

**International Committee  
for Weights and Measures**  
Proceedings of the 111th meeting  
(21-23 June 2022)

## Executive Summary

### 111th meeting of the CIPM (21-23 June 2022)

#### Digital transformation

The CIPM acknowledged the considerable progress the BIPM is making towards the digital transformation.

#### CIPM Code of Conduct

The CIPM noted the decision taken by correspondence to approve the first edition of the CIPM Code of Conduct.

#### Headquarters

The CIPM noted the decision taken by correspondence to recommend the use of the term Headquarters (in French “Siège”) to refer to the scientific and technical staff and facilities at the Pavillon de Breteuil.

#### Approval of the audited financial statements of the BIPM and the Pension and Provident Fund

The CIPM confirmed its approval of the audited financial statements of the BIPM and of the BIPM Pension and Provident Fund. The CIPM granted the BIPM Director quietus for the 2021 exercise.

#### Budget 2023

The CIPM decided that the budget for 2023 should follow the expenditure agreed by the CGPM at its 26th meeting (2018) with an updated estimate for the revenue.

#### Supplementary sums

The CIPM adopted a way of addressing the supplementary sums paid by Member States in the BIPM Financial Report.

#### Dotation

The CIPM instructed the BIPM Director to prepare a financial plan for the period 2024-2027 based on a 1.5 % increase in the dotation each year, with an associated balanced budget.

#### By-Laws

The CIPM discussed the first draft of the By-Laws for the BIPM.

#### Continuous UTC

The CIPM stressed the importance of gaining as much support as possible for Draft Resolution D at the 27th meeting of the CGPM (2022) to ensure the future of UTC.

#### Renewal of the Director's appointment

The CIPM unanimously decided to re-nominate Dr Milton as BIPM Director and to renew his appointment for a further term from 1 January 2023.

#### Changes to membership and observership of the Consultative Committees

- CCAUV: SE NDI Systema (Ukraine) as an observer
- CCL: NIS (Egypt) as a member  
INTI (Argentina), NIMT (Thailand), NSC IM (Ukraine) as observers
- CCPR: INMETRO (Brazil), JV (Norway) as members  
NSC-IM (Ukraine) as an observer.

**MEMBERS OF THE  
INTERNATIONAL COMMITTEE FOR WEIGHTS AND MEASURES**

As of 21 June 2022

**President**

W. Louw, South Africa.

**Secretary**

T. Usuda, Japan.

**Members**

F. Bulygin, Russian Federation.

D. del Campo Maldonado, Spain.

I. Castelazo, Mexico.

N. Dimarcq, France.

Y. Duan, China.

H. Laiz, Argentina.

T. Liew, Singapore.

P. Neyezhnikov, Ukraine.

J. Olthoff, United States of America. *CIPM Vice-President.*

S.-R. Park, Republic of Korea.

M.L. Rastello, Italy.

P. Richard, Switzerland.

G. Rietveld, the Netherlands.

M. Sené, United Kingdom.

A. Steele, Canada.

J. Ullrich, Germany. *CIPM Vice-President.*

**Agenda**

1. Opening of the meeting
2. Approval of the agenda and confirmation of the decision-making process
3. Secretary's report
4. Director's report
5. BIPM Finance
6. Reports from the CC Presidents and Chairs of Sub-committees
7. CIPM Strategy
8. Feedback and discussions on the State Representatives Working Group
9. CIPM Governance
10. Plans for the 27th meeting of the CGPM (2022)
11. Update on issues with Member States and Associate States/Economies and International Liaison
12. Preparation for the election of the CIPM (and the CEC) at the 27th meeting of the CGPM (*in camera*)
13. Any other business
14. Dates of future meetings

## 1. **OPENING OF THE SESSION; QUORUM**

The International Committee for Weights and Measures (CIPM) held its 111th meeting on Tuesday 21 to Thursday 23 June 2022 in a hybrid format.

Present in person: F. Bulygin, D. del Campo Maldonado, N. Dimarcq, H. Laiz, W. Louw, M. Milton (Director of the BIPM), P. Neyezhnikov, J. Olthoff, S.-R. Park, M.L. Rastello, P. Richard, G. Rietveld, M. Sené, A. Steele, J. Ullrich and T. Usuda.

Present remotely: Y. Duan, T. Liew and I. Castelazo.

Also attending the meeting were: C. Fellag Ariouet (Personal Assistant to the Director and Head of the Executive and Meetings Office), A. Henson (Director of the International Liaison and Communication Department), C. Planche (Librarian and Drafting Officer) and R. Sitton (Publications Officer).

The following were in attendance for parts of the meeting: V. Gressier (Director of the Ionizing Radiation Department and Executive Secretary of the CCRI), R. Guliyeva (International Liaison and Communications Officer), F. Rojas Ceballos (Legal Adviser), D. Spelzini (Head of the Finance Office), M. Stock (Director of the Physical Metrology Department and Executive Secretary of the CCEM and CCU), P. Tavella (Director of the Time Department and Executive Secretary of the CCTF), J. Viallon (Executive Secretary of the CCPR), and R. Wielgosz (Director of the Chemistry Department and Executive Secretary of the CCQM).

With eighteen members participating in the hybrid meeting, the quorum was satisfied according to Article 12 of the Regulations annexed to the Metre Convention.

Dr Louw, the CIPM President, opened the meeting and welcomed those members attending in person at the BIPM Headquarters and those taking part remotely. He noted that some of the members attending in person had experienced travel disruption due to the ongoing effects of the Covid-19 pandemic and that the wearing of face masks was recommended in the meeting room, even though it is no longer obligatory throughout France.

Dr Milton, the BIPM Director, welcomed the attendees and said that this was the first time hybrid technology had been used for a CIPM meeting.

## 2. **APPROVAL OF THE AGENDA AND CONFIRMATION OF DECISION-MAKING PROCESS**

Dr Usuda, the CIPM Secretary, introduced the agenda and noted that the *in camera* session on Tuesday afternoon, with a scheduled finish time of 15:00 CEST, is equivalent to a finish time of 22:00 for Dr Duan in China and Dr Liew in Singapore. The President proposed shortening the duration of the lunch break to 40 minutes to allow the session to end earlier.

The Director clarified the timing and format of the laboratory visits on Wednesday 22 June. The CIPM members present at the BIPM Headquarters will split into groups to visit the Chemistry, Ionizing Radiation and Physical Metrology Departments in the morning. The Time and International Liaison and Communication Departments will give presentations to the entire CIPM in the afternoon.

Dr Rietveld asked for an addition to 'Any other business' to elaborate on the guidance issued by the CIPM President in March 2022 regarding the situation in Eastern Europe.

The CIPM adopted the agenda with these changes.

The Secretary said that the decision-making process at a hybrid meeting is more complicated than in person or at a fully online meeting. For example, online participants may miss parts of a discussion taking place at the physical meeting due to technical issues, thus reducing their ability to make an informed decision. He proposed that if the CIPM is unable to reach a clear decision during the meeting, discussions should continue afterwards,

and the decision should be made by correspondence. There were no objections.

The CIPM was asked to accept the minutes of the 110th meeting as a true record. The following decision was adopted.

**Decision CIPM/111-01** The CIPM accepted the minutes of the second session of the 110th meeting of the CIPM as a true record.

### 3. SECRETARY'S REPORT (INCLUDING RECALL OF DECISIONS TAKEN BY CORRESPONDENCE)

The Secretary, presented his report (document [CIPM/2022-03.01](#)) for noting. He said that the CIPM had made four decisions by correspondence since its last session in 2021 and asked the CIPM to note them:

**Decision CIPM/111-02** The CIPM noted the decision taken by correspondence on 21 December 2021 to approve the text of seven Draft Resolutions for the CGPM at its 27th meeting in November 2022 on the following subjects:

- A. On the report prepared by the International Committee for Weights and Measures on the “Evolving Needs in Metrology”
- B. On the global digital transformation and the International System of Units
- C. On the extension of the range of SI prefixes
- D. On the use and future development of UTC
- E. On the future redefinition of the second
- F. On universal adherence to the Metre Convention
- V. On the dotation of the International Bureau of Weights and Measures for the years 2024 to 2027

**Decision CIPM/111-03** The CIPM noted the decision taken by correspondence on 7 January 2022 to approve the amendments to Regulation 15.3 “Post vacancy of a staff member on non-active status” of the Regulations applicable to BIPM staff members. It noted that the CCE was consulted and concurred with the proposed amendment. The CIPM also noted the CCE’s proposal to amend Instructions I-14.5.4 “Part-time work following a maternity, paternity or parental leave” and I-14.5.5.2 “Parental leave, part-time and staff members who are spouses or partners”. The new provisions will enter into force in January 2022.

