

# **International Committee for Weights and Measures**

Proceedings of Session I  
of the 114th meeting  
(18-19 March 2025)

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# MEMBERS OF THE INTERNATIONAL COMMITTEE FOR WEIGHTS AND MEASURES

as of 18 March 2025

## President

W. Louw, South Africa.

## Secretary

T. Usuda, Japan.

## Members

V.G. Achanta, India.

D. del Campo Maldonado, Spain.

V. Coleman, Australia.

C. Denz, Germany.

N. Dimarcq, France.

H.A. Frøystein, Norway.

J.-T. Janssen, United Kingdom.

H. Laiz, Argentina.

G. Macdonald, Canada.

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

S.-R. Park, Republic of Korea.

J. Qu, China.

M.L. Rastello, Italy.

P. Richard, Switzerland. *CIPM Vice-President.*

G. Rietveld, the Netherlands.

G.P. Ripper, Brazil.

## BIPM Director

M.J.T. Milton

## 1. Opening of the session and quorum

The International Committee for Weights and Measures (CIPM) held Session I of its 114th meeting on Tuesday 18 March to Wednesday 19 March 2025 as a hybrid meeting.

### Participants:

V.G. Achanta (online), V. Coleman, D. del Campo Maldonado, C. Denz, N. Dimarcq, H.A. Frøystein, J.T. Janssen, H. Laiz (online), W. Louw, G. Macdonald, M. Milton (Director of the BIPM), J. Olthoff, S.-R. Park, J. Qu, M.L. Rastello, P. Richard, G. Rietveld, G. Ripper and T. Usuda.

### Also attending the meeting were:

C. Fellag Ariouet (Personal Assistant to the Director and Head of the Executive and Meetings Office), C. Planche (Web and Translation) and R. Sitton (Publications).

### The following were in attendance for parts of the meeting:

A. Cypionka (Director of the International Liaison and Communication Department), V. Gressier (Director of the Ionizing Radiation Department), G. Panfilo (Executive Secretary of the CCL), A. Rohrer (Legal Adviser), M. Stock (Director of Physical Metrology Department), P. Tavella (Director of the Time Department), R. Wielgosz (Director of the Chemistry Department).

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

## 2. Approval of the agenda and the report of Session III of the 113th meeting

The Secretary noted that CIPM members had been invited to visit the Chemistry, Physical Metrology and Ionizing Radiation laboratories on Thursday 20 March. Any members that were not planning to attend these sessions, but who had questions for the departments, were asked to leave their questions with the Secretary.

The CIPM approved the agenda and accepted the report of Session III of its 113th meeting as a true record.

### Decision CIPM/114-01

The CIPM accepted the minutes of Session III of the 113th meeting of the CIPM as a true record.

## 3. Secretary's report

The Secretary said that the report of the bureau's activities and meetings is available on the CIPM webpage. The bureau had met on 18 October 2024 to confirm the decisions of Session III of the 113th meeting of the CIPM. Subsequently, the CIPM had agreed two decisions by correspondence: decision CIPM/113-30 relating to observership of the Consultative Committee for Thermometry (CCT) was taken on 18 November 2024 and decision

CIPM/114-02 concerning the continuation of work on modernizing the governance of the organization was taken on 16 February 2025.

**Decision CIPM/114-02**

The CIPM noted the decision taken by correspondence on 16 February 2025:

On recommendation of the CIPM Sub-Committee on Governance concerning the continuation of the work on modernizing the governance of the organization, the CIPM unanimously agreed to follow Option 3: *By-Laws replaced by CGPM decisions followed by the update of the Compendium*.

The bureau held an online meeting on 18 February 2025 to prepare for Session I of the 114th meeting of the CIPM, to discuss plans for the 150th anniversary and to receive an update on the recruitment of the next Director. The bureau met again on 17 March 2025 to finalize the agenda for the CIPM meeting.

