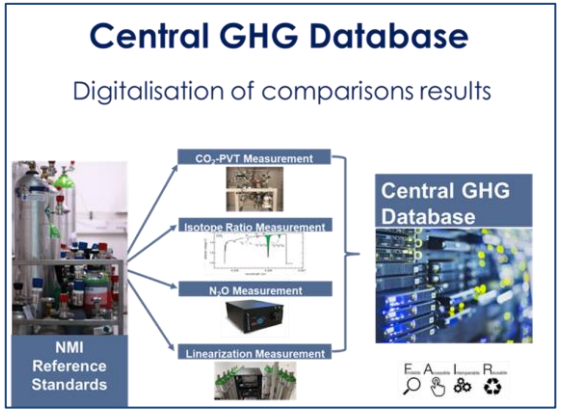
- 81% of seconded staff support the delivery of the work programme,
- 9% benefit from CBKT activities.



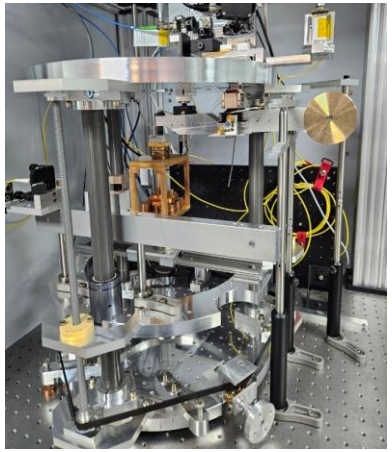
Laboratory highlights – joint technical projects with NMIs

Greenhouse Gas Comparisons - supported by joint technical projects with NMIs

- with NOAA (WMO-CCL) and VSL for GHG Standards Comparison Database.
- with NIM and KRISS providing secondees and standards for GHG in air comparisons
- with LACOMET and NPL for capacity building

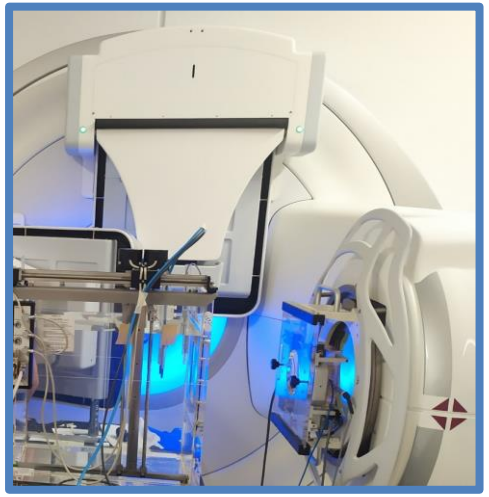


Next generation Kibble balance – with collaborators



- with Tsinghua Univ. (China) on design and manufacture of an advanced magnetic circuit.
- with secondee from NMIJ (Japan) on characterization of balance beam mechanism.
- BIPM staff member seconded for 5 months to NIST QEMMS team (Quantum Electrical-Mechanical Metrology Suite)

Ionizing radiation – building collaborations off site



Focus on use of off-site facilities for dosimetry

- high energy photon beams at DOSEO, Saclay (since 2017)
  – 8 comparisons (since 2017) and 17 calibrations (since 2020)

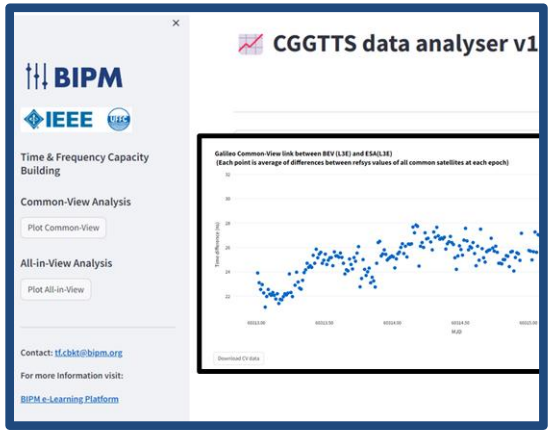
- 137Cs for radioprotection calibrations at IAEA, Seibersdorf (since 2023)
  – 3 comparisons (since 2023) and 2 calibrations (starting in 2024)

Developing the International Reference System (SIR) for radioactivity

- New SIR to replace the original one (dating from the 70s) with upgraded measurement capabilities and ULCA (**from PTB**)
- Copies of the SIRTI being built in collaboration **with SIM and APMP,** including new digital acquisition system
- Launch of the “Extended” SIR comparisons with 14 new isotopes including ^{14}C (support to climate change studies), ^{32}P (for radio medicine) and ^{225}Ac (new alpha therapies)

Laboratory highlights – knowledge transfer

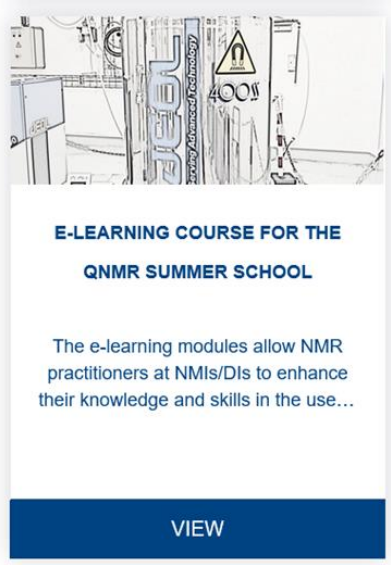
Capacity building project to improve the quality of the UTC time scale



- Target – to improve quality of UTC data and reduce needs for manual data corrections.
- E-learning course developed by secondees from NPLI, NICT and NIST.
- Workshop/training sponsored by APMP and EURAMET.

Bharath Vattikonda (NPLI), Yuko Hanado (NICT) and Tara Fortier (NIST)

1st BIPM Summer School on q-NMR methods for Primary Organic RMs



- One-week practical course at BIPM
- 16 NMI scientists from 15 countries
- Instructors: NMIJ, INTI, BAM, NIM, BIPM
- Now available as e-Learning modules online.

Laboratory highlights – new digital services

JCTLM in vitro diagnostic reference systems database: New web interface

- JCTLM database covers 90% of the most measured analytes
- New web-based submission and review interface to improve JCTLM processes - to be completed in 2025
- 80 000 € raised in 2023 from seven NMIs and two IOs (KRISS, HSA, NIST, NIM, NMIA, LGC, PTB, IFCC, ICSH

Digital data acquisition and reporting for ionising radiation

- Development, of a new platform for comparison of digital algorithms for radionuclide standardization, to validate data analysis software of digital acquisition systems. with secondees from INMETRO and NIM.
- Development of digital acquisition system (using PTB technology) and signal processing for the BIPM comparison services.
- New digital reporting format (in xml) for BIPM key comparisons.

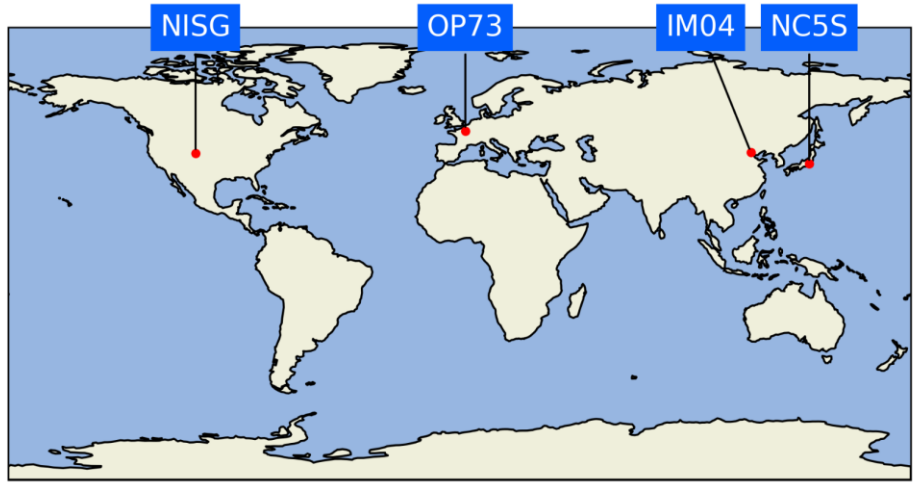
Laboratory highlights – digital services