Decisions CIPM/111-02 and CIPM/111-03 were approved unanimously.

**Decision CIPM/111-04** The CIPM noted the decision taken by correspondence on 3 May 2022 to approve the first edition of the CIPM Code of Conduct.

**Decision CIPM/111-05** The CIPM noted the decision taken by correspondence on 20 May 2022 that, considering the response to comments on the text for a draft resolution prepared by the ad hoc Working group of Member State representatives in February 2022, and in accordance with the First Article of the Metre Convention, the CIPM recalled its decision CIPM/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.

The Secretary said that seventeen members had cast their votes on decisions CIPM/111-04 and CIPM/111-05. All seventeen members voted in favour of Decision CIPM/111-04. Fifteen had voted in favour and two had abstained for Decision CIPM/111-05.

The Secretary's report included a review of the CIPM election process carried out to date. The call for nominations was open from 7 March to 30 April 2022 and 27 applications had been received; with fourteen applicants received from current CIPM members. The President thanked the Secretary and reminded the members that there will be a full discussion of preparations for the election of the CIPM, including the process and any issues relating to the Committee for CIPM Election (CEC) during an *in camera* session on 23 June.

The Director reminded the CIPM that the procedure for assessing the documentation submitted by candidates for election to the CIPM is in the document "Criteria and Process for Election of CIPM Members". The task for the CIPM at the *in camera* session is to produce a list of qualified candidates and a list of recommended candidates from the 27 applications. He stressed that there should be complete transparency regarding any candidates that the CIPM does not consider to be qualified as the CEC will scrutinize the decisions taken by the CIPM.

The Director said that he had received a letter from the US State Department about the voting procedure proposed for the CGPM, which further reinforced the need for transparency during the entire election process. The letter stated that the US State Department is paying close attention to the transparency and quality of the election process. He added that only four current CIPM members are not standing for re-election at the 27th meeting of the CGPM. He observed that the Metre Convention originally foresaw an open election for half the CIPM at every CGPM. He questioned whether fourteen members being included in the slate of eighteen seeking re-election is in keeping with the spirit of what was intended.

The President said that the fourteen CIPM members who had applied for re-election should be clear that they will need to have sufficient time available to fulfil their responsibilities to the CIPM throughout their four-year terms. He noted that changes may need to be made to the criteria and process for election of CIPM members to include provisions for eventualities such as a member losing the support of their government during their term.

#### 4. DIRECTOR'S REPORT

The BIPM department directors were present during the discussions on the Work Programme 2024-2027.

The Director reviewed the proposals for the Work Programme 2024-2027 and referred to document [CIPM/2022-04-02](#) "Comments received from NMIs on the BIPM Work Programme". The Work Programme had been circulated to the NMIs for review. Seven had supplied comments during the one-month consultation exercise. The Director said that he will work with the BIPM department directors and the CC Presidents to incorporate the comments into the draft Work Programme. He will circulate the revised version to the CIPM when this is complete.

Prof. Ullrich asked how the Director will link the proposed new tasks in ionizing radiation and the enlarged digitalization activities to the strategy discussions. The Director replied that there is a version of the draft Work Programme that includes columns giving details of the costs and staff time needed to fulfil each project. The Work Programme includes details of four new recruitments in the International Liaison and Communication Department who will work full or part-time on digitalization tasks. If the 27th meeting of the CGPM approves the request for a 1 % increase in the dotation (see §5), there will be two further recruitments in 2024 specifically for the digital transformation.

#### 5. BIPM FINANCE

Dr Richard, Chair of the CIPM Sub-Committee on Finance (FSC), presented the report ([CIPM/2022-05-01](#)) for the CIPM to note. He said that the FSC had reviewed the Financial Statements for 2021 at its meeting on 24 May 2022 and had agreed unanimously that they should be recommended for approval by the CIPM and that the "Director be granted Quietus".

Dr Richard recalled that the FSC had reviewed the different options for the dotation for the years 2024 to 2027 and also the document “Addressing the supplementary sums paid by the Member States in the BIPM Financial Report”. The CIPM discussed both topics later in the meeting.

The Director gave an update on the financial situation for the year-to-date. As of 21 June, there were 63 Member States and 37 Associate States and Economies. Since 1 January 2022, Zimbabwe has been reinstated as an Associate and Cuba and Sudan have been excluded from Associate status. The Seychelles has withdrawn as an Associate.

As of 21 June 2022, there was only one Member State (Pakistan) with a partial outstanding contribution for 2020 and six with outstanding contributions for 2021 (Argentina, Brazil, New Zealand, Pakistan, Tunisia, and Ecuador). All Member States are therefore clear to participate in the 27th meeting of the CGPM. On the same date, Namibia was the only Associate with an outstanding subscription for 2020 and six Associates (Azerbaijan, Botswana, Kuwait, Namibia, Oman, and the Syrian Arab Republic) had outstanding subscriptions for 2021. The Director commented that the situation regarding receipt of payments is exceptionally good and is the result of the work of the teams in the Executive and Meetings Office and the Finance Office in maintaining contact with the government and Embassy officials who are responsible for payments. Contributions and subscriptions received for the year to 31 May 2022 totalled 8 740 138 euros.

The Director said that the financial statements for 2021 had been made available as a zip file ([CIPM/2022-05-02](#)) on the CIPM webpage for noting. He mentioned that the auditor’s report for 2021 includes a statement on the impact of the Covid-19 pandemic. The auditor had commented that the BIPM was one of the few organizations for which the pandemic had had a negligible impact on the financial position and had questioned whether it was necessary to include a Covid-19 statement in the report. The Director and the Chair of the FSC had discussed this possibility and decided that it is good practice to include the statement due to its universal adoption by other organizations in France.

The Director recalled that the FSC had confirmed its approval of the audited financial statements of the BIPM and of the BIPM Pension and Provident Fund for 2021 at its meeting on 24 May 2022, as mentioned by the Chair of the FSC earlier in the meeting. The CIPM gave unanimous approval for the financial statements and adopted the following decision.

**Decision CIPM/111-06** The CIPM 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 May 2022.

The CIPM granted the BIPM Director quietus for the 2021 exercise.

The Chair of the FSC, Dr Richard, and the former Chair, Dr Sené, thanked everyone involved for maintaining the excellent financial position of the BIPM and the efficient production of the financial reports.

### Approval of the BIPM budget for 2023

The Director presented the budget for 2023, as it had been agreed at the 26th meeting of the CGPM (2018). He said that the figures for expenditure should remain unchanged, however, the revenue for 2023 could now be estimated more accurately from the latest information about the status of Member States and Associate States and Economies. Dr Richard added that it is standard practice to update the revenue according to the best available information and that the FSC had unanimously agreed that the amended budget for 2023 should be recommended to the CIPM for approval. The CIPM adopted the following decision.

**Decision CIPM/111-07** The CIPM decided that the budget for 2023 should follow the expenditure agreed by the CGPM at its 26th meeting (2018) with an updated estimate for the revenue agreed by the CIPM Sub-Committee on Finance.



The CIPM asked the Director to comment on the possible effects of the ongoing increase in inflation in France on the operation of the BIPM. He replied that the BIPM has started to experience the effects of inflation and expects an increase in the price of gas and electricity. The operation of the BIPM will continue to be managed within the agreed budget. The discussions on the long-term plan for the BIPM will include the best estimates for future growth in inflation.

