

# BIPM Liaison Report

## to the SIM General Assembly

*November 2020*

## THE VISION, MISSION AND OBJECTIVES OF THE BIPM

The BIPM is the intergovernmental organization established by the Metre Convention, through which Member States act together on matters related to measurement science and measurement standards.

Its **vision** is to be universally recognised as the world focus for the international system of measurement.

Its **mission** is to work with the NMIs of its Member States, the RMOs and strategic partners world-wide and to use its international and impartial status to promote and advance the global comparability of measurements for:

- Scientific discovery and innovation,
- Industrial manufacturing and international trade,
- Improving the quality of life and sustaining the global environment.

### THE OBJECTIVES OF THE BIPM from Res 3 of the 26<sup>th</sup> CGPM (2018)

- **To represent the world-wide measurement community**, aiming to maximize its uptake and impact.
- **To be a centre for scientific and technical collaboration between Member States**, providing capabilities for international measurement comparisons on a shared-cost basis.
- **To be the coordinator of the world-wide measurement system**, ensuring it gives comparable and internationally accepted measurement results.

Fulfilling our mission and objectives is underpinned by our work in:

- *capacity building*, which aims to achieve a global balance between the metrology capabilities in Member States;
- *knowledge transfer*, which ensures that our work has the greatest impact.

## SHORT SUMMARY OF BIPM ACTIVITIES DURING CONFINEMENT

The BIPM was able to adapt quickly to the conditions associated with the COVID-19 outbreak in order to provide maximum support to NMIs during the confinement:

- The key activities, such as the monthly *Circular T*,<sup>1</sup> commissioning of the KCDB 2.0, and the World Metrology Day initiative have been running without interruption – by tele-working.
- The CIPM President has asked NMIs to share examples of how their work is supporting the fight against the COVID-19 pandemic. The responses received are listed in a dedicated 'Metrology in the fight against Covid-19' repository, <https://www.bipm.org/en/worldwide-metrology/covid-19-metrology.html>
- The CCQM<sup>2</sup> developed comparison protocols for organizing scientific comparisons to underpin testing and organized webinars/workshops for the expert community. A recording of the webinar can be viewed at <https://youtube.com/OJh65cEPIrl>
- A special edition of the JCTLM<sup>3</sup> Newsletter focusing on reliability of measurements in

<sup>1</sup> BIPM *Circular T* is the monthly publication of the Time Department that provides traceability to Coordinated Universal Time (UTC) for the local realizations UTC(k) maintained by national institutes. *Circular T* provides the values of the differences [UTC – UTC(k)] every five days, for about 80 institutes regularly contributing clock and clock comparison data to the BIPM. It includes also other information relevant to the computation of these values.

<sup>2</sup> The Consultative Committee for Amount of Substance: Metrology in Chemistry and Biology (CCQM) is responsible for developing, improving and documenting the equivalence of national standards (certified reference materials and reference methods) for chemical and biological measurements. It advises the CIPM on matters related to chemical and biological measurements including advice on the BIPM scientific programme activities.

<sup>3</sup> The BIPM together with ILAC (International Laboratory Accreditation Cooperation), the IFCC (International Federation of Clinical Chemistry and Laboratory Medicine) created JCTLM and recently the ICSH (International Council for Standardization in

COVID-19 diagnostics has been published, and summarizes submitted articles from JCTLM Members and Stakeholders.

<https://www.bipm.org/utis/common/pdf/JCTLM/JCTLM-Newsletter-2020-COVID-19.pdf>

- The BIPM Capacity Building and Knowledge Transfer programme launched its "Remote learning support" initiative in May 2020 with the delivery of its first on-line short course for COOMET and its first on-line technical exchange for CMC writers (Q/A sessions).

## THE CIPM

The 109th meeting of the CIPM was held on 12-14 October 2020.

All CIPM Decisions are available on the BIPM website and decisions of the 109<sup>th</sup> meeting of the CIPM are annexed to this report (Annex 2).