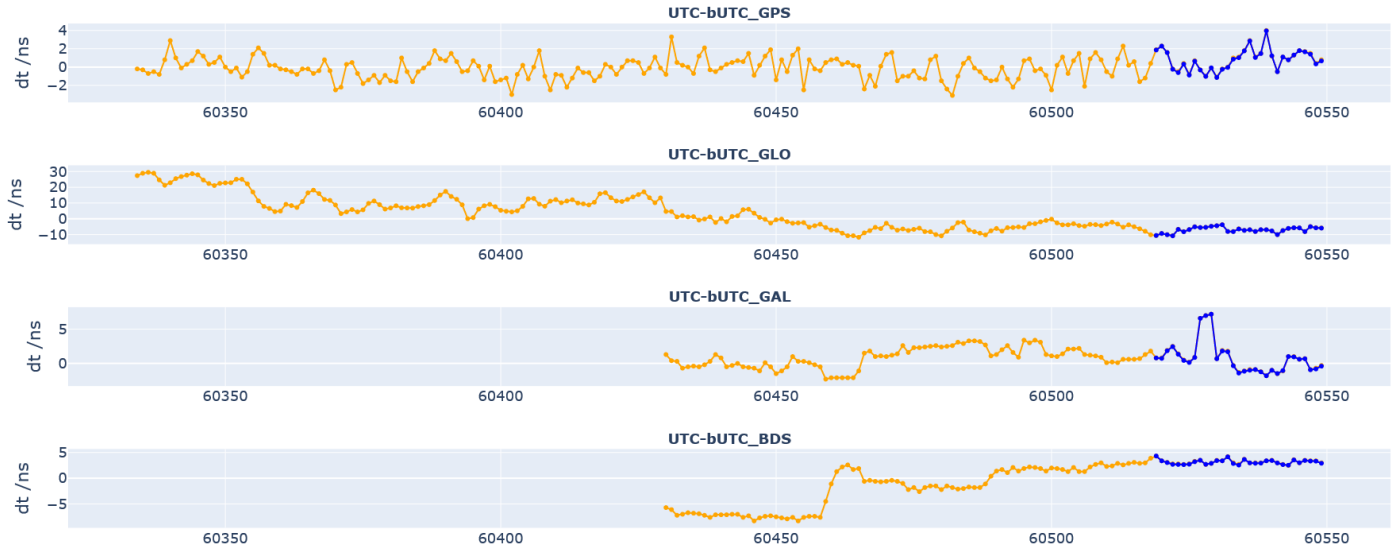
Coordinated Universal Time

New data included in BIPM Circular T

Since the Global Navigation Satellite Systems are now a major point of access for users to UTC.

- We now publish the UTC data from GPS and GLONASS now also including Galileo and Beidou,
- This is based on receiver data from BIPM-calibrated receivers maintained in four NMIs/DIs (NIST, OP, NIM & NICT)