#### Addressing the supplementary sums paid by Member States in the BIPM Financial Report

The Director referred to document [CIPM/2022-05-03](#) “Addressing the supplementary sums paid by Member States in the BIPM Financial Report”. The document introduces the issue of how to deal with the supplementary sums received from Member States in respect of those States that had fallen into arrears. It gives an analysis of the relevant text of the Metre Convention and proposes a solution for the treatment of supplementary sums in the BIPM financial reports and financial records. The document includes a draft decision.

The background to the issue was summarized, recalling that the Member States, at the 24th meeting of the CGPM (2011), had asked the CIPM to investigate all aspects of the treatment of defaulting Member States being allowed to remain as members and in debt over a prolonged period. The final stage of this work was to decide how to treat the “supplementary sums” shown in the BIPM financial reports and to draft a summary of the changes being proposed to accounting practices. The FSC and the external auditor from KPMG have discussed the proposed changes. The Director thanked the members of the CIPM who had committed a significant amount of time to the discussions, particularly to Dr Steele and Dr Richard for their help in formulating a way to present the proposals.

The Director said that the proposed change in accounting practices acknowledges that the supplementary sums received from Member States in respect of States that were formerly in arrears should simply be recognized as dotation. The justification for the proposed change is that payments made by Member States would have been the same if the States in arrears had been excluded following the correct interpretation of the procedure outlined in the Metre Convention.

The CIPM discussed the proposal. It was noted that this proposed change to accounting practices would bring closure to the issues that dated back to the 24th meeting of the CGPM (2011). Drs Steele and Richard agreed to draft a set of “speaking notes” on the proposed changes to ensure that CIPM members can give a clear message during discussions with Member States at the 27th meeting of the CGPM. The “speaking notes” will emphasize the fact that the proposed change is to the way the accounts are presented; there will be no financial consequences for Member States.

The Director asked the CIPM if they agreed with the draft decision on the proposal. He said that contingent on the CIPM adopting a decision, the Chair of the FSC will announce the plans to implement the change in the accounts as part of the Finance Report to the CGPM in November 2022. The CIPM adopted the draft decision.

**Decision CIPM/111-08** The CIPM recalled Regulation 6 annexed to the Metre Convention (paragraph 6), which states that “The supplementary sums thus paid by these States to make up the dotation of the Bureau are considered as advances made to the State in arrears and are reimbursed to them in the event that it repays its arrears of contributions” and its Decision CIPM/108-33, following which States that have previously been notified of accumulated arrears exceeding the six-year period were informed that the amounts due are those equal to the first six years of default.

The CIPM decided that supplementary sums received in respect of arrears greater than 6 years should be recognized, in all cases, as payments to the BIPM in the context of the re-establishment of the dotation contributions required by paragraph 8 of Regulation 6 annexed to the Metre Convention.

The CIPM requested the BIPM Director to draft the accounts for 2022 to show a table for inclusion in Note 5 of the Financial Report that shows the remaining supplementary sums that would be refunded to Member States if certain States in arrears were to make good their arrears (following article 20 para 3b of the Annexed Regulations).

### The long-term financial plan and proposed amounts for the dotation

The Director reported on the long-term financial plan and the proposed amounts for the dotation to be presented at the 27th meeting of the CGPM. He recalled that he had made a preliminary presentation at the CIPM preparatory meeting in March 2022, which included a “Base Case” of no increase in the dotation. Options for the work that could be addressed with a 1 % increase were presented at the same time, with one option being preferred by the CIPM. The FSC discussed the cases for “no increase” and a 1 % increase in the dotation at its meeting on 24 May 2022. The FSC suggested that a 1 % increase be proposed as the “Base Case”.

A second scenario was presented showing what would happen if the CGPM were to agree no increase in the dotation (a “flat” dotation) at its meeting in November 2022. Under a “flat” dotation scenario, income will be 1.6 million euros less over 2024-2027 than for the Base Case (of 1 % increase). The possible actions that can be taken to offset this deficit include limiting the delivery of digital transformation activities to existing commitments. In addition, the two new staff required to deliver the extended digital transformation activities would not be recruited and the extra operational and IT spend of 600 thousand euros would be cut. Support for secondees would be reduced by 3.5 FTE each year and staff numbers would drop from 70 in 2023 to 68 in 2027.

The Director described what would happen if inflation were to rise above the increases projected in the financial plans. A “stress test” scenario was developed for the financial plans, which includes a model of inflation rising to 6 % throughout the programme period for operational costs and utilities and 3 % for staff costs. Under this scenario, delivery of the full Work Programme would result in a deficit of 950 thousand euros. He noted that this deficit could be balanced by the loss of approximately 90 person months of staff time, but the Work Programme would not be delivered in full.

In summary, if the CGPM grants the BIPM a 1 % annual increase in the dotation for 2024-2027 (the Base Case), subject to an estimate of inflation of 4 % for operational costs and utilities, it will be possible to deliver the Work Programme as presented. If a “flat” dotation is agreed, revenue will be 1.6 million euros less over 2024-2027 than for the 1 % Base Case and the BIPM Director would have to work with the CIPM to downscale the planned Work Programme and to use the reserves. The “stress test” for what would happen if inflation exceeded the projected amounts shows that delivery of the full Work Programme 2024-2027 would lead to a deficit of almost 1 million euros. In the worst-case scenario, consisting of a “flat” dotation with inflation exceeding the projected boundaries, the deficit could reach 2.5 million euros and the BIPM would be forced to take significant actions, including a freeze on new recruitments to replace retirees, with the proviso there are key positions that must be replaced. Other options to balance any deficit would affect the ability of the BIPM to deliver the extended digital transformation work.

The President thanked the Director and invited questions. Prof. Rietveld asked the Director to clarify whether the “Base Case” for a 1 % increase in the dotation for each year from 2024 to 2027 includes the extra work required for the digital transformation. The Director replied that it includes two new recruitments in 2024 exclusively for digital transformation tasks. Prof. Rietveld added that a “flat” dotation would result in no new recruitments for the digital transformation and that this key message should be made clear at the CGPM; it will not be possible to pursue the high-priority work on the digital transformation if only a “flat” dotation (0 %) is agreed. A 1 % increase in the dotation would allow the BIPM to pursue the digital transformation projects and to conduct the work requested by the Member States.

Dr Steele proposed a case that could be presented to the CGPM to counter any suggestions from Member States that the proposals went beyond providing for “no real growth” in activities. He explained that the requested 1 % increase in the dotation allows the BIPM to keep pace with inflation rather than to pursue new areas, such as digitalization. He added that the BIPM has developed its proposed Work Programme for 2024-2027 with a balanced budget and the requested 1 % increase is less than the predictions for inflation. Mr Henson added that although there are some Member States that are likely to support an increase in the dotation to cover inflation but not support new areas of work, as alluded to by Dr Steele; there are others that may support an increase to cover growth in activities but not to offset inflation. Therefore, the CIPM should communicate a message to

cover both eventualities. Prof. Rietveld supported this suggestion and recalled that, in his experience, there were Member States that would support growth but not an increase to cover inflation. The Director recalled that in the “Base Case” it is clear that staff numbers in 2027 will be the same as in 2023 and 2018, which would confirm that there was no real growth. The President said that the “Base Case” of 1 % is below inflation and that, to some extent, the Work Programme had been rearranged to fit into the associated financial constraints.

Dr Laiz suggested that dotation discussions at the CGPM should include the message that the BIPM’s plans for the digital transformation are not new areas of work but represent a different way in which its services will be presented in the future. Prof. Ullrich added that the digital transformation activities are essential if the BIPM is to remain relevant in the future.