## INSTITUTIONAL NEWS

*Liaison with Member States and Associate States of the CGPM*

As of January 2020 the BIPM had 62 Member States, and 40 Associate States and Economies of the General Conference on Weights and Measures (CGPM)

**The Republic of Belarus** became a Member State as from 13 January 2020, after having been an Associate State of the CGPM for more than fifteen years.

The list of Member States and Associate States of the CGPM is annexed to this report (Annex 1).

*Liaison with international organizations*

The BIPM has a series of ongoing institutional and technical interaction with over 30 international organizations and international bodies.

---

Haematology) joined this committee. One of its principle activities is to maintain a database of reference services and materials that manufacturers in the in-vitro diagnostics industry can use to meet regulatory requirements for testing in laboratory medicine.

## World Metrology Day

Each year on 20 May, the world-wide metrology community celebrates the day the *Metre Convention* was signed in 1875. The project is run jointly by the BIPM and the OIML. The theme for 2020 was "*Measurements for global trade*". The theme raises awareness of the important role measurement plays in facilitating fair global trade - ensuring products meet standards and regulations, and satisfying customer quality expectations.

The 2020 poster was designed in collaboration with the AFRIMETS RMO and specifically with AA&W Legal Metrology Egypt. The poster was translated into more than 20 languages and information on 23 national celebratory events is provided on the 2020 World Metrology Day Resource Website

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

The theme for World Metrology Day 2021 will be '*Measurement for health*' and the collaboration will be with SASO, Saudi Arabia, a member of GULFMET.

## The OECD/BIPM joint study

The OECD/BIPM joint study: *The Case of the International Bureau of Weights and Measures*, study describing the operation of the BIPM, was published on 6 February 2020 within the OECD initiative "Partnership of international organizations for effective international rule-making" (IO Partnership). This study is complementary to a series of the OECD studies of rule-making practices of selected IOs developed during 2014-2016 for FAO, IMO, ISO, OECD, OIML, UNECE, WHO, WTO and OIE.

The IO Partnership is currently working on a Compendium of International Organisations' Practices for Effective International Rulemaking. The Compendium will use examples from the BIPM and from many other IOs to highlight how IOs work better together and how they can learn from each other about best practices as they go forward. The BIPM shares the role of focal point of WG5 on coordination among IOs to better tailor the specific needs of IOs and address more in-depth IO coordination issues.

## INETQI

Independent International Organisation for Certification (IIOC) and International Certification Network (IQNet) joined INetQI bringing the number of INetQI members to 14.

## Formalization of liaisons

The BIPM formalized its long-standing cooperation with ITU and IFCC in June and September 2020 respectively through the electronic signature of MoUs.

## CIPM MRA and KCDB

The CIPM MRA is the '*Mutual Recognition Arrangement of National Measurement standards and of calibration and measurement certificates issued by National Metrology Institutes*'. Participation in the CIPM MRA continues to grow: it has been signed by representatives of 102 institutes – from 62 Member States, 40 Associates of the CGPM (Morocco is the latest signatory), and four international organizations – and covers a further 152 institutes designated by the signatory bodies.

In respect of implementing the recommendations of the Working Group on the Implementation and Operation of the CIPM MRA a new database – KCDB 2.0 has been developed and was launched on 29 October 2019. It incorporates the CIPM MRA review platform and has an extended numerical search facility. The new web address is [www.bipm.org/kcdb](http://www.bipm.org/kcdb). It is now possible to search on Calibration and Measurement Capabilities (CMCs) and comparisons using a free-keyword search - quick search - or by using a predefined menu - advanced search. You may also filter on CMC approval dates, combine an advanced search with free key words, filter CMC measurand values and uncertainties numerically, sort results and export search results to a spreadsheet.

A user platform with restricted access for creating and reviewing CMCs, and registering comparisons, opened in November 2019.

A new statistical tool was also incorporated early in 2020.