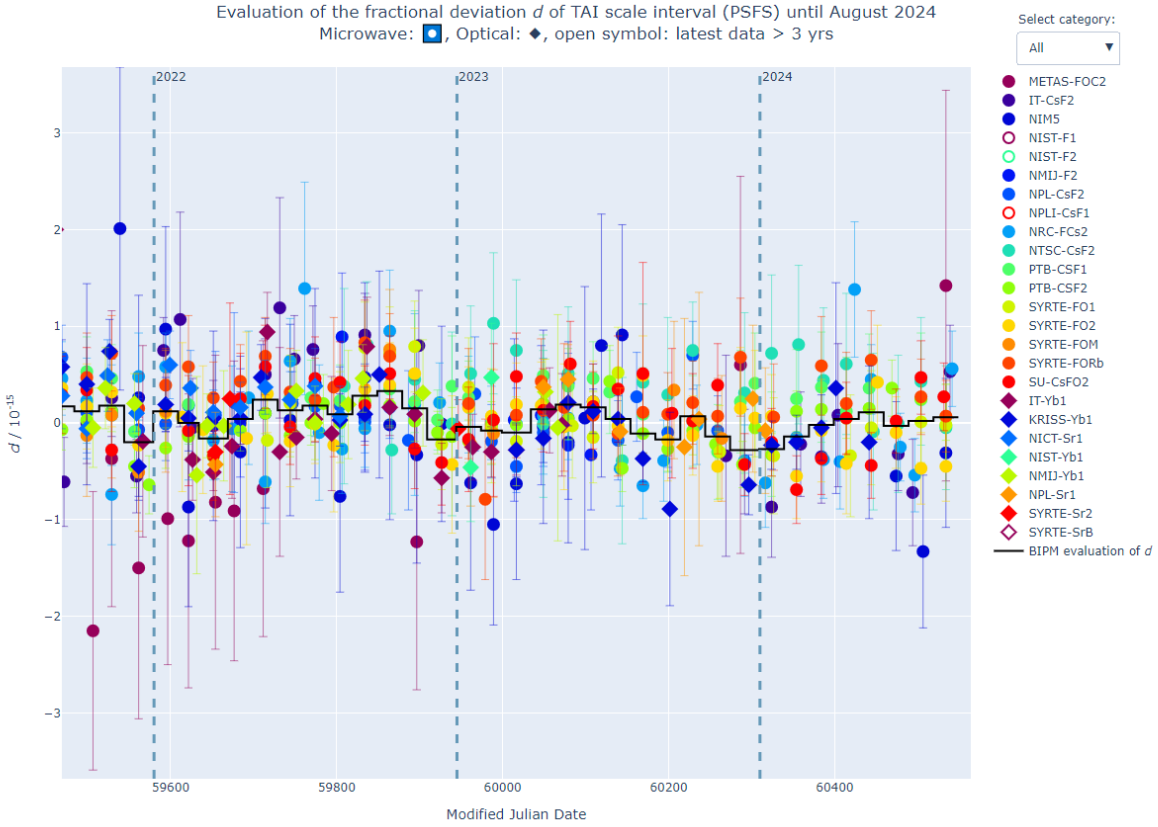




Laboratory highlights – optical clocks in UTC

Coordinated Universal Time

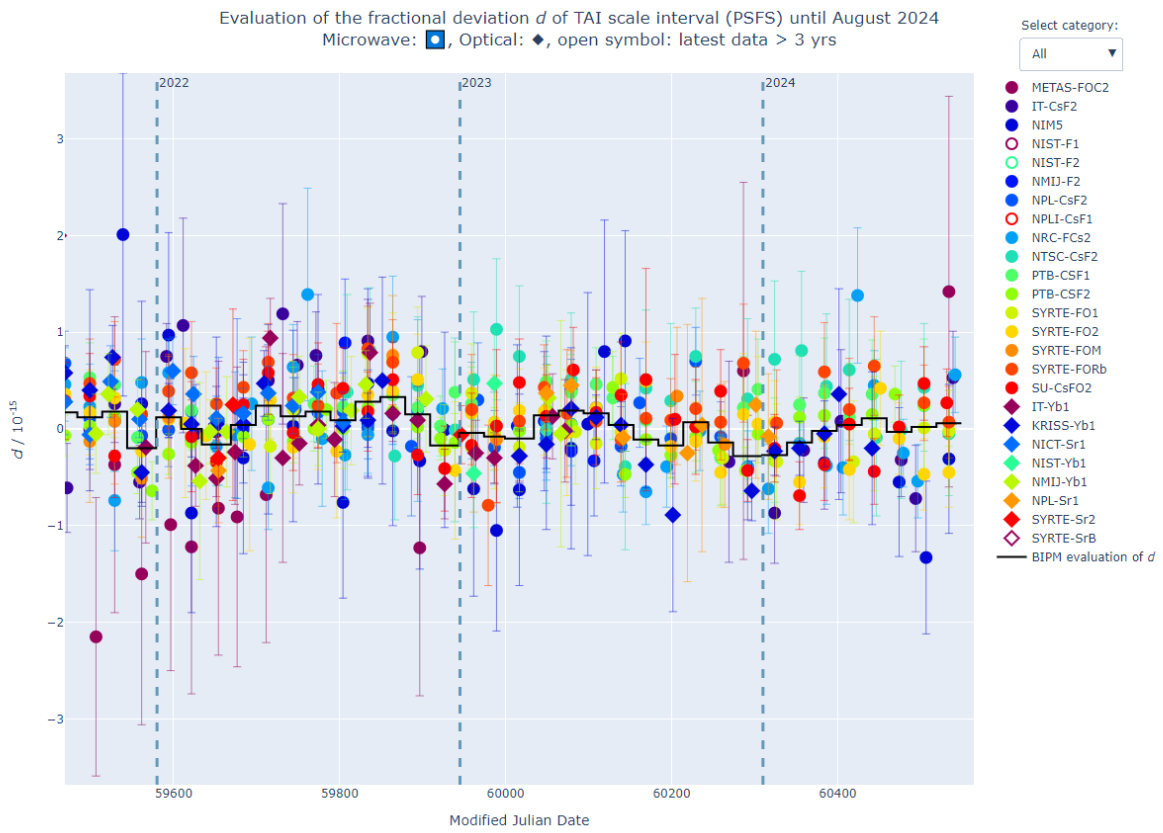
All clocks contributing to TAI



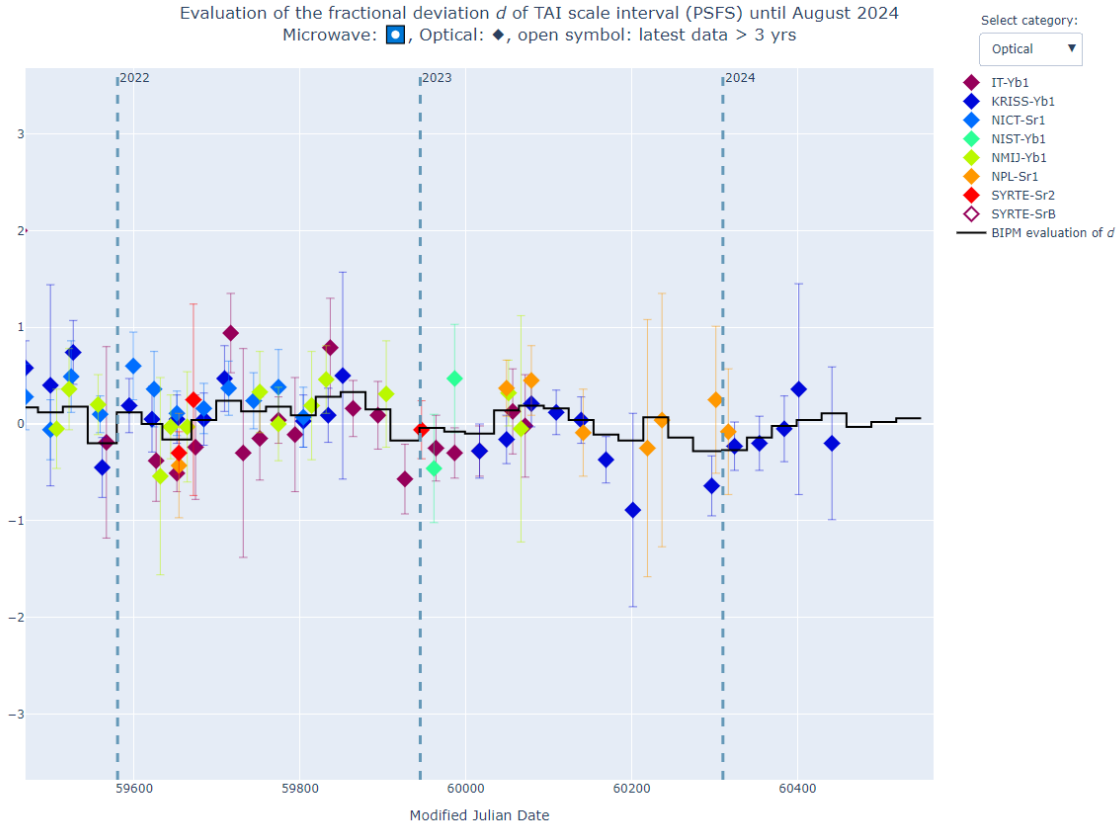
https://webtai.bipm.org/database/d_plot.html

Laboratory highlights – optical clocks in UTC

All clocks contributing to TAI



Optical clocks contributing to TAI



https://webtai.bipm.org/database/d_plot.html

Interactive plot in collaboration with secondee Nelida Diaz (CENAM)

The SI Digital Framework provides a fully digital representation of the SI

- Provide the globally accepted anchor of trust for metrology in the digital era
- Facilitate the use of digital certificates and the adoption of the FAIR principles

From NIST -htt

pdf

human readable

FAIR

machine

The SI Digital Framework provides a fully digital representation of the SI

- To provide the globally accepted anchor of trust for metrology in the digital era
- Facilitate the use of digital certificates and the adoption of the FAIR principles

Digital access to BIPM databases

- Key Comparison Database
- UTC database

BIPM digital service

SI Reference Point

External digital references

ROR
ORCID
InChI

Under development

- Unit interoperability service

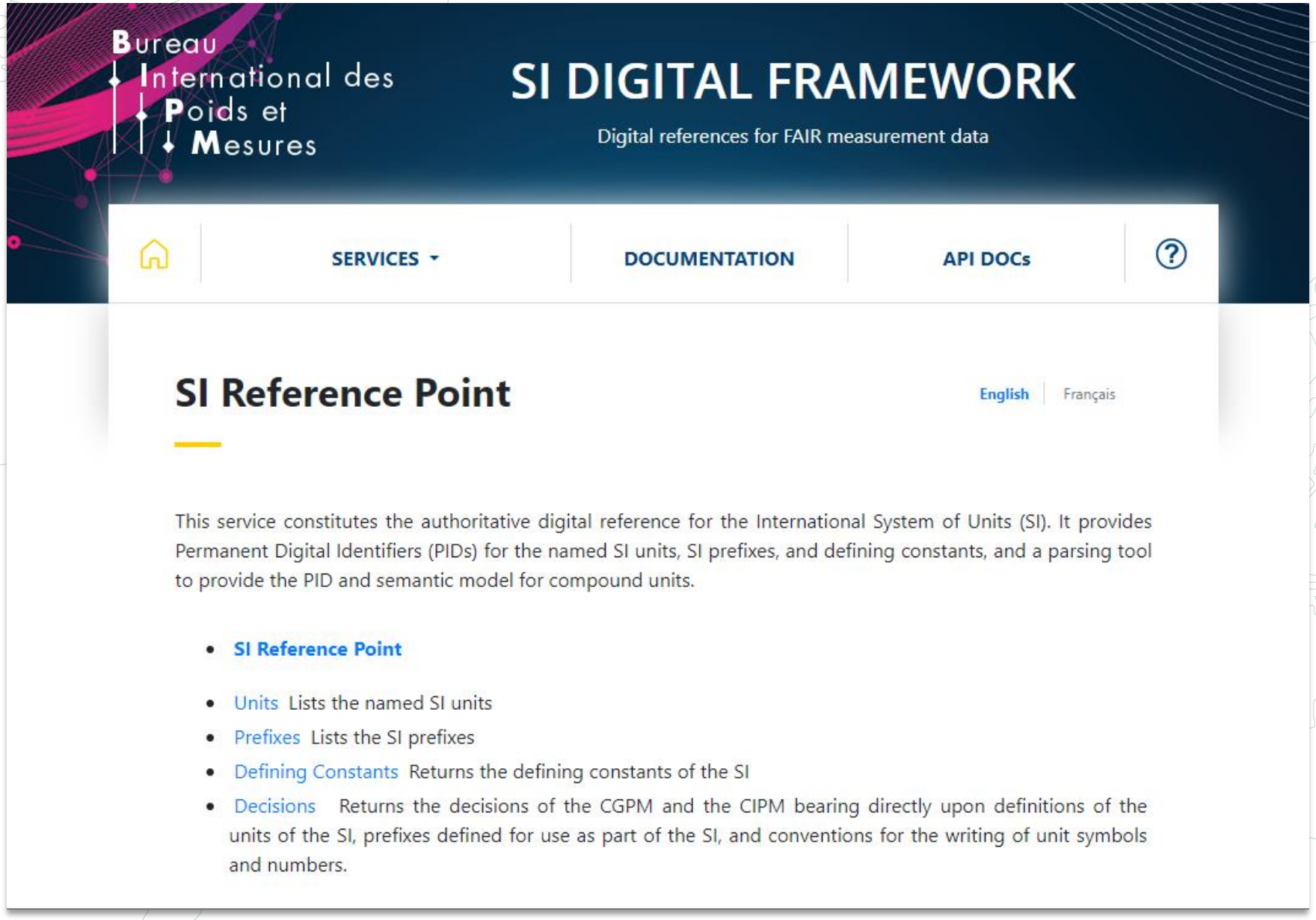
digital references

(v1.0) Available for beta testing

- Units
- Prefixes
- Defining constants
- Quantities - *used in the SI Brochure*
- Decisions
- CMCs
- Measurement service categories
  - *for Physics (exc RI)*

(v2.0) Under development

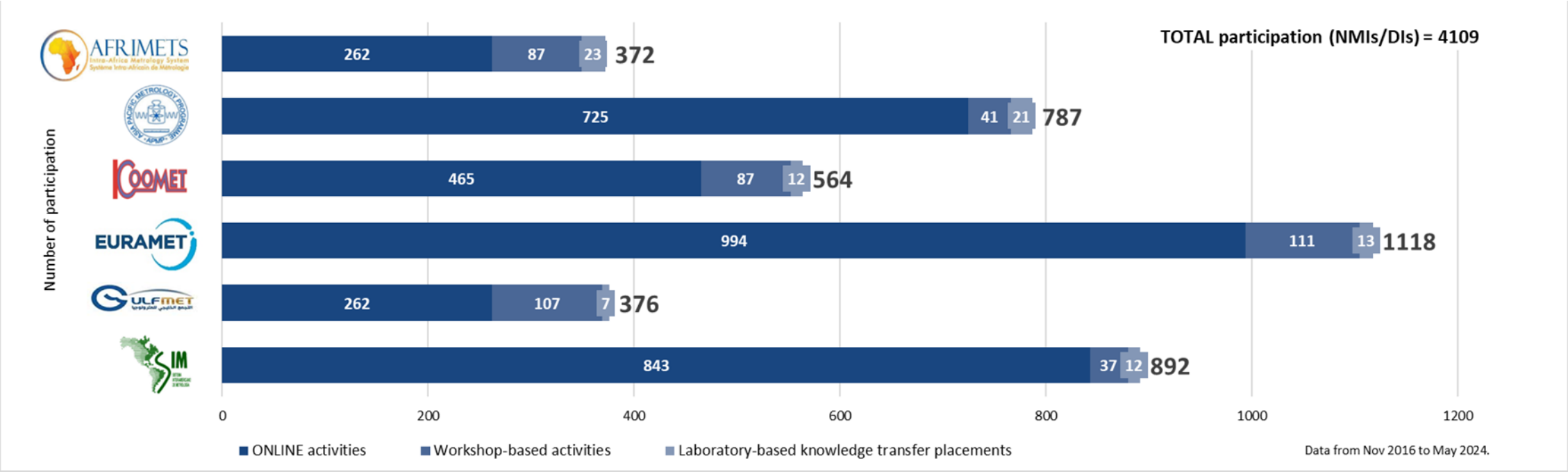
- Measurement service categories
  - *for RI and chemistry*
- Quantities – *used in the KCDB*
- Fundamental constants
- ….