## 4. President's report

The President reflected on global events since 2018 including the Covid 19 pandemic and the changing global situation. He commented that during this period the CIPM has continued to focus on metrology and the international measurement system. He noted that the role of the BIPM will become more important in terms of ensuring independent comparable measurements if trade barriers are introduced by countries around the world.

The President reminded the CIPM members that they are elected as independent individuals to represent all 64 Member States. They should continue to maintain a neutral position regarding the geopolitical landscape.

## 5. Report from the CIPM Sub-Committee on Finance (FSC)

P. Richard, Chair of the FSC, said that it had not met since the last session of the CIPM in October 2024. The Chair had met with the BIPM Director and D. Spelzini, the Head of the Finance Office, for regular updates, the last of which was on 6 March 2025. This update included a review of the first draft financial results for 2024. The results showed a surplus of around 700 000 euros due to good financial management and savings in the personnel budget. The finalized accounts will be available in late May 2025 and will be available for approval by the CIPM in June.

P. Richard recalled that the budget for 2025 was approved by Decision CIPM/113-24. The budget for 2025 is tight and a surplus is not expected because of the costs of the events to celebrate the 150th anniversary.

Further information on the BIPM financial performance will be presented by the Director in §11.

## 6. Report from the Pension Fund Advisory Board (PFAB)

G. Macdonald, the Chair of the PFAB, recalled Decision CIPM/113-04 (2024) and noted that pursuant to this decision, the BIPM has engaged Mercer to conduct an Asset Liability Management (ALM) study.

The PFAB held its 17th and 18th meetings on 10 December 2024 and 4 March 2025, where Mercer was invited to present its proposals for an investment strategy for the BIPM Pension and Provident Fund. The PFAB had concluded that designing a portfolio for the assets of the Pension Fund will require: setting a target performance rate; setting a ratio for investing in defensive versus growth assets; knowing which type of asset classes represent the best place to invest the funds; and understanding the investment risk.

G. Macdonald presented Mercer's proposals for the investment strategy. Mercer proposed four candidate asset allocation options to achieve a 5 % to 5.5 % gross return target. It provided simulations of the expected performance for the pension fund in the short-, medium- and long-term, as well as the average and median return and volatility rates. Mercer recommended that BIPM choose between asset allocation options 3 and 4 from the four that were presented. Allocation option 3 was considered by Mercer to provide the best 'risk adjusted return' over time.

The PFAB unanimously recommended the following, taking into consideration the expert opinion of Mercer:

- The conclusions and recommendations of the Asset Allocation Study, annexed to the PFAB report, should be endorsed as a valid expert analysis.
- The pension fund investments should target a performance rate of between 5 % and 5.5 % gross returns.
- The pension fund investment portfolio be diversified in terms of asset classes.
- There should be a  $\pm 5$  % leeway around the growth versus defensive asset ratio.

A majority of PFAB members recommended that the long-term strategic allocation of the pension fund assets target a 50:50 growth versus defensive assets ratio, following allocation option 2. The Chair of the PFAB and the BIPM Director had a preference for the allocation option 3 which had been recommended by Mercer for a 60:40 growth/defensive asset ratio. A draft decision was presented summarizing the recommendations of the PFAB.

G. Macdonald concluded by saying that the PFAB will implement reporting and monitoring measures to ensure that the investment strategy serves the needs of the pension fund as follows: an annual report on asset allocations, cash-flows and the performance of the plan will be presented (macroeconomic overview) at the annual meetings of the PFAB; quarterly reports on the performance of the assets will be given to the BIPM Director and Head of the Finance Office; and periodic training sessions will be offered for the PFAB on fund management or investment topics.

The President thanked G. Macdonald and invited questions. The CIPM discussed allocation options 2 and 3, noting that the majority of the PFAB members had favoured option 2, which was contrary to the advice given by Mercer. The text of a draft decision was discussed, which was based on the PFAB recommendation. The CIPM agreed the following decision, with fifteen members in favour, three abstentions and one vote against.