Dr Steele suggested that the 1 % “Base Case” be increased to mitigate future risks from inadequate funding. The proposed “Base Case” will allow the Work Programme 2024-2027 to be delivered in full if inflation remains low and the 1 % increase in the dotation is agreed, however, the starting point will be very low for the following Work Programme (2028-2031). He warned that if a 1 % increase in the dotation is proposed and the Member States only agree to a 0.5 % increase, this would result in future problems, including having to use the financial reserves. He suggested that the long-term negative effects of a low dotation need to be included in the message to Member States during the discussions on the dotation. The President recalled that a 1 % annual increase in the dotation for 2020-2023 had been agreed at the 26th meeting of the CGPM (2018) but the inflation rate had been much closer to 1 % at that time. In real terms, the proposed Base Case under the present inflation rates would represent a significant decrease in the dotation.

The CIPM returned to the discussion on the dotation on the final day of the meeting. The President said that the global economic situation and inflation had changed since the Base Case of 1 % had been discussed by the FSC in May 2022 and the CIPM should consider the possibility of proposing an increase of 1.5 %. The CIPM discussed the proposal and agreed that a 1.5 % increase in the dotation each year for 2024-2027 should be requested and the Director was asked to prepare a balanced budget to reflect this amount.

**Decision CIPM/111-10** The CIPM noted the base case financial plan proposed by the CIPM Sub-Committee on Finance that takes into consideration the current economic climate and the minimum required to deliver the work plan and instructed the BIPM Director to prepare a financial plan for the period 2024-2027 based on a 1.5 % increase in the dotation each year. The CIPM asked the Director to prepare a balanced budget to reflect this amount.

#### Update from the Chair of the PFAB

Dr Steele, the Chair of the BIPM Pension Fund Advisory Board (CIPM-PFAB), reported on its activities since the last meeting of the CIPM. He recalled that PFAB had welcomed the decisions made by the CIPM relating to the Pension Fund, particularly decision CIPM/110-18 to authorize the exceptional transfer of 3 million euros of unreserved cash to the Pension Fund in 2021. This transfer had sent out a message to the BIPM staff that the CIPM is concerned about the future financial stability of the Pension Fund and is taking actions with support from the Director to improve this situation. He reminded the CIPM that they are responsible for instructing the Director to initiate actuarial studies for the Pension Fund, which are conducted on a 5-year cycle, the last study being in 2019. He suggested that the next study should be launched earlier than planned but after the election of a new PFAB Chair in early 2023. This will allow the incoming PFAB Chair to follow the actuarial process from beginning to end.

The President thanked Dr Steele and the PFAB for their work over the last four years.

## 6. REPORTS FROM THE CC PRESIDENTS AND CHAIRS OF SUB-COMMITTEES

Dr Rastello, President of the CCPR, presented the report [CIPM/2022-06-a](#) and Dr Park, President of the CCQM, presented report [CIPM/2022-06-b](#). These were the only CCs that had met since the previous session of the CIPM.

### Consultative Committee for Photometry and Radiometry (CCPR)

Dr Rastello said that the CCPR had held its 25th meeting on 10-11 May 2022. Three new Task Groups had been announced at the meeting: “Recommending a CMC structure for fibre optics” (CCPR-WG-CMC-TG4) within the CCPR Working Group on CMCs (CCPR-WG-CMC) and “Optical Fibre Power Responsivity” (CCPR-WG-SP-TG13) and “Radiometry to Support Gravitational Wave Detection” (CCPR-WG-SP-TG14) within the CCPR Working Group on Strategic Planning (CCPR-WG-SP). The Task Group “CCPR Strategy Document” (CCPR-WG-SP-TG10) published the 2022-2032 CCPR Strategy Document on 7 June 2022. The same Task Group has organized a survey among CCPR members to ascertain their future requirements such as workshops, comparison and pilot studies, and new CMCs.

Dr Rastello presented the status of CCPR Key Comparisons and the next steps for the CC. The next steps include the creation of a Task Group on “Discussion on the Impact on Digitalization on Matters Related to the CCPR”, which will focus on areas such as Digital Calibration Certificates, data formats, digital sensors, and complex systems. The CCPR and the International Commission on Illumination (CIE) are planning a joint workshop on “Cone Fundamental Based Photometry”. The workshop will discuss the “cone-fundamental” based photometric system, which will require a new link between photometry and radiometry. This link will be a key scientific challenge for the definition of the candela in the future and a discussion forum will be set up to consider the associated topics for the workshop. Dr Rastello noted that although this change is of significant interest to the CCPR, discussions are at an early stage and resulted from new material and research originating from the CIE. The change will be to the Standard Photopic Observer,  $V(\lambda)$ , which the CIE had agreed in 1924. The discussions will focus on the impact on stakeholders and users compared to the benefits.

### Consultative Committee for Amount of Substance: Metrology in Chemistry and Biology (CCQM)

Dr Park reported that the CCQM had held its 27th meeting on 27-29 April 2022. He said that the development of the Roadmap for “Metrology of Infectious Diseases” had been a major task for the CCQM. In this context, the CCQM held a three-day online workshop “A roadmap for metrology of infectious disease and future pandemic readiness” on 5-7 October 2021. This workshop called for the establishment of a Task Group to develop a draft roadmap for review and publication by the CCQM. He presented the vision for the roadmap and a summary of the other outcomes of the workshop.

He summarized the work conducted in the Task Groups to harmonize the work of the CCQM. The CCQM Task Group on Guidance for KCRV Calculation will update the CCQM guidance document, including worked examples. The CCQM Strategic Planning Working Group (CCQM-SPWG) Task Group on Comparisons will harmonize working practices on the organization of comparisons across Working Groups, including pilot studies.

Dr Park informed the CIPM that a Task Group on Stakeholder Engagement has been set up to develop a strategy document that will outline strategic and operational aspects for external stakeholder engagement by the CCQM. It will be chaired by Dr Richard Brown of NPL. In addition, the CCQM is supplying the CIPM sectorial task groups with advice on the CCQM’s experiences and expertise to support the *CIPM Strategy 2030+*.

The President thanked Dr Park and invited questions and comments. The Director said that the roadmap for metrology of infectious diseases and future pandemic readiness is available on the front page of the BIPM website for consultation; the deadline for comments is 15 July 2022.

The CIPM discussed the experiences of the CCs in holding meetings online and the future opportunity for hybrid meetings. The Director reported that the current CIPM meeting was the first major meeting hosted at the BIPM Headquarters to use the hybrid format and that the BIPM is receiving a growing number of requests for meetings in this format. The Director said that the structure of the agenda for hybrid meetings requires careful consideration to ensure maximum participation. Dr Sené informed the CIPM that the monthly series of online CCRI webinars are attracting more participants than would have attended a physical meeting. The online format also attracts experts from outside the NMI community who would not normally attend. The discussion by the CIPM recognized that an additional disadvantage of online meetings is how to cope with attendees from widely differing time zones.

### Membership and observership of the CCs

The Secretary presented the proposals for membership and observership of the Consultative Committees (document [CIPM/2022-22-06-c](#)) for discussion and approval. The CIPM adopted Decision CIPM/111-09.

**Decision CIPM/111-09** The CIPM accepted the following changes to the membership and observership of the Consultative Committees:

CCAUV: SE NDI Systema (Ukraine) as an observer  
 CCL: NIS (Egypt) as a member  
 INTI (Argentina), NIMT (Thailand), NSC IM (Ukraine) as observers  
 CCPR: INMETRO (Brazil), JV (Norway) as members  
 NSC-IM (Ukraine) as an observer.

## 7. CIPM STRATEGY

The President asked the Chairs of the five Sub-Committees on Strategy for an update on progress with the documents that detail the outputs of their work. The CIPM will use these in the development of the *CIPM Strategy 2030+*. The Chairs agreed that the summary reports of their outputs are ready for publication, with the proviso that the summaries may require minor updates. The five Sub-Committees are: SC1: Responding to Evolving needs for Metrology (Prof. Rietveld); SC2: Addressing Key Scientific Challenges (Prof. Ullrich); SC3: Strategy for deepening engagement with other IOs (Dr Olthoff); SC4: Review of the strategy for future membership of the organization (Dr Steele); and SC5: Modernizing the operations of the organization (Dr Richard).