Bureau International des Poids et Mesures
SI DIGITAL FRAMEWORK
Digital references for FAIR measurement data
SERVICES
DOCUMENTATION
API DOCs
SI Reference Point
English
Français
This service constitutes the authoritative digital reference for the International System of Units (SI). It provides Permanent Digital Identifiers (PIDs) for the named SI units, SI prefixes, and defining constants, and a parsing tool to provide the PID and semantic model for compound units.
SI Reference Point
Units Lists the named SI units
Prefixes Lists the SI prefixes
Defining Constants Returns the defining constants of the SI
Decisions Returns the decisions of the CGPM and the CIPM bearing directly upon definitions of the units of the SI, prefixes defined for use as part of the SI, and conventions for the writing of unit symbols and numbers.

03 – Capacity building and the CIPM MRA

CBKT Participation by RMO

Collaboration with all six RMOs



Thanks for support from:

- *METAS, Switzerland*
- *NIM, China*
- *NIST, USA*
- *NMISA, South Africa*
- *NPL, United Kingdom*
- *PTB, Germany*
- *SCL, Hong Kong, China*
- *TÜBITAK UME, Türkiye*
- *IEEE, USA*

Plus

- *All the RMOs*

CBKT projects 2024 *(as of September 2024)*

BIPM
e-learning
1650 users
new courses

- q-NMR SUMMER SCHOOL (BIPM)
- CCTF Best practices (Technical exchanges) (BIPM)
- Time Transfer through GNSS Pseudorange Measurements (BIPM)
- The joint BIPM and OIML e-learning course based on the joint publication – *"National Metrology Systems - Developing the Institutional and Legislative Framework"*. (BIPM)

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

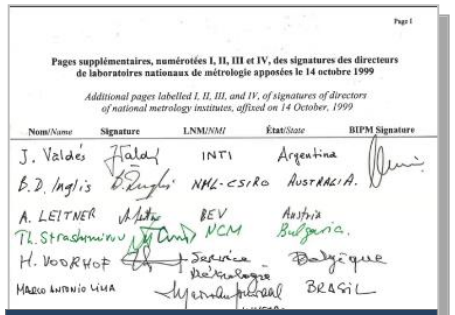
Laboratory Placement
cycle 7 / 2024

The 2024, seventh cycle of the joint BIPM and TÜBİTAK UME initiative is now hosting ten talented metrologists from ten different countries (Ethiopia, Uzbekistan, Azerbaijan, Kenya, Saudi Arabia, Argentina, Egypt, Costa Rica, Indonesia, Russia) from all RMOs.

Online technical exchanges

Three technical exchanges organized to support the CIPM MRA user community (CMC Writers, Comparison pilots and RMO TC/WG Chairs) with 565 participation.

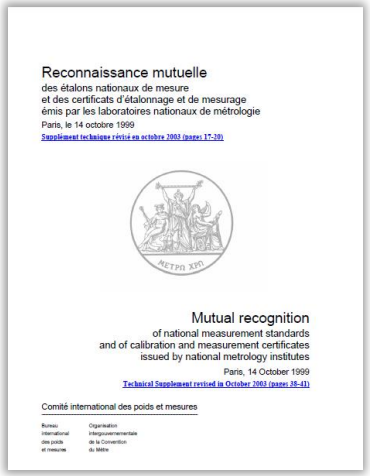
25 years of the CIPM MRA



Pages supplémentaires, numérotées I, II, III et IV, des signatures des directeurs de laboratoires nationaux de métrologie apposées le 14 octobre 1999

Additional pages labelled I, II, III, and IV, of signatures of directors of national metrology institutes, affixed on 14 October, 1999

Nom/*Name*	Signature	LNM/*NMI*	État/*State*	BIPM Signature
J. Valdés		INTI	Argentina	
B.D. Inglis		NML-CSIRO	AUSTRALIA.	
A. LEITNER		BEV	Austria	
Th. Strashimirov		NCM	Bulgaria.	
H. VOORHOF				
MARCO ANTONIO LIMA			BRASIL	



Reconnaissance mutuelle

des étalons nationaux de mesure
et des certificats d'étalonnage et de mesurage
émis par les laboratoires nationaux de métrologie

Paris, le 14 octobre 1999

Supplément technique révisé en octobre 2003 (pages 17-20)

Mutual recognition

of national measurement standards
and of calibration and measurement certificates
issued by national metrology institutes

Paris, 14 October 1999

Technical Supplement revised in October 2003 (pages 38-41)

Comité international des poids et mesures

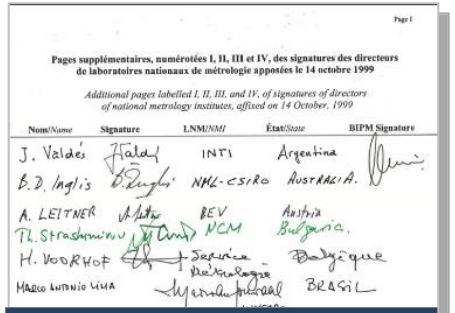
14 Oct 1999

- 40 institutes
- 38 NMIs
- 2 Int. Organisations

30 November 1999
KCDB was launched
with **360 KCs/SCs**

13 December 2000
first CMCs in the KCDB
(**286 CMCs from length**)

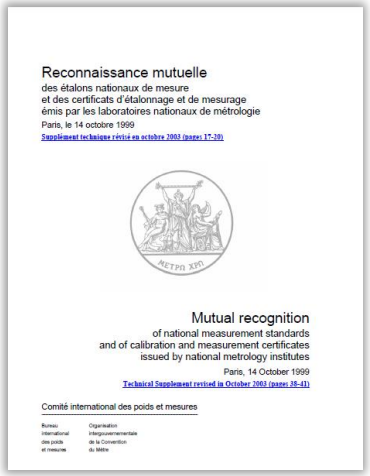
25 years of the CIPM MRA



Pages supplémentaires, numérotées I, II, III et IV, des signatures des directeurs de laboratoires nationaux de métrologie apposées le 14 octobre 1999

Additional pages labelled I, II, III, and IV, of signatures of directors of national metrology institutes, affixed on 14 October, 1999

Nom/*Name*	Signature	LNM/*NMI*	État/*State*	BIPM Signature
J. Valdés		INTI	Argentina	
B.D. Inglis		NML-CSIRO	AUSTRALIA.	
A. LEITNER		BEV	Austria	
Th. Strashimirov		NCM	Bulgaria.	
H. VOORHOF				
MARCO ANTONIO LIMA			BRASIL	



Reconnaissance mutuelle

des étalons nationaux de mesure
et des certificats d'étalonnage et de mesurage
émis par les laboratoires nationaux de métrologie

Paris, le 14 octobre 1999

Supplément technique révisé en octobre 2003 (pages 17-20)

Mutual recognition

of national measurement standards
and of calibration and measurement certificates
issued by national metrology institutes

Paris, 14 October 1999

Technical Supplement revised in October 2003 (pages 38-41)

Comité international des poids et mesures

14 Oct 1999

- 40 institutes
- 38 NMIs
- 2 IOs

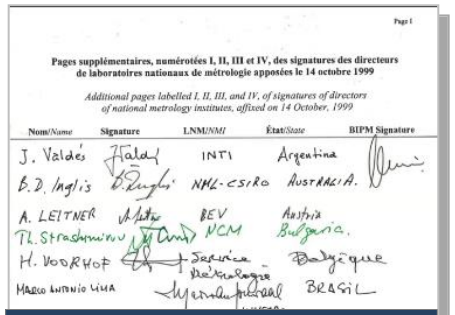
Executive Secretaries from the RMOs:

APMP	SIM	SIM	SIM	E'MET	C'MET	SIM	C'MET	E'MET	E'MET	A'MET

30 November 1999
KCDB was launched
with **360 KCs/SCs**

13 December 2000
first CMCs in the KCDB
(**286 CMCs from length**)

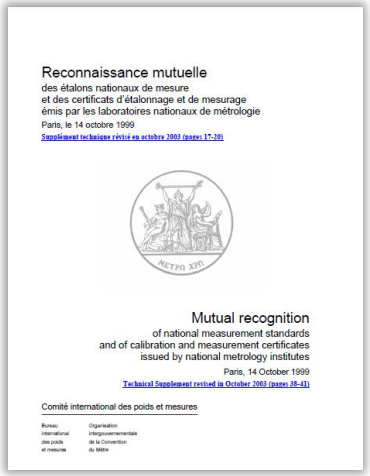
25 years of the CIPM MRA



Pages supplémentaires, numérotées I, II, III et IV, des signatures des directeurs de laboratoires nationaux de métrologie apposées le 14 octobre 1999

Additional pages labelled I, II, III, and IV, of signatures of directors of national metrology institutes, affixed on 14 October, 1999

Nom/Name	Signature	LNM/NMI	État/State	BIPM Signature
J. Valdés		INTI	Argentina	
B.D. Inglis		NML-CSIRO	AUSTRALIA.	
A. LEITNER		BEV	Austria	
Tl. Strashimirov		NCM	Bulgaria.	
H. VOORHOF				
MARCO ANTONIO LIMA			BRASIL	



Reconnaissance mutuelle

des étalons nationaux de mesure
et des certificats d'étalonnage et de mesurage
émis par les laboratoires nationaux de métrologie

Paris, le 14 octobre 1999

Supplément technique révisé en octobre 2003 (pages 17-20)

Mutual recognition

of national measurement standards
and of calibration and measurement certificates
issued by national metrology institutes

Paris, 14 October 1999

Technical Supplement revised in October 2003 (pages 38-41)

Comité international des poids et mesures

14 Oct 1999

- 40 institutes
- 38 NMIs
- 2 IOs

30 November 1999
KCDB was launched with **360 KCs/SCs**

13 December 2000
first CMCs in the KCDB (**286 CMCs from length**)

Executive Secretaries from the RMOs:

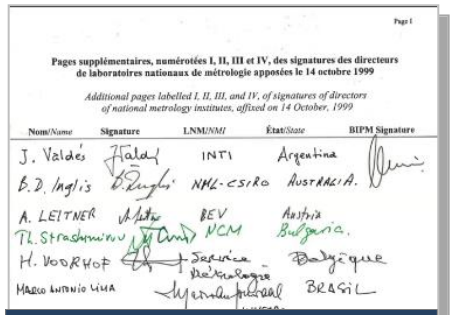
APMP	SIM	SIM	SIM	E'MET	C'MET	SIM	C'MET	E'MET	E'MET	A'MET

October 2015:
CIPM MRA Review Workshop
Led to KCDB 2.0

November 2016
First CBKT to assist the CIPM MRA user community

June 2021:
GULFMET full member of the JCRB

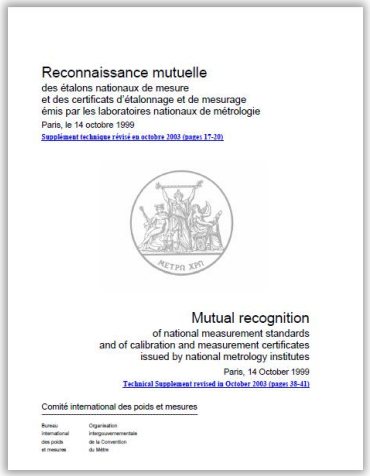
25 years of the CIPM MRA


Pages supplémentaires, numérotées I, II, III et IV, des signatures des directeurs de laboratoires nationaux de métrologie apposées le 14 octobre 1999

Additional pages labelled I, II, III, and IV, of signatures of directors of national metrology institutes, affixed on 14 October, 1999

Nom/Name	Signature	LNM/NMI	État/State	BIPM Signature
J. Valdés		INTI	Argentina	
B.D. Inglis		NML-CSIRO	AUSTRALIA.	
A. LEITNER		BEV	Austria	
Tl. Strashimirov		NCM	Bulgaria.	
H. VOORHOF			Belgique	
MARCO ANTONIO LIMA			BRASIL	

14 Oct 1999
- 40 institutes
- 38 NMIs
- 2 IOs


Reconnaissance mutuelle
des étalons nationaux de mesure
et des certificats d'étalonnage et de mesurage
émis par les laboratoires nationaux de métrologie
Paris, le 14 octobre 1999
Supplément technique révisé en octobre 2003 (pages 17-20)

Mutual recognition
of national measurement standards
and of calibration and measurement certificates
issued by national metrology institutes
Paris, 14 October 1999
Technical Supplement revised in October 2003 (pages 38-41)

Comité international des poids et mesures

October 2015:
CIPM MRA Review Workshop
Led to KCDB 2.0

June 2021:
GULFMET full member of the JCRB

Executive Secretaries from the RMOs:

APMP	SIM	SIM	SIM	E'MET	C'MET	SIM	C'MET	E'MET	E'MET	A'MET

30 November 1999
KCDB was launched with **360 KCs/SCs**

13 December 2000
first CMCs in the KCDB (**286 CMCs from length**)

November 2016
First CBKT to assist the CIPM MRA user community

Oct 2024
251 Institutes from
- 64 Member States
- 36 Associates
- 4 IOs

plus 150 DIs

Oct 2024
KCDB includes
- 26 077 CMCs
- 1187 KCs
- 704 SCs

25 years of the CIPM MRA

Today, the CIPM MRA provides **a primary source to identify internationally recognized national capabilities** within the NMI and wider metrology community.

ISO/IEC 17025:2017

CIPM MRA: Reliable path for demonstration of metrological traceability

A.3 Demonstrating metrological traceability

A.3.1 Laboratories are responsible for establishing metrological traceability in accordance with this document. Calibration results from laboratories conforming to this document provide metrological

Federal Aviation Administration

"…The CIPM Mutual recognition Arrangement (MRA) signatories are acceptable to the FAA and can be found at https://www.bipm.org…"

ILAC-P10:07/2020

CIPM MRA: Reliable route for metrological traceability

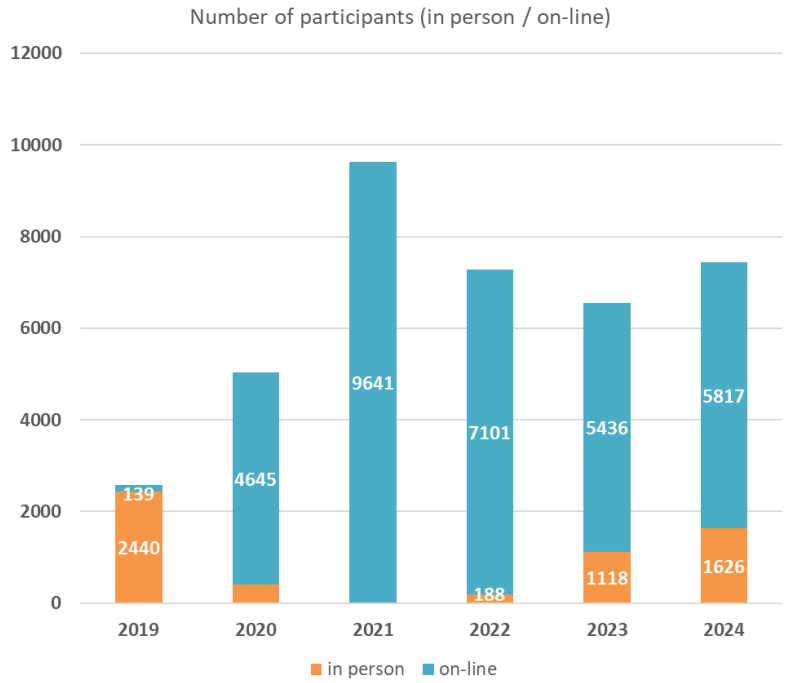
ILAC POLICY ON METROLOGICAL TRACEABILITY OF MEASUREMENT RESULTS

When metrological traceability is required, the ILAC policy is that the measuring equipment (1) shall be calibrated by:

EASA European Aviation Safety Agency

"…Tooling shall be calibrated by any of the following laboratories: …NMI whose scope specifically covers the intended calibration (scope means the services covered by the CIPM MRA …)"