**Decision CIPM/114-03**

The CIPM:

- welcomed the report from the BIPM Pension Fund Advisory Board (PFAB) of 7 March 2025 that presented proposals for an investment policy for the assets of the BIPM Pension and Provident Fund (the Pension Fund);
- endorsed the conclusions and recommendations of the Asset Allocation Study annexed to the PFAB report as a valid expert analysis;
- adopted the following guidelines for the implementation of the investment policy relating to the assets of the Pension Fund:
  - (i) the investment of the assets of the Pension Fund should target a performance rate of between 5 % and 5.5 % gross returns;
  - (ii) the Pension Fund investment portfolio should include a high level of diversification in terms of types of asset classes;
  - (iii) the long-term strategic allocation of the assets of the Pension Fund should target a growth versus defensive assets ratio of 50:50;
  - (iv) a margin of  $\pm 5$  % may be applied when deciding on re-balancing actions.

G. Macdonald said that she was stepping down as Chair of the PFAB due to other commitments within the CIPM. H.A. Frøystein volunteered to take on the role. There were no other candidates and following a show of hands, H.A. Frøystein was appointed unanimously.

**Decision CIPM/114-04**

The CIPM expressed its appreciation for the work carried out by G. Macdonald, the outgoing Chair of the BIPM Pension Fund Advisory Board (PFAB), and appointed H.A. Frøystein as PFAB Chair.

## 7. Final report and recommendation on recruitment of the Director

This session was held in camera.

**Decision CIPM/114-05**

The CIPM approved the proposal of the Selection Committee for the final candidate for the next Director with 18 votes in favour and 1 abstention. The CIPM President and Secretary, and the Head of the BIPM Human Resources Service were mandated to proceed with the necessary steps for concluding the contract with the approved candidate.

## 8. Report from the CIPM Sub-Committee on Governance (SC-G)

P. Richard, Chair of the SC-G, presented the latest situation regarding progress with the By-Laws of the BIPM and the Rules of Procedure (RoP) of the CGPM. He recalled that Member States had been consulted on the draft By-Laws in 2024 and four had significant reservations. Their reservations centred on the possible impact of the By-Laws on the Metre Convention and repetition of information. The SC-G analysed the situation and proposed three possible options for the way forward. On recommendation of the SC-G, the CIPM unanimously approved to continue the governance modernization work following their Option 3: *The By-Laws are replaced by CGPM Decisions followed by the update of the Compendium* (See Decision CIPM/114-02 and CIPM documents CIPM/2025-I-08-a and CIPM/2025-I-08-b). The RoP of the CGPM and the Compendium will become the central governance instruments. (Option 1 proposed minor modification of the draft By-Laws and Option 2 proposed major modification of the draft By-Laws).

A revised draft of the RoP of the CGPM was sent to the members of the SC-G for a second consultation in February 2025, with 28 March as the deadline for comments. This draft was produced according to Option 3 and all elements related to the By-Laws were removed. The SC-G will collate the comments and produce a new draft, with input from the external legal adviser, in April 2025. The SC-G will prepare a version of the RoP for consultation with the CIPM in May 2025 and then the Member States in July-September 2025. The RoP of the CGPM will include the general criteria for the election of the CIPM according to the Metre Convention. The SC-G will collaborate with the Chair of the Committee for CIPM Election (CEC) to develop the details. He noted that the [\*Compendium of main rules and practices applicable to the BIPM\*](#) had previously been submitted to the 25th meeting of the CGPM (2014) for information and the 2018 edition is available on the BIPM website.