A significant milestone was achieved for the BIPM and the KCDB 2.0 on 2 April 2020 with the publication of a CMC for gravimetry from CENAM (Mexico). This represents the first CMC that has been submitted, reviewed and approved entirely using the KCDB 2.0. This first publication clearly demonstrates the potential of the new system. The CMC was created and submitted for intra-regional review on 26 February 2020. Having completed the SIM review and being subjected to inter-regional review, it was approved and published just five weeks later on the KCDB on 2 April 2020.

As of 10 November 2020, the KCDB included a total of 25 722 CMCs including 6 441 in chemistry and biology, 3 853 in ionizing radiation, 810 in time and frequency, etc. There are 1062 key comparisons and 618 supplementary comparisons registered in the KCDB.

## The KCDB CBKT training platform

An offline version of the KCDB 2.0 database has been developed to support the KCDB user community training events. It simulates all aspects of the CMC review and comparison registration processes. The CMC Writers and Reviewers are able to use the offline platform to practice how to create user accounts; to develop their CMCs and to submit their CMCs for intra- and inter-regional review; to act as Reviewers; to submit comparisons as a Pilot; and finally to manage the process as a TC Chair.

## CAPACITY BUILDING AND KNOWLEDGE TRANSFER (BIPM CBKT) PROGRAMME

The BIPM launched a new Capacity Building and Knowledge Transfer Programme (BIPM CBKT Programme) in 2016 aimed at countries and economies with emerging metrology systems (CEEMS).

The aim of the BIPM CBKT programme is to increase the effectiveness with which Member States and Associates engage in the world-wide coordinated metrological system.

So far, around 500 participants from 97 countries, covering all six RMOs, have benefited from the CBKT initiatives. At the time of writing,

over 76 % of Member States and Associates have participated in the CBKT Programme (as trainees, lecturers and sponsors).

CBKT activities organized during the reporting period include:

- BIPM-EURAMET Workshop: "the KCDB 2.0", on 17-19 February 2020 at the BIPM;
- "Optimizing the CIPM MRA - the KCDB 2.0", on 4-8 November 2019 at the BIPM;
- "Metrology for Safe Food and Feed Organic Analysis and Standards" Workshop, on 4-6 November 2019 in Riyadh (Saudi Arabia);
- Important transitions in the CIPM MRA infrastructure, on 29-30 November in Sydney (Australia);
- EURAMET/BIPM Training Course "Organisation and Piloting of Intercomparisons in Ionizing Radiation", on 9-11 October 2019 in Teddington (UK).

In 2020 the BIPM CBKT Programme was extended to include a "remote-learning" capability, which provides on-line assistance to NMI/DI staff from Member States and Associates in their involvement in the CIPM MRA mechanisms. Since May 2020, six online projects have been organized involving more than 500 participants. Full details are available at: <http://www.bipm.org/en/cbkt/>

This report focuses on institutional matters during the period under review. For highlights of the BIPM scientific programme for the period, please refer to the BIPM Annual Review 2019/2020:

<https://www.bipm.org/en/publications/directors-report/>

## ANNEX 1

### 62 Member States

(as of January 2020)

Argentina	Korea (Republic of)
Australia	Lithuania
Austria	Malaysia
Belarus	Mexico
Belgium	Montenegro
Brazil	Morocco
Bulgaria	Netherlands
Canada	New Zealand
Chile	Norway
China	Pakistan
Colombia	Poland
Croatia	Portugal
Czechia	Romania
Denmark	Russian Federation
Ecuador	Saudi Arabia
Egypt	Serbia
Finland	Singapore
France	Slovakia
Germany	Slovenia
Greece	South Africa
Hungary	Spain
India	Sweden
Indonesia	Switzerland
Iran (Islamic Republic of)	Thailand
Iraq	Tunisia
Ireland	Turkey
Israel	Ukraine
Italy	United Arab Emirates
Japan	United Kingdom
Kazakhstan	United States of America
Kenya	Uruguay

### 40 Associates of the CGPM (States or Economies\*)

(as of January 2020)