The President said that he will combine the five draft documents into a single one for presentation to the CGPM in November 2022. An introduction has already been drafted. The President recalled that the plan is to publish the final *CIPM Strategy 2030+* in time for the 150th anniversary of the BIPM in 2025.

The President asked for an update of the work of the cross-cutting Task Groups.

Dr del Campo Maldonado said that the planned Task Group on Climate Change (Decision CIPM/110-10) will be launched after the joint BIPM-WMO Metrology for Climate Action workshop on 26-30 September 2022. Dr del Campo Maldonado said that she is a Co-Chair of the workshop (see §11).

Prof. Ullrich referred to document [CIPM/2022-12-01](#) “Report of the CIPM Task Group on the Digital SI (CIPM-TG-DSI)”. He said that the Task Group had made substantial progress with the Joint Statement of Intent “On the digital transformation in the international scientific and quality infrastructure”, which the CIPM had approved in decision CIPM/110-22. The Joint Statement has been signed by the BIPM, the International Organization of Legal Metrology (OIML), the International Measurement Confederation (IMEKO), the International Science Council (ISC) and its Committee on Data (CODATA), the International Organization for Standardization (ISO), The International Electrotechnical Commission (IEC) and the International Laboratory Accreditation Cooperation (ILAC).

Prof. Ullrich also reported that the CCU Working Group on Core Metrological Terms (CCU-WG-CMT) has been active, and will meet again in September 2022. It has discussed topics including harmonization of unit formats. Prof. Neyezhnikov gave further information on the work of the CCU-WG-CMT in §11 in the report of the JCGM.

Prof. Ullrich recalled that the CIPM-TG-DSI has proposed a general structure and draft mission for the “Forum on digitalization and metrology”. The forum will include members from NMIs, CCs, RMOs, QI stakeholders, scientific associations, and international organizations.

The President thanked Prof. Ullrich and commented that he will collaborate with him to agree the preparations required to set up the Forum in advance of the next CIPM meeting in March 2023. Prof. Ullrich added that some of the signatories to the Joint Statement of Intent “On the digital transformation in the international scientific and quality infrastructure” have asked what these next steps will be.

## 8. FEEDBACK AND DISCUSSIONS ON THE STATE REPRESENTATIVES WORKING GROUP

The President informed the CIPM that the State Representatives Working Group (SRWG) intends to submit a report to the 27th meeting of the CGPM, that will include proposals for decisions from the CGPM on certain issues. The SRWG will send their final report to the President for comment. He said that the SRWG is in agreement with the proposal by the CIPM to differentiate between the use of the terms BIPM and BIPM Headquarters in Decision CIPM/111-05. The President invited comments.

Dr Steele said that he anticipates the CIPM will be invited, at the 27th CGPM (2022), to take a stronger leadership role towards any decision making at the 28th CGPM (2026). It is likely that the CIPM will be expected to continue with activities, including its work to modernize the organization and to develop rules of procedure, with the aim of developing a Draft Resolution for the 28th CGPM. He was of the opinion that the Member State Representatives are not likely to set up another *ad hoc* Working Group to investigate governance issues and that in future this may be left to the existing mechanisms within the CIPM.

## 9. CIPM GOVERNANCE

Dr Richard recalled that recent activities of the Sub-Committee SC5: “Modernizing the operations of the organization” had included drafting the Rules of Procedure (RoP) and the Code of Conduct for the CIPM. He said that SC5 remains ready to continue with its tasks towards modernizing the organization in anticipation of the outcomes of the SRWG.

He informed the CIPM that SC5 had received the first draft of the By-Laws for the BIPM two weeks before the start of the CIPM meeting. The first draft had been prepared by Peter Quayle, an international lawyer specializing in the law, governance, and jurisdictional immunities of international organizations. SC5 had met on 21 June 2022 to discuss the first draft and the participants had asked the BIPM Legal Adviser to explain the differences between Rules of Procedure and By-Laws.

Dr Richard said that SC5 had discussed a draft proposal for the By-Laws. Some agreement had been reached on the process but not on the content of the document. SC5 agreed that the two Co-Chairs of the SRWG should be lobbied to ensure that their report to the 27th CGPM will include a proposal for the CIPM to be given a mandate to continue developing the By-Laws for presentation and approval at the 28th CGPM (2026). SC5 will continue its work on the By-Laws after such a mandate has been received from the CGPM in November 2022.

Dr Richard noted that it is essential to consult the Member States during further preparation of the By-Laws to ensure that they are included at all stages of the process. The CIPM must develop strategically acceptable and legally sound By-Laws as they have the potential to solve many of the issues discussed at the SRWG. Dr Richard concluded by saying that the draft By-Laws and an explanatory document will be circulated to the CIPM; no comments are required on the documents until after the 27th CGPM.

The President thanked Dr Richard and invited questions. Dr Richard said that a Draft Resolution regarding the By-Laws is expected to be presented to the 28th meeting of the CGPM (2026). He added that there are no Rules of Procedure for the CGPM to describe procedures, for example, how the conference should be organized and how decisions should be taken. The President said that the By-Laws had been drafted in response to a request from the SRWG in 2021. Dr Richard commented that the SRWG had requested that it be consulted early in the preparation of the By-Laws to allow its members to contribute. The President said that the SG5 had met on 21 June 2022 and had concluded that there is insufficient time to conduct a rigorous process and produce a final draft of the By-Law document for the SRWG to discuss in time for the CGPM in November 2022.

The Director reminded the CIPM about the specificity versus generality argument with regard to the By-Laws. He noted that the Metre Convention includes references to specific items, such as banking through the State bank *Caisse des dépôts et consignations*, which no longer exists. The same consideration of generality against specificity should apply to the By-Laws to ensure references are not made to specific practices that will rapidly become out of date.

## 10. PLANS FOR THE 27TH MEETING OF THE CGPM (2022)

The Director gave the CIPM an update on the plans for the forthcoming meeting of the CGPM. He said that the draft Special Procedure proposed to regulate the conduct of the 27th meeting of the CGPM had been distributed to the Member States as an Annex to the Convocation earlier in 2022. Member States were invited to confirm their agreement in principle to the implementation of this Special Procedure by 30 June 2022. Several Member States had indicated their support for the Special Procedure, however representatives from the USA and France raised concerns about the proposed electronic voting process. The Director has met with representatives of both States and an alternative has been found that will address their concerns. A revised version of the Special Procedure, which should be acceptable to all Member States, will be produced after the deadline of 30 June.

The voting for the election of the CIPM and the CEC at the 27th CGPM will be conducted by a supplier that specializes in providing voting services to meetings of international organizations, and which will be independent of the BIPM staff.

The Director presented the proposed timetable for the sessions of the 27th CGPM and the timeline for the preparation of key documents. He noted that all documents are on schedule. Monday 14 November has been set aside for a meeting of State Representatives and for visits to the BIPM Headquarters. He said that three receptions were being organized: a reception at the UNESCO building hosted by the South African embassy; a special tour of the Chateau de Versailles; and a visit to the Cassini Room at the Observatoire de Paris. The CIPM was shown the list of speakers for the CGPM.

The Director continued by explaining his communication plans for the CGPM. He said that the CIPM President will write to Member States during the third week of July 2022 to propose an agenda for a preparatory meeting and an informal CGPM dotation committee meeting. The letter will address all open questions about the organization of the CGPM meeting. At the same time, the Member States will be sent the revised text for the Special Procedure and details of the proposed dotation and Work Programme 2024-2027. A preparation meeting will be held online for the Member State Representatives on 6 September 2022. The “Highlights and Notes” to support dotation discussions will be published along with the “near final version” of the Work Programme. A meeting of State Representatives will be held at the BIPM Headquarters on 14 November 2022.

The Director opened the floor for questions and comments. He confirmed that a slot will be scheduled for the SRWG to present its findings during the CGPM. Prof. Neyezhnikov commented that the timetable does not include a report from the Joint Committee for Guides in Metrology (JCGM). He commented both JCGM WG1 and WG2 have made considerable progress over the last four years. The Director said that the JCGM can be added to the timetable if required.