P. Richard said that the SC-G has collated the elements of the By-Laws that will be potentially integrated into decisions for the CGPM in 2026. He added that the timetable for the consultation process is tight and if the process of consulting Member States goes beyond September 2025, there may not be sufficient time to prepare for the CGPM in 2026. The SC-G will prepare the decisions for the CGPM in consultation with the BIPM Legal Adviser. He asked the CIPM Members from Member States that had expressed reservations about the By-Laws, and the BIPM, to inform the relevant authorities in those countries about the details of Option 3. He confirmed that the SC-G had engaged informally with three of the four states bilaterally to discuss their concerns. However, they have not yet been informed about Option 3. The President suggested that a possible message to the Member States is that the CIPM has decided not to continue with the development of the By-Laws of the BIPM following a discussion of the issues. They will be informed of the approach suggested in Option 3, whereby governance procedures that are not rigorously or formally documented will be addressed in individual resolutions and decisions that will be presented at the CGPM for approval. This approach will allow flexibility to change individual decisions, if the need arises, rather than having to revise the By-Laws document. P. Richard added that the decision to recommend Option 3 had been taken before current geopolitical events. It was suggested that the four Member States should not only be informed that the CIPM has decided unanimously to pursue Option 3 (Decision CIPM/114-02) they should also be notified that the RoP of the CGPM need to be adopted.



The Director suggested that the four Member States should be notified of the decision bilaterally and asked if they have any proposals for the next steps, which could then be communicated to the CIPM. P. Richard noted the proposal but reiterated that the timetable for the consultation is tight. He added that consultation with the four Member States that had reservations is a good idea but could be considered as being unfair to the majority that had approved the By-Laws. The President reminded the CIPM that they are elected at the CGPM to represent all Member States.

One CIPM member expressed the opinion of one of the Member States that had questioned the draft By-Laws. They expressed the view that decisions had been taken that reached beyond the scope of the Metre Convention. The CIPM agreed with the Director that a bilateral discussion should take place and noted that Option 3 may not address their reservations. Having a bilateral pre-discussion before a formal document is sent out by the CIPM may help resolve the situation. However, this course of action would have to be taken within the limited time available. The goal of this course of action is to allow the four states with reservations to seek an acceptable solution. It was suggested that the four States may remain sceptical of Option 3 if the process has been changed but the content remains the same. It should be made clear that Option 3 is not simply another way of presenting the content of the By-Laws, which are considered to overlap with the Metre Convention. This message must be made clear to the States concerned. It was suggested that it may be prudent to consult all Member States as a matter of courtesy, rather than simply trying to resolve the issues raised by a minority.

P. Richard quoted a specific issue, noting that the opinion of the Administrative Tribunal of the International Labour Organization is that the election of the CIPM is “irregular” and that problems such as this should be solved. The President agreed that the legal opinion is that the process for election of the CIPM differs from that described in the Metre Convention and this should be resolved.

P. Richard commented that the RoP of the CGPM and the By-Laws are completely separate documents with different content and status and this should be made clear to the four Member States that had expressed reservations.

The Director gave two examples of previous successful consultation exercises with Member State representatives: the discussions in advance of the revision of the SI in 2018 and those for reaching consensus on the work programme, the associated budget and dotation before each meeting of the CGPM. He added that there is no substitute for meeting face-to-face with the decision makers in Member States and responding to their views. This approach could be used to resolve the outstanding difficulties with some States. The President suggested that a letter should be sent to Member States to give them an update on the current situation regarding Option 3.

P. Richard presented the steps that should be taken before the 28th meeting of the CGPM in 2026. The SC-G will update the CIPM election process and criteria, in collaboration with the CEC. In this respect, the SC-G has proposed that all outgoing CIPM members, including those that have been provisionally elected, and the new candidates, shall prepare their application files in good time. Although only nine members will be formally elected or re-elected, every CIPM member or candidate shall revise their application file well in advance of the election. This will improve the transparency of the process, which had been requested by the Member States in 2011 and 2014.

P. Richard said that the CGPM should be made aware of the importance of the Compendium as an internal governance document, if Option 3 is pursued, by way of a decision. A CGPM decision will be required for the CGPM to take note of three governance documents: the Rules of Procedure of the CIPM, the Code of Conduct of the CIPM and the Regulation governing the competencies of the Director. The first two documents should be updated according to the RoP of the CGPM.