Albania	Latvia
Azerbaijan	Luxembourg
Bangladesh	Malta
Bolivia	Mauritius
Bosnia and Herzegovina	Moldova (Republic of)
Botswana	Mongolia
CARICOM*	Namibia
(11 members:	North Macedonia
<i>Antigua and Barbuda</i>	Oman
<i>Barbados</i>	Panama
<i>Belize</i>	Paraguay
<i>Dominica</i>	Peru
<i>Grenada</i>	Philippines
<i>Guyana</i>	Qatar
<i>Saint Kitts and Nevis</i>	Seychelles
<i>Saint Lucia</i>	Sri Lanka
<i>Saint Vincent and the Grenadines</i>	Sudan
<i>Suriname</i>	Syrian Arab Republic
<i>Trinidad and Tobago</i>	Tanzania (United Republic of)
Chinese Taipei*	Uzbekistan
Costa Rica	Viet Nam
Cuba	Zambia
Estonia	Zimbabwe
Ethiopia	
Georgia	
Ghana	
Hong Kong (China)*	
Jamaica	
Kuwait	

## **ANNEX 2**

### **CIPM Decisions of the 109th meeting**

(October 2020)

#### **Decision CIPM/109-01**

The CIPM accepted the minutes of the second session of the 108th meeting of the CIPM as a true record.

#### **Decision CIPM/109-02**

The CIPM noted that the Task Group established by Decision CIPM/108-19 to propose terms of reference for a Working Group of Member State representatives had completed its mandate and decided to close it.

#### **Decision CIPM/109-03**

The CIPM noted the decision taken by correspondence on 28 February 2020 that Prof. Neyezhnikov will represent the BIPM at the JCGM-WG2:VIM. Seventeen members had voted in favour and one had abstained.

#### **Decision CIPM/109-04**

The CIPM noted the decision taken by correspondence 9 March 2020 that the document OIML D-01 should be developed for final publication as a joint BIPM/OIML publication. Twelve members had voted in favour and six had abstained.

#### **Decision CIPM/109-05**

The CIPM noted the decision taken by correspondence on 13 June 2020 that the draft MoU between the BIPM and the International Telecommunication Union (ITU) was approved. Seventeen members had voted in favour and one had abstained.

#### **Decision CIPM/109-06**

The CIPM noted the decision taken by correspondence on 3 July 2020 that it confirmed its approval of the audited financial statements of the BIPM and of the BIPM Pension and Provident Fund which were reviewed by the CIPM Sub-Committee on Finance in June 2020. The CIPM granted the BIPM Director quietus for the 2019 exercise. All eighteen members had voted in favour.

#### **Decision CIPM/109-07**

The CIPM noted the decision taken by correspondence on 7 August 2020 to allow Consultative Committees, Consultative Committee Working Groups and Consultative Committee Workshops to be held on-line and agreed version 3.1 of CIPM D-01 "Rules of procedure for the Consultative Committees (CCs), CC working groups and CC workshops". Seventeen members had voted in favour.

#### **Decision CIPM/109-08**

The CIPM noted the decision taken by correspondence on 21 August 2020 to hold its 109th meeting online between 11:00 and 13:30 (UTC) on 12, 13 and 14 October 2020.

All eighteen members had voted in favour.

### **Decision CIPM/109-09**

The CIPM noted the decision taken by correspondence on 11 September 2020 that the draft MoU between the BIPM and the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) was approved. Sixteen members had voted in favour.

### **Decision CIPM/109-10**

The CIPM noted the decision taken by correspondence on 9 October 2020 that, on the basis of the criteria it has previously adopted, it would be appropriate for the Republic of Azerbaijan to accede to the Metre Convention. The BIPM will convey the Decision, recalling Resolution 4 'On the status of Associate State of the General Conference' adopted by the CGPM at its 24th meeting, and the implications regarding the increase in subscription should the Republic of the Azerbaijan choose to remain as an Associate of the CGPM. Sixteen members had voted in favour.