It was confirmed that there will be no limit to the number of Member States that can attend meetings of the dotation committee and provision will be made for online participation. The CIPM asked when Draft Resolution V “The dotation of the BIPM for the years 2024 to 2027” will be updated to include the actual figures proposed for each year. The Director replied that an amended Draft Resolution V, including the figures, will be included in the communications that will be sent to the Member States in the third week of July 2022. It was noted that the discussions within the CIPM regarding the final figures for the dotation are ongoing. Dr Richard reiterated that although the FSC had recommended 1 % for the Base Case, the CIPM can choose a different amount (see §5).

### Draft Resolutions D and E

Dr Dimarcq presented the background to Draft Resolution D “On the use and future development of UTC” and Draft Resolution E “On the future redefinition of the second”.

He said that Draft Resolution D concerns the development of Coordinated Universal Time (UTC) as a continuous time scale. He emphasized that there is a need for a continuous reference time scale for technological and digital applications, that underpin critical national infrastructures. It is essential that the common time scale is continuous, monotonic, reliable, and easily available. He summarized recent actions at the international level. Participants at the International Timing and Sync Forum (ITSF), held in Brighton (UK) in November 2021, had sent a petition to the International Telecommunication Union Radiocommunication Sector (ITU-R) WP 7A, which stated that the “*UTC leap second introduces a high risk of failure for IT and Industry 4.0*”. In addition, the ITU-T has issued a statement on continuous time without leap seconds traceable to a common time reference, which stated “*Given the 3GPP requirement for a continuous timescale, the actual implementation in this case could make use of the content of the distributed UTC information that is not impacted by leap seconds, e.g., GPS time*”. Representatives from the Consultative Committee for Time and Frequency (CCTF) have met with the ITU Radiocommunication Director to develop a common way forward towards the World Radio Conference 2023 so that both organizations continue to address the needs for internationally recognized timing and synchronization to ensure a continuous UTC and efficient protocols for the transmission of UTC and (UT1-UTC). The issue will be discussed in a session at the next ITU inter-regional workshop in December 2022 and in a special issue of the *ITU NEWS* in March 2023. The CCTF will continue to participate in the ITU-R working party 7A, with the next meetings to be held in September 2022 and 2023 at the BIPM. The International Union of Radio Science (URSI) has passed Resolution R1 “on the need for continuous reference time scale”.

He reported that Dr Tavella and Dr Milton had met representatives of the Holy See to discuss the historical aspects of the proposed change and the importance of sustaining the general perception of conformity to astronomical phenomena.

Dr Dimarcq thanked the CIPM Task Group on Continuous UTC for its help in finalizing the document that will support Resolution D. He said that the active support of CIPM members is essential during preparations for the 27th CGPM to reinforce the message that the survival of UTC could be in jeopardy. The Google “smear” is now being proposed as a new “international standard”, and GPS system time is already being considered as a continuous time reference and could become a *de facto* international standard time. He stressed that there is a risk that the international traceability and fundamental role of UTC and UTC(*k*) could be lost from the NMIs. He urged CIPM members to discuss the issue with their respective CGPM delegations to ensure that those countries supporting the resolution will provide official positive messages.

Dr Dimarcq continued by presenting Draft Resolution E. He said that the CCTF had held workshops on 13 May and 10 June 2022 to explore possible options for the redefinition of the second. The three options being considered are: Option 1: a single transition; Option 2: a fixed (option 2.1) or an evolutive (option 2.2) ensemble of transitions (with appropriate weights); or Option 3: a fundamental constant. In addition to the workshop, there is an open web forum maintained on the BIPM website to discuss the possible options. The intention is to provide a SWOT (strengths, weaknesses, opportunities, and threats) analysis for the various options so that the preferred



option can be presented to the 28th meeting of the CGPM (2026). He said that the work on Draft Resolution E is less urgent than for Draft Resolution D, however there is a need to maintain the momentum. He invited comments.

The CIPM asked if there is much opposition to Draft Resolution D. Dr Dimarcq said that although most Member States are expected to support Draft Resolution D, a small minority of states that have objections may voice their opinions at the CGPM. He called for those countries in favour of the Resolution to make their opinions known and to be as active as possible during the 27th CGPM. He added that there are some Member States that may not be aware of the criticality of the issue with regard to the future of UTC as a reference time scale.

The Director said that the discussions on this issue have gone on for far too long. The majority of the delegates at the ITU have abstained during decision making and the option to abstain is no longer a supportable position for the NMIs. He added that Dr Tavella, the Director of the Time Department, has broadened her activities to engage with stakeholders who participate in the implementation of time for network purposes, for example Google. He said that it was clear from these contacts that among the many diverse groups that implement time at a practical level, their preferred option is to continue to use UTC. However, because UTC is not continuous, they have to implement “work arounds”. They do not want to continue to have to do so and would prefer UTC to be a continuous time scale. Many of the technicians that have to develop such work arounds are currently supporting the proposals to make UTC a continuous time scale and petitions and statements in support of UTC have been received from several major players in global IT. If UTC does not become a continuous time scale, these groups will move away from UTC as a time scale that is sustained and developed by the NMIs and will opt to use an alternative continuous time scale such as GNSS time. It is essential that the 27th CGPM receives a clear message that the CCTF supports action to support the requirements of stakeholders.

The President reinforced the message that CIPM members should discuss the importance of the proposal for continuous UTC with their RMOs to ensure that the message is conveyed to countries that do not have representation on the CIPM.

The CIPM discussed the likelihood of being able to persuade the members of the ITU to change their stance on the voting from abstention to a positive vote. Dr Dimarcq said that the questions being asked at the CGPM and the ITU are different. The BIPM is responsible for UTC and the realization of the second and the ITU oversees the dissemination of the time scale. He added that previously it was not clear which organization was responsible for the leap second. Now it is clear that the CGPM is responsible for the decision regarding the future of the leap second and continuous UTC. However, it is important that close collaboration with the ITU is maintained, as it is responsible for the one of the connections between the reference time scale and users.

The Secretary informed the CIPM about the actions that had been taken in Japan to address the political issues related to the proposed change to UTC. He said that the Japanese delegation to the CGPM will be from the Ministry of Trade and Industry, and they had been made aware of the need to adopt Draft Resolution D to avoid hidden risks in the future. The discussions had been positive, and he suggested that CIPM members should lobby relevant Government Ministries and Departments in their countries to explain the case for adopting the Resolution.

The Director returned to an earlier comment and gave details of the discussions between the BIPM and the Holy See regarding continuous UTC. He said that an expert in astronomy from the Holy See had been contacted as he had considerable experience in presenting changes from a human perspective. The Director and Dr Tavella have spoken to him to seek his advice on how the documentation relating to the change to continuous UTC can be written to explain that human values will not be eroded. He added that the Holy See supports the proposed change and, whilst recognizing that modernizing the process is a technical issue, the way it is communicated should be considered carefully and the change should be presented in a way that does not dehumanize the process.

Dr Dimarcq was asked about the timetable for the various options in Draft Resolution E. He replied that Option 2 would take 5 to 10 years, but Option 3 would require 10 to 20 years. The Director added that Option 2.2 is conceptually very similar to the current situation.

## 11. UPDATE ON ISSUES WITH MEMBER STATES AND ASSOCIATE STATES/ECONOMIES AND INTERNATIONAL LIAISON

### Member States and Associates

Mr Henson gave an update on Member States and Associates for the period since the last face to face meeting of the CIPM in October 2019. Belarus became a Member State in January 2020 and Estonia in January 2021. Cambodia became an Associate in January 2021 and Zimbabwe was reinstated as an Associate in February 2022. Cuba and Sudan ceased to be Associates in January 2022. The Seychelles withdrew as an Associate in January 2022, following a review of its international engagement portfolio in light of the global economic crisis. As of June 2022, 108 of the 193 States listed by the UN (taking into account the eleven economies in CARICOM) participate in the BIPM's activities. He said that Draft Resolution F "On universal adherence to the Metre Convention" is concerned with participation of the remaining 85 States.