Meetings attendance 2019 – 2024

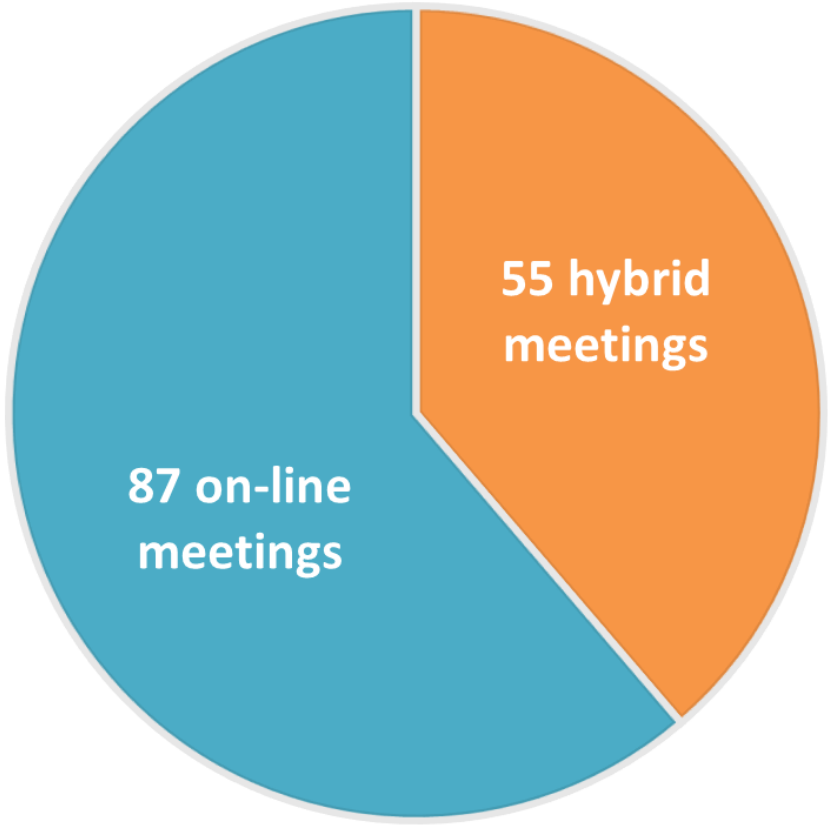


Trends

Reduced participation on site in WGs – enormous increase in online.
Small reduction in CC plenary meetings on site
Increase in workshops; on-site and on-line
Overall – substantial increase in participation

Meetings in 2024

The Meetings Office organised a total of **142 meetings** on 2024



Local outreach

National Heritage Days

815 visitors following nine guided tours over two days.
2500 visitors since 2000.

04 – Finance and contributions and subscriptions for 2025-2027

Member States and Associates *(May 2024)*

- 64 Member States and
- 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.*

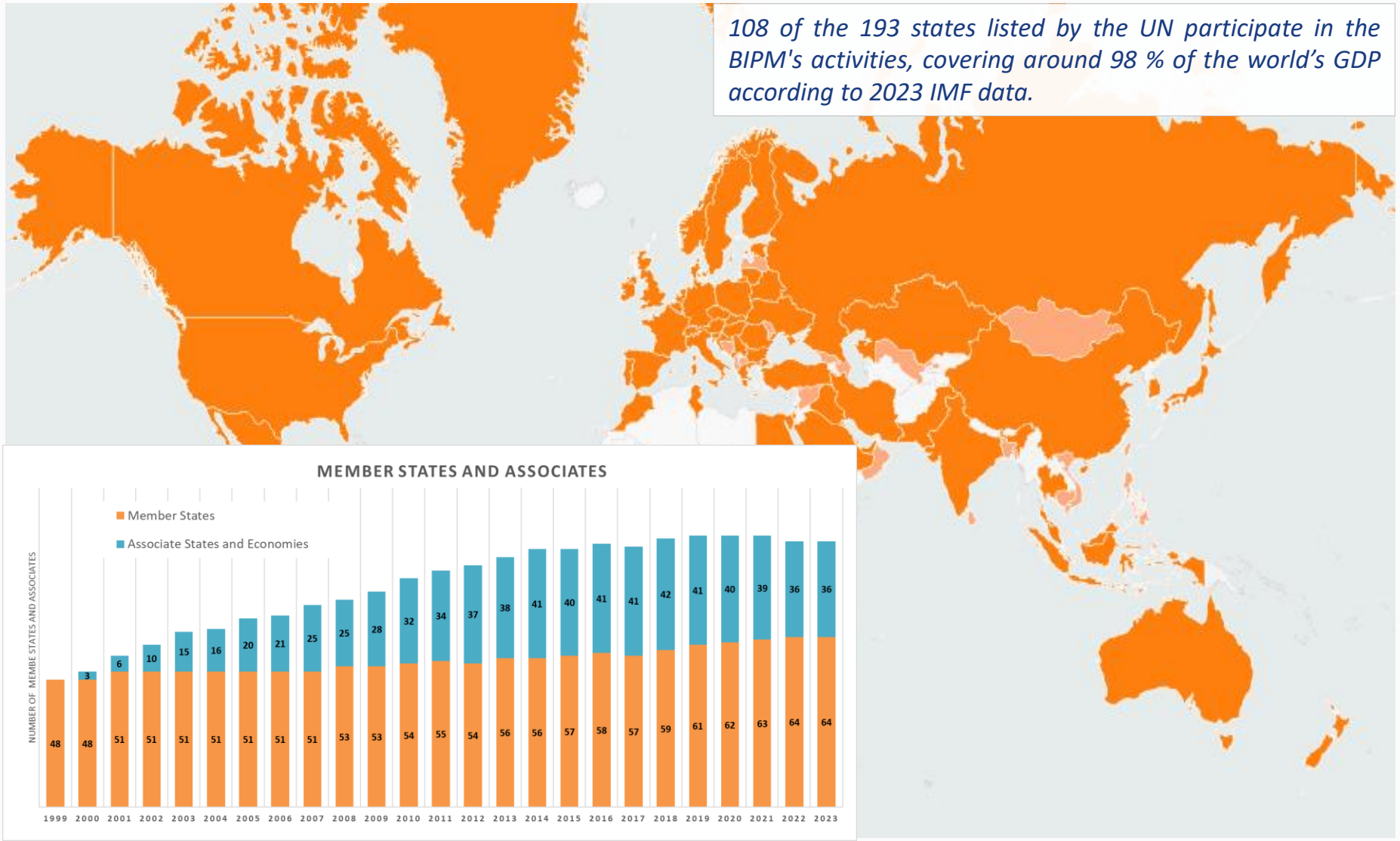
NEW MEMBER STATES:
- **Morocco** (May 2019)
- **Ecuador** (August 2019)
- **Belarus** (January 2020)
- **Estonia** (January 2021)
- **Costa Rica** (September 2022)

NEW ASSOCIATES:
- **Cambodia** (January 2021)
- **Zimbabwe** (February 2022 reinstatement; *excluded in Jan 2021*)

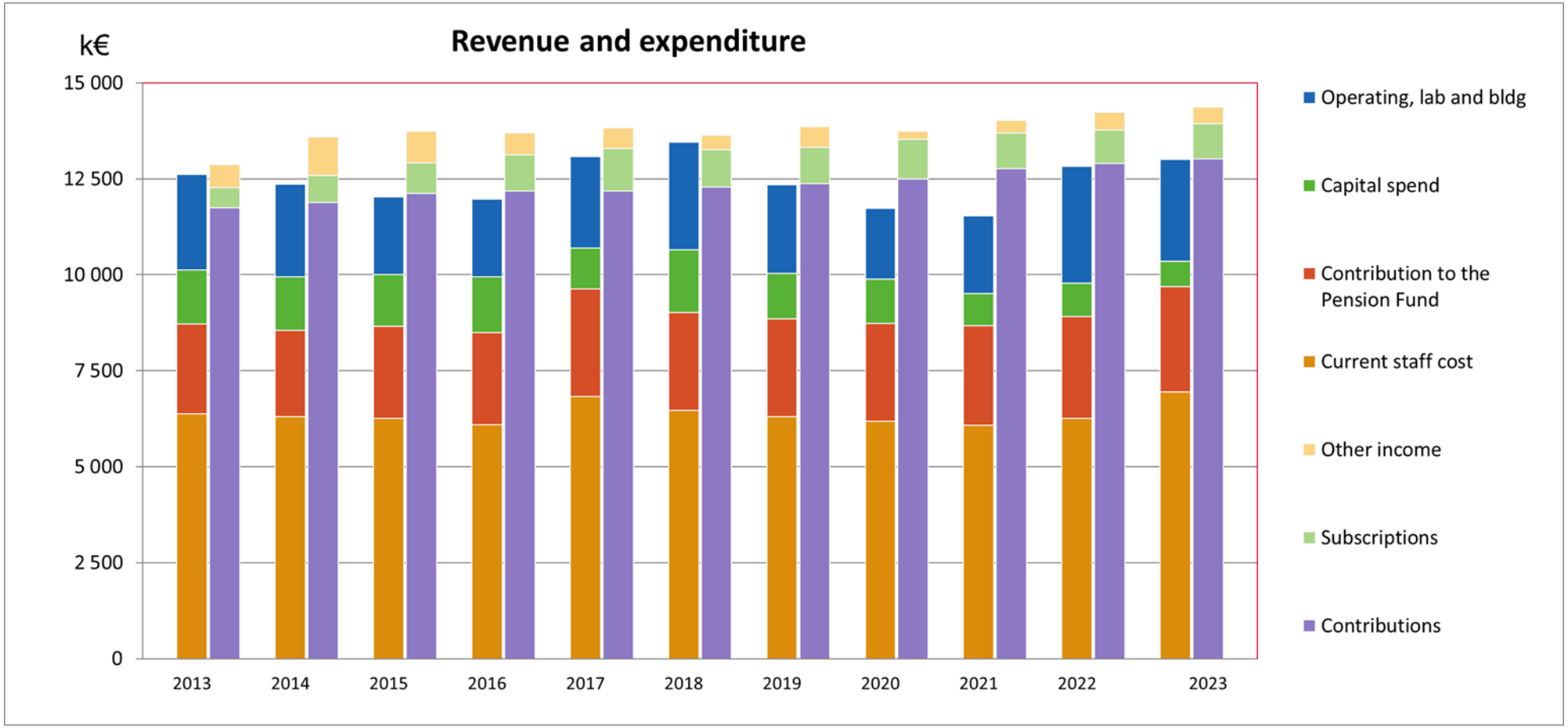
EXCLUDED ASSOCIATES:
- **Cuba** (January 2022)
- **Sudan** (January 2022)