### **Decision CIPM/109-11**

The CIPM agreed with the timetable proposed by the Chair of the CIPM Sub-Committee on Finance to implement Resolution 5 of the 26th meeting of the CGPM (2018) and requested the CIPM Sub-Committee on Finance to continue to coordinate the needed CIPM actions to build a consensus amongst advancing Member States on the issue.

### **Decision CIPM/109-12**

The CIPM welcomed the report from the Chair of the Pension Fund Advisory Board and noted the participative and consensus-building approach taken by the CIPM members and staff and pensioner representatives.

The CIPM endorsed the 2019 Actuarial Study and considers it as an expert actuarial basis for its decision making to ensure the long-term financial stability of the Pension Fund.

The CIPM decided to ask the Sub-Committee on Finance to explore the possibility and feasibility of authorizing exceptional contributions or voluntary injections of liquidity into the Fund pursuant to the discussions at the 2nd meeting of the CGPM and to articles 3.3 b) and c) of the Regulations of the Pension Fund.

The CIPM noted Article 3 of the Regulations of the Pension Fund, and asked the BIPM Director to consider commissioning a new actuarial study before the next meeting of the CGPM if necessary.

### **Decision CIPM/109-13**

The CIPM recalled Decision CIPM/105-07 and, whilst giving due consideration to the scenarios tested in the 2019 Actuarial Study, decided to offer the option for active BIPM staff to join the "Post-2017" Section of the Pension Scheme as of 1 January 2021 if they choose. This "one-time" option should be available to staff for implementation by the end of December 2020.

### **Decision CIPM/109-14**

The CIPM approved the amendments to Title IV (Service and Leave) of the RRI (Rules, Regulations and Instructions applicable to BIPM staff) as submitted in document CIPM/2020-07 (Annex 1). It noted that the CCE had been consulted and had submitted its advisory opinion expressing its views about the proposed measures. The CIPM was confident that the amendments will improve the conditions of employment of BIPM staff whilst serving the interests of both the staff and the BIPM. The new provisions of the RRI will enter into force as of 1 January 2021.



The CIPM encouraged the BIPM Director to continue with the steps necessary to further modernize the RRI and to bring forward policies that reflect current standards of conduct expected from International Civil Servants.

#### **Decision CIPM/109-15**

The CIPM approved the Terms of Reference of a Joint Task Group between the BIPM (representing the States Parties to the Metre Convention) and the International Organization of Legal Metrology (OIML) with the aim to foster enhanced cooperation between the BIPM and OIML in order:

- to facilitate both organizations in serving their Member States better,
- to make both organizations more attractive to states that do not currently participate in the activities of either/both organization(s).

Dr Louw, Dr Milton and Dr Richard were appointed as the representatives of the BIPM in the Joint Task Group. Other CIPM members will be invited to join the task group as required.

#### **Decision CIPM/109-16**

The CIPM welcomed the draft document "Evolving Needs in Metrology" prepared by SC1 of the Sub-Committee on Strategy and decided to appoint CIPM contact persons for each theme proposed. Dr Rietveld was asked to finalize the list of contact persons that will be published on the BIPM website.

#### **Decision CIPM/109-17**

The CIPM endorsed the "Grand Vision" prepared by the Task Group on the "Digital SI" (TG) and the Expert Group (EG), recognizing that it will continue to evolve. The CIPM decided:

- to appoint Dr Laiz, Dr Duan and Dr Sené as new members of the TG and to approve an update to its terms of reference,
- to support the activities in "digital transformation" proposed for inclusion in the BIPM Work Program (2020 to 2023),

The CIPM encouraged the BIPM and the NMIs to work with the TG to realize the Grand Vision, confirmed its support for the International Workshop on the "The International System of Units (SI) for FAIR Digital Data" to be held in February 2021 and noticed the possible drafting of a resolution for the 27th meeting of the CGPM.

#### **Decision CIPM/109-18**

The CIPM decided to grant the status of 'liaison organization' within the CCU to the International Mathematical Union (IMU).



Bureau international des poids et mesures

BIPM - Pavillon de Breteuil F-92312 Sèvres Cedex FRANCE