Mr Henson recalled that decision CIPM/110-17 encouraged Luxembourg, which has been an Associate since 2014, to accede to the Metre Convention and it will enter the escalator mechanism in 2023. Azerbaijan is on the escalator mechanism (CIPM/109-10) and Costa Rica, which is also on the escalator, is in an advanced stage of acceding to the Metre Convention. He said that Chinese Taipei has continued to pursue its request for a reconsideration of the way in which its subscription is calculated. The Dominican Republic has re-engaged with the BIPM following its exclusion as a Member State in 2015 and is in discussions with the French Foreign Ministry.

Mr Henson completed his presentation by mentioning the issue of Member States that are not aligned to an RMO, for example, Iran, Iraq, and Israel. The President of the National Metrology Center of Iran (NMCI) has asked the BIPM for help in participating in an RMO; NMCI is an Associate Member of APMP but cannot become a Member because of APMP's geographic rule. Mr Henson asked the CIPM for guidance on how, or if, the BIPM should help NMIs from non-aligned Member States. The CIPM discussed the issue and agreed that the Joint Committee of the Regional Metrology Organizations and the BIPM (JCRB) should be contacted for advice. The Director said that he will discuss the issue bilaterally with the RMOs in advance of the next JCRB meeting in March 2023.

The President thanked Mr Henson and invited questions. Dr Steele asked if there is a moratorium on individual economies applying to become an Associate Economy of the CGPM or if this only applies to groups of economies. Mr Henson referred to the text of Resolution 5 of the 24th CGPM (2011) "On the acceptance of Economies as Associate of the General Conference": the CGPM could consider applications from individual economies, such as Kosovo on a case by case basis. Dr Laiz commented that the NMI in Peru had informed him that the country is continuing with its efforts to become a Member State. The President recalled the news that the Seychelles had withdrawn as an Associate for economic reasons. He warned that this could be the start of a trend, with other 'small' countries withdrawing. He cited the example of 'smaller' countries in Africa, which have struggled to have their CMCs published. Such countries may prefer to seek third-party accreditation with metrological traceability to an NMI in their region, which is sufficient for their needs. The digital transformation may offer new opportunities for States to engage with the international measurement system at low cost, for example through e-learning initiatives and access to data. Digitalization could open up a new tier of engagement at a level below that of Associate status.

### International liaison activities

Ms Guliyeva presented some highlights from the international liaison activities since October 2019. She said that a number of existing liaisons with international organizations have been formalized, the most recent of which was the signing of the Joint Statement of Intent "On the digital transformation in the international scientific and quality infrastructure" by the CIPM, OIML, IMEKO, ISC, CODATA, ISO, IEC and ILAC in 2022. She listed the agreements, MoUs and practical arrangements that the BIPM had concluded with other organizations during the period.

Ms Guliyeva informed the CIPM that liaison activities with ILAC had included a joint webinar "Mining KCDB 2.0 in the context of accreditation" on 12 January 2021, which welcomed more than 600 experts from

accreditation bodies and accredited laboratories around the world. The CIPM and ILAC will hold a joint webinar on the “Digital Transformation in the context of Accreditation” on 30 June 2022.

She recalled that a joint Task Group had been set up between the BIPM and the OIML in response to Decisions CIPM/108-5 and CIPM/109-15. The Task Group, which is intended to foster enhanced cooperation between the two organizations, met in December 2020 and March, June and September 2021. The BIPM and OIML published the joint document “National Metrology Systems – Developing the institutional and legislative framework” in 2021.

Ongoing work within the International Network on Quality Infrastructure (InetQI) is focusing on developing the concept of an InetQI “Single library” bringing together available resources for the QI community. InetQI is also planning to strengthen its web resource and web presence.

Ms Guliyeva said that liaison activities with the Organisation for Economic Co-operation and Development (OECD) had included contributions in 2021 by the BIPM to analytical work through the IO Partnership for effective international rulemaking on the “Compendium of International Organisations’ Practices: Working Towards More Effective International Instruments”. The IO Compendium is the first common tool developed collaboratively by 50 International Organizations to improve the quality of international rulemaking and lists BIPM practices such as World Metrology Day, CBKT Programme, CIPM MRA Review, and the JCGM in five core focus areas. In addition, the Director had taken part in the OECD virtual event held on 13 September 2021: “Rethinking and modernizing international rulemaking to design better policies for the 21<sup>st</sup> century”.

Ms Guliyeva asked Mr Henson to comment on the proposals for a QI project with the OECD. He said that the BIPM has been investigating the feasibility of undertaking economic studies of metrology. The methodology of conducting such studies is difficult because metrology is inextricably linked with many other sectors. The latest proposal is to expand the studies to look at the economic impacts of quality infrastructure as a whole and the OECD is considering the proposal. He added that the PTB may provide funding for the study and Ms Guliyeva could be seconded to the OECD to support the project if it goes ahead.

Ms Guliyeva continued her presentation by noting that there is ongoing collaboration with the World Trade Organization (WTO) Committee on Technical Barriers to Trade (WTO TBT Committee). The BIPM gave a presentation during the quality infrastructure thematic session of the WTO TBT Committee on 12 November 2019.

She recalled that the Permanent Delegation of Kazakhstan to the United Nations Educational, Scientific and Cultural Organization (UNESCO) has informed the BIPM that it will submit a proposal to the October 2022 session of the UNESCO Executive Board for World Metrology Day, to be proclaimed as a “World Day”. The Director added that Covid-19 pandemic had delayed discussions with UNESCO on World Metrology Day and considerable efforts are now underway to try and have it proclaimed as a joint BIPM/OIML/UNESCO World Metrology Day in time for the 150<sup>th</sup> anniversary of the signing of the Metre Convention on 20 May 2025. He thanked the Permanent Delegation of Kazakhstan for their support. Ms Guliyeva said that the next biennial UNESCO General Conference will be in 2023; a decision at this meeting is essential to allow the BIPM, OIML and UNESCO to hold the first joint World Metrology Day in 2025. She called on the CIPM to support this initiative.

Ms Guliyeva finished by recalling that the BIPM had submitted its application online in August 2021 for observer status at the United Nations Framework Convention on Climate Change (UNFCCC) COP 27 on 7-18 November 2022. The UNFCCC Secretariat is reviewing the application and will decide in August 2022. She said that admission is a one-off process and there is no need for admitted organizations to re-apply for observer status at future COPs.

#### Joint Committee for Traceability in Laboratory Medicine (JCTLM)

Dr Wielgosz informed the CIPM that the JCTLM database software is obsolete, having been in use since the launch of the database in 2006. A budget of 130 000 euros was assigned for a replacement and a call for tender

made in 2021. The call for tender had a core requirement to maintain the existing facilities of the database with an option to make it fully web-based, similar to the KCDB. The lowest tender received from an external contractor was 200 000 euros. Therefore, it was not possible to go ahead with a fully web-based replacement, and the project would be taken forward in two steps and the nomination and review process will continue to be based on excel spreadsheets and emails, rather than being web-based. The updated version of the database will be launched on 1 September 2022 with the address [www.jctlmdb.org](http://www.jctlmdb.org). He said it would cost an additional 70 000 euros to develop an online submission and review web platform, which has received support from the user community. Discussions with CIPM representatives and the CIPM bureau have taken place on how to raise the extra funds. The CIPM bureau agreed, in January 2022, to the proposal to accept sponsorship from industrial members of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) and International Council for Standardization in Haematology (ICSH) subject to the users of the JCTLM database accessing it through the [jctlm.org](http://jctlm.org) domain and the acknowledgements only being shown there. The CIPM bureau made the following comments:

- The decision to accept grants from industry should not call the impartiality of the BIPM into question, either in fact or in appearance.
- The opportunity to support the work of the JCTLM should be seen to be open to “all” the corporate members of IFCC or ICSH before grants from any specific companies are recognized.
- BIPM should not lose ownership of the database itself (i.e., the grants only pay for software functionality to access the database).
- There should be no suggestion that the BIPM is supplementing its own budget with the grants from industry; they are specific to supporting the joint actions of the JCTLM.