WITHDRAWN ASSOCIATE:
- **Seychelles** (January 2022)

108 of the 193 states listed by the UN participate in the BIPM's activities, covering around 98 % of the world's GDP according to 2023 IMF data.

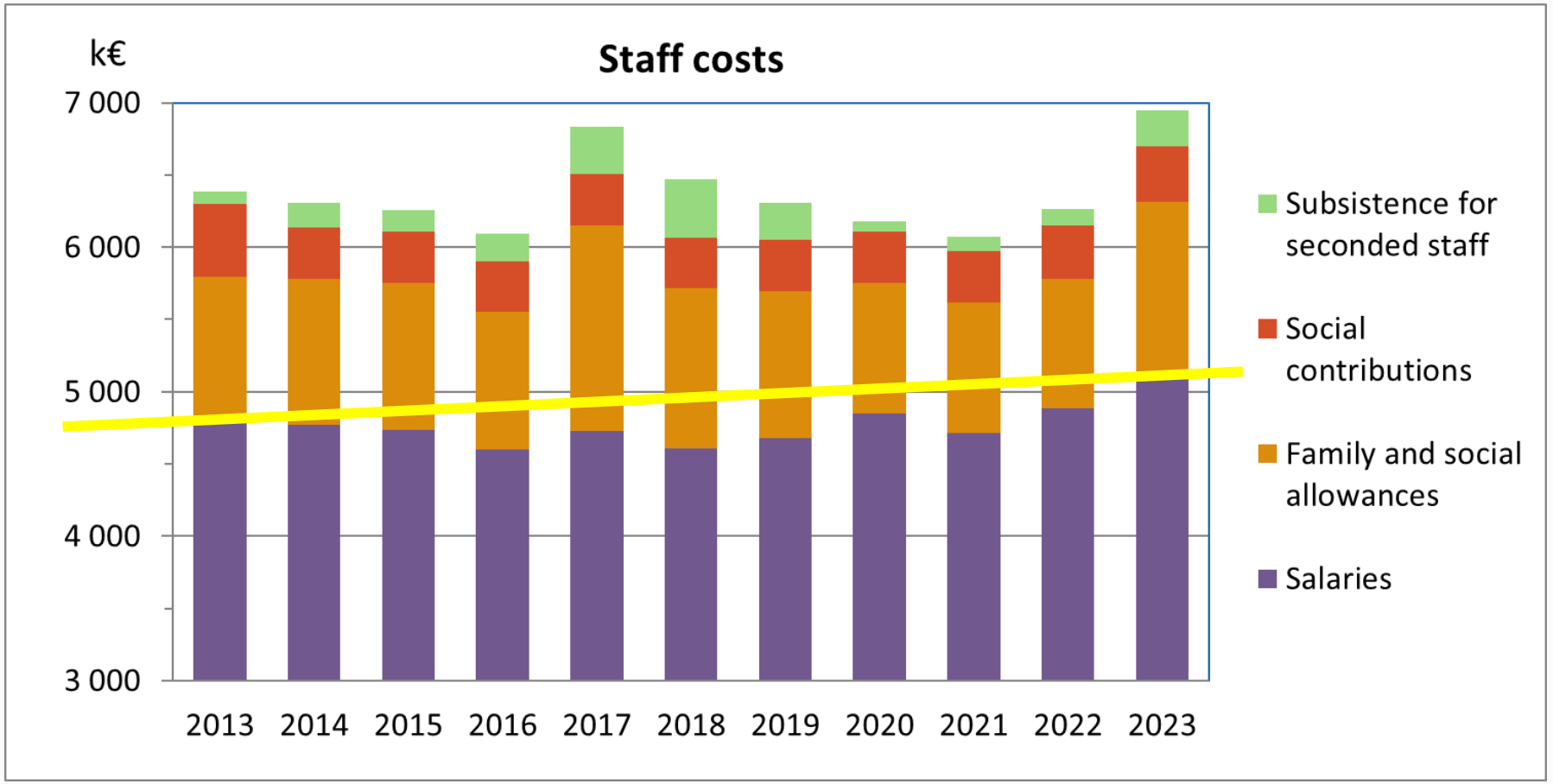


Revenue and Expenditure *(to end 2023)*



Revenue – increase - (due to small increase in contributions)
Expense – increase - (electricity and salary inflation)

Revenue and Expenditure *(to end 2023)*

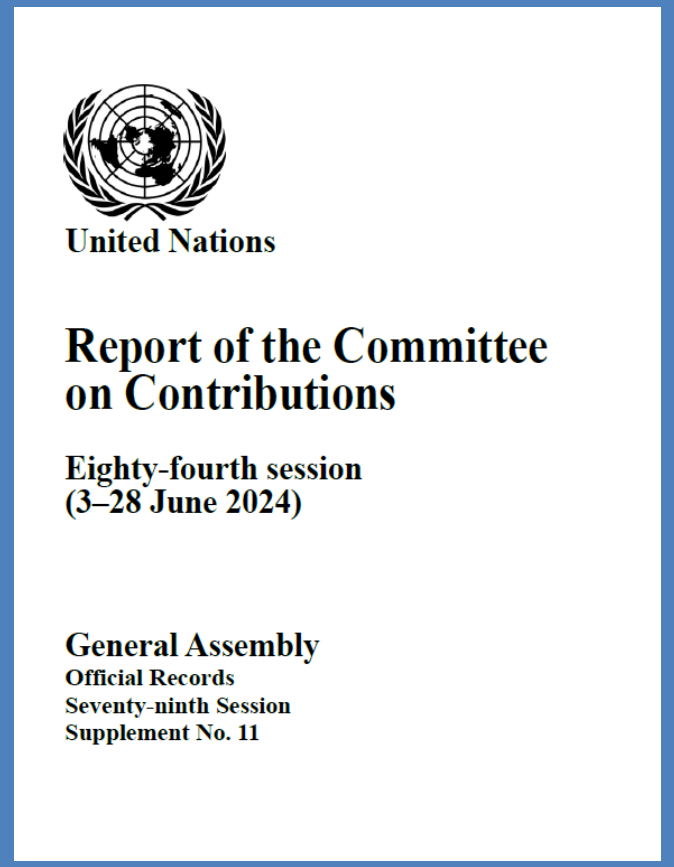


Salary costs stable in real terms (and only 6.8 % above 2013 level).
(Inflation was 4.5 % in 2023/4)
Secondments re-building since pandemic.

Contributions and Subscriptions - 2025

UN Scale of Assessment for 2025 to 2027 was published in draft form in September.

The 2025 contributions to BIPM will be available before the end of the month.