Dr Wielgosz updated the CIPM on the financing of the JCTLM. He recalled that the JCTLM is run mostly by volunteers and that the Secretariat has annual running costs of approximately 100 thousand euros; the IFCC provides funding of 50 thousand euros and the BIPM provides the other 50 thousand euros. He informed the CIPM that the funding agreement with the IFCC is scheduled for renewal in 2023 and that the management board of the IFCC has changed. He said the JCTLM community has made considerable efforts to explain the benefits of the JCTLM to the new board. The new board requested more formal accounting of the way in which the Secretariat spends the annual funding of 50 thousand euros and this has been supplied. The IFCC has reiterated its ongoing support for the JCTLM but has asked it to consider other funding models.

Dr Wielgosz said that Dr G. Miller, the Chair of the JCTLM, will give a presentation at the 27th meeting of the CGPM that will focus on standardization issues in the IVD industry.

The President thanked Dr Wielgosz and invited questions. The CIPM asked about the maintenance costs for the new database. Dr Wielgosz replied that it is necessary to budget 10 % of the initial cost of the database to cover annual maintenance by the external contractor.

#### Metrology for Climate Action workshop ([www.bipmwmo22.org](http://www.bipmwmo22.org))

Dr Wielgosz gave an overview of the forthcoming Metrology for Climate Action workshop on 26-30 September 2022. The workshop is a joint initiative between the BIPM and the World Meteorological Organization (WMO). He presented the organization and structure of the Steering Committee and noted that the Workshop Co-Chairs are Dr del Campo Maldonado (CIPM) and Dr Anthony Rea (WMO). Dr Wielgosz said that EURAMET has agreed to be a partner organization for the workshop and other partners would be welcome. EURAMET will provide sponsorship of 10 000 euros towards the cost of the workshop. In addition to partners, the workshop has stakeholder organizations that do not provide financial support, but which have activities consistent with the aims of the workshop and will work to promote its outcomes.

The workshop has two themes: Metrology in support of the physical science basis of climate change and climate observations; and Metrology as an integral component of operational systems to estimate greenhouse gas emissions based on accurate measurements and analyses. Dr Wielgosz said that the deadline for submission of abstracts is 30 June 2022 and 70 abstracts had been received as of 23 June. He asked if there were any questions or comments.

Dr del Campo Maldonado thanked Dr Wielgosz and his team for the considerable amount of work that has gone into the organization of the workshop. She said that the outcomes of the workshop will be important in steering the work of the metrology community in the field of climate change over the next ten years. She urged CIPM members to encourage staff at their NMIs to participate in the workshop.

#### Joint Committee for Guides in Metrology (JCGM)

Prof. Neyezhnikov presented report [CIPM/2022-11-02-b](#) for noting. He said that the JCGM Working Group on the International Vocabulary of Metrology (JCGM-WG2:VIM) had held meetings on 6, 21 and 28 April and 13-17 June 2022. These meetings had focused on discussing the feedback received from the circulation of the first VIM4 Committee Draft (VIM4 1CD) and preparing the second Committee Draft (VIM4 2CD). He commented that work on the VIM4 2CD is likely to continue for the rest of 2022, after which it will be sent to the JCGM Member Organizations for comment.

Prof. Neyezhnikov said that CCU Working Group on Core Metrological Terms (CCU-WG-CMT) had met on 4 May 2022. The meeting had focused on the analysis of the proposed definitions by the Expert Group of the CIPM Task Group on the Digital SI (CIPM-TG-DSI) and the suggestion from the CIPM and the CIPM-TG-DSI to invite additional experts to take part in its work. In this context, the CCU-WG-CMT members nominated individual experts with experience in programming, mathematics, linguistics, and semantics, as well as members of the CIPM-TG-DSI and Expert Group, digitalization, CODATA and VIM committees who will be invited to attend its next meeting on 13, 20 and 22 September 2022.

He concluded by informing the CIPM that the CCU and CCQM will hold a joint workshop on “Quantities that are counted” on 28-30 March 2023.

#### 12. PREPARATION FOR THE ELECTION OF THE CIPM (AND THE CEC) AT THE 27TH MEETING OF THE CGPM

The CIPM held this agenda item *in camera*.

**Decision CIPM/111-11** The CIPM agreed on a “recommended list” of candidates for election to the CIPM and asked the CIPM Secretary to send it to the Chair of the Committee for CIPM Election (CEC), along with the complete list of candidates assessed as qualified and a package with supporting documentation of all nominated candidates as required by the CIPM Criteria and Process for Election of CIPM Members.

#### 13. ANY OTHER BUSINESS

CIPM members who were physically present at the meeting visited the Chemistry, Ionizing Radiation, and Physical Metrology Departments on the morning of 22 June. The staff of the International Liaison and Communication and Time Departments gave presentations in the afternoon to the whole CIPM, including the online participants.

The feedback given by the CIPM members on the visits and presentations was very positive. The CIPM praised the quality and extent of work the staff were carrying out, particularly in view of the difficulties over the last two years during the Covid-19 pandemic. The CIPM noted the visits had demonstrated that the BIPM staff are

aware of the resources available to them and that their work is different to that of the NMIs, allowing the BIPM to play a key and distinctive role to the rest of the metrology community. The CIPM members said that it was clear from the visits and presentations that the BIPM departments are beginning to embrace and exploit new opportunities in digital transformation. Prof. Ullrich echoed this theme and commented that his participation in the joint BIPM and CODATA Webinar on “Developments Towards Interoperable Metrology” on 22 June and his engagement with staff had shown that the BIPM is very active in adopting the digital transformation and dramatic changes to embrace digitalization are already underway; changes which the CIPM highly appreciated. He suggested that the CIPM should have more interaction with staff to get their perspective on issues such as strategy for the following 5 to 10 years.

The Director thanked the CIPM and said that the staff had appreciated the opportunity to engage with them.

Prof. Rietveld asked about the guidelines issued by the CIPM [bureau] in March 2022 on the situation in Ukraine. In particular, he asked the Consultative Committee Presidents to share any experiences of how the situation had affected their work and how they had solved the issues. He noted that the CCEM had been able to resolve issues that had arisen by using the guidelines. Dr Park said that the statement had allowed the CCQM to mitigate any difficulties among attendees at its meetings. Dr Rastello said the CCPR had experienced difficulties in gaining approval for a Key Comparison protocol. The Chair of the CCPR Working Group on Key Comparisons (CCPR-WG-KC) and the Executive Secretary of the CCPR had collaborated to find a solution. Dr Laiz commented that the CCAUV had had an issue with a comparison report, which it had resolved. Dr Sené said that the CCRI had found the guidance clear and thanked the CIPM for setting such clear parameters. The President said that the CIPM [bureau] will continue to review the situation and will keep the guidance up to date.

After a closed session, the President said that the CIPM had unanimously decided to re-nominate Dr Milton as BIPM Director and to renew his appointment for a further term of five years from 1 January 2023. The CIPM adopted the following decision.

**Decision CIPM/111-12** The CIPM unanimously decided to re-nominate Dr Martin Milton as BIPM Director and to renew his appointment for a further term from 1 January 2023. The CIPM President and CIPM Secretary were tasked to conclude the terms and conditions of the contract with Dr Milton with special emphasis on the modernization of the organization and the goals for the 150th anniversary of the Metre Convention..

The President thanked the four CIPM members who are not seeking re-election (Dr Castelazo, Dr Liew, Dr Sené and Dr Steele) for their contributions and inputs over the years and hoped that he will see them at the 27th CGPM.

He also thanked Mr Henson, who is retiring in early 2023, for his work over the last 13 years, in both the CIPM and the regions.

#### 14. DATES FOR FUTURE CIPM MEETINGS

Session I of the 112th meeting will be in Week 12 of 2023 (20-24 March 2023). The CIPM bureau will meet on 20 March and the CIPM will meet on 21-23 March.

The President thanked the Director, the BIPM staff and the CIPM for their work during the meeting.