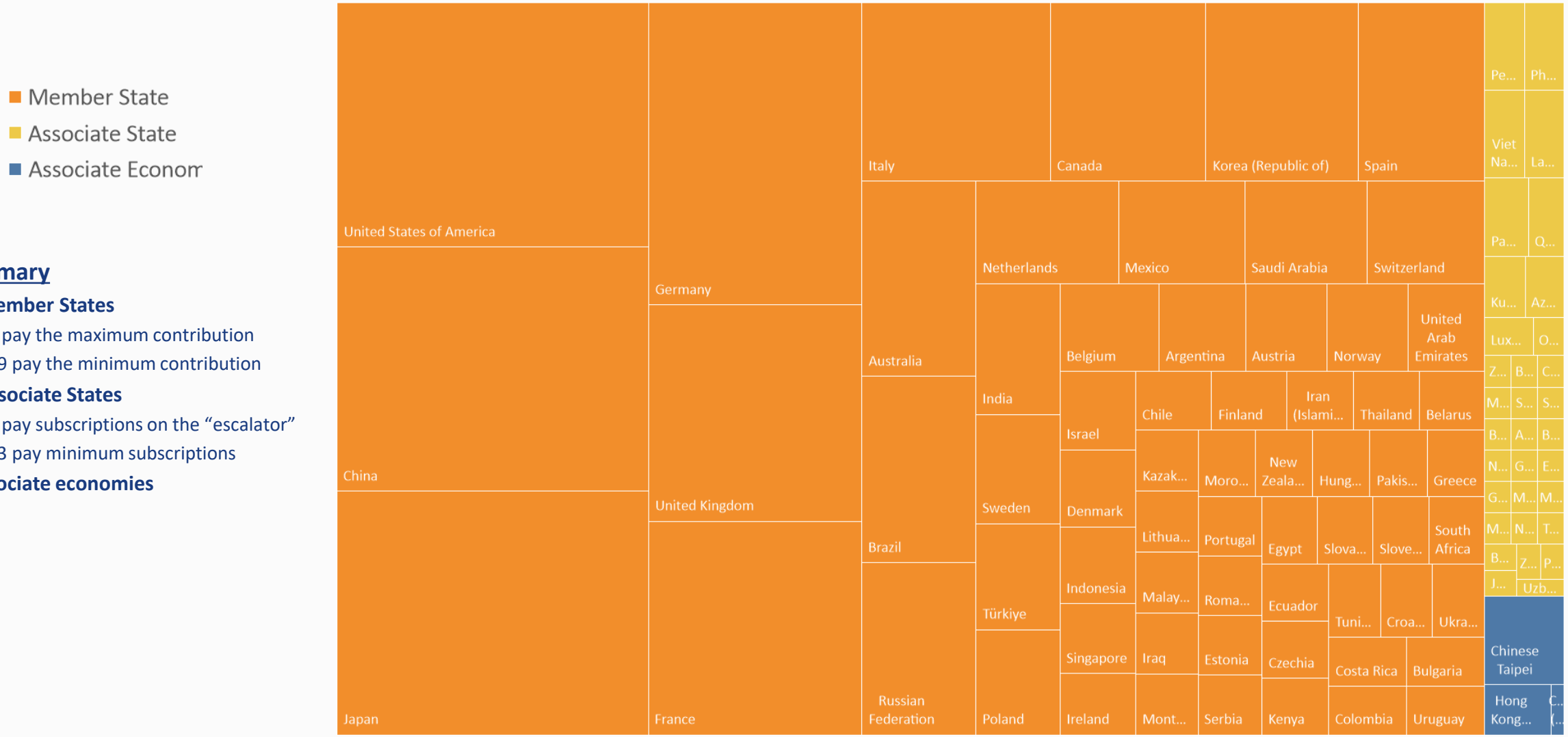
United Nations

Report of the Committee on Contributions

Eighty-fourth session
(3–28 June 2024)

General Assembly
Official Records
Seventy-ninth Session
Supplement No. 11

Contributions and Subscriptions - 2025



Summary

64 Member States

- 3 pay the maximum contribution
- 29 pay the minimum contribution

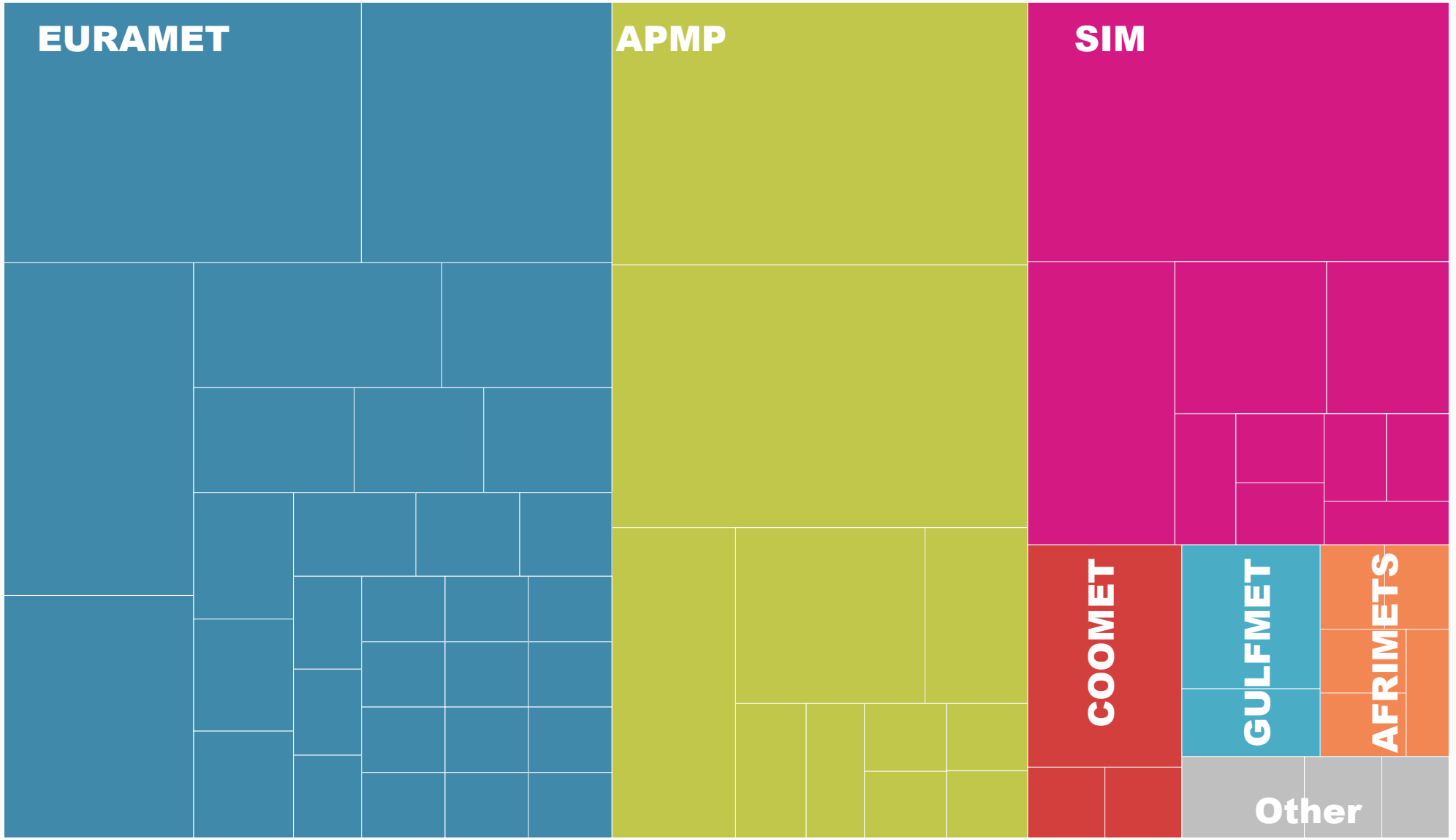
32 Associate States

- 7 pay subscriptions on the “escalator”
- 23 pay minimum subscriptions

3 Associate economies

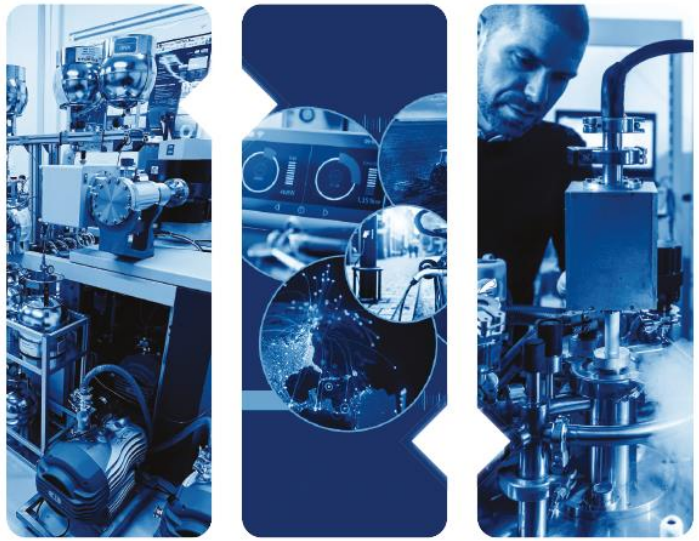
Source of Finance by RMOs

Contributions and Subscriptions for 2025 by RMOs



Bureau International des Poids et Mesures

Annual Review **2023/2024**



COMITÉ INTERNATIONAL DES POIDS ET MESURES

RAPPORT FINANCIER

2023

RAPPORT ANNUEL AUX
GOUVERNEMENTS DES HAUTES PARTIES CONTRACTANTES
SUR LA SITUATION ADMINISTRATIVE ET FINANCIÈRE
DU BUREAU INTERNATIONAL DES POIDS ET MESURES

BIPM
ΜΕΤΡΩ ΧΡΩ

Bureau International des Poids et Mesures

Thank you!