P. Richard summarized by saying that the SC-G will prepare a letter to Member States to inform them of its current position on these issues and the next steps. The President commented that since the CIPM decided to follow Option 3, the letter should be sent in the name of the CIPM. The SC-G will continue to work on the RoP of the CGPM and the CIPM election process. The CIPM will be informed of the outcomes in the near future and will be asked for comments. He asked the CIPM to set a deadline for their comments, noting that it should be as soon as possible to maximize the time for the consultation with Member States.

The CIPM discussed when the potential new procedure for election of the CIPM would be implemented during the meeting of the CGPM. This issue was discussed further in §16.

## 9. CIPM Strategy 2030+

The President recalled that development of the CIPM Strategy 2030+ had started five years ago. He said that he would review the document to ensure that its content remains current and may adjust wording that is considered to be in conflict with current geopolitical issues, such as climate change. The President commented on how much detail from the CCs should be included in the strategy. Currently it includes one paragraph from each CC in the Annex.

D. del Campo Maldonado reminded the CIPM that environmental monitoring and climate observations are not only components of climate science, they are also important to other areas such as agriculture. Metrology is an important aspect of both environmental monitoring and climate observations. The CIPM noted that it should decide whether to change its strategy for the next 10-30 years based on the needs of the metrology community.

It was suggested that although there is no need for a major change to the strategy, it is based on the premise that every reader believes there is a need for the BIPM to exist. The reality in the current geopolitical situation is that the document should now focus on the vital role that the BIPM and metrology plays and why it should continue to exist. The document is intended to be read by Member State representatives and the opening section should highlight the importance of the BIPM. For example, it could be stressed that without the BIPM, “everything stops working”. Many global activities depend on the work of the BIPM in order to function. The introduction could also emphasize why the BIPM has existed successfully for 150 years and why it should continue to do so, before introducing the future strategy. If the CIPM adopted this style of reporting, it would give Member State representatives the information they need to advocate for the future of the BIPM and metrology by highlighting its essential and pivotal role in the operation of many critical global activities, for example metrology has an essential role in trade around the world.

The CIPM returned to the discussion on whether the CC summaries of their research challenges should be retained as an Annex to the Strategy document. It was agreed that if the Annex were removed, there would be some important elements in the CC research challenges that would need to be included in the main text. The Director commented that although the

Annex could be removed, it provides a comprehensive listing of the breadth of metrology, for example the CC summaries in the Annex cover subjects as diverse as GNSS, dose calculations, food and agriculture. This could be used to highlight the importance of metrology and the BIPM as described in the previous discussions. It also reinforces the importance of the work of the CCs and provides a resource for NMI Directors who can see exactly where their staff are engaged with the work of the BIPM.

The President summarized the discussions, noting that he will add a paragraph at the start of the strategy document to explain why the BIPM is important and should exist. In addition, he will draft a synopsis of the information in the Annex for inclusion in the main body of the text, possibly in the section on “The evolving role of the CIPM and the CCs...”. He asked C. Denz and D. del Campo Maldonado to send him a concise paragraph on the work of the Forum on Metrology and Digitalization (FORUM-MD) and CIPM Sectorial Task Group on Climate and Environment (CIPM-STG-CENV) for inclusion in this summary.

## 10. Plans for the 150th anniversary

The Director said that an event will be held at the United Nations Educational, Scientific and Cultural Organization (UNESCO) headquarters in Paris on 20 May to celebrate the achievements of 150 years of the BIPM. The speakers at the event will include William D. Phillips, Nathalie von Siemens, Yuning Duan, Willie E. May, Pascale Defraigne and Ken Alder. As of 18 March, 523 people had registered to attend the event. Of these registrations, 62 % are from the NMIs, DIs and Member State representatives. Further registrations are expected when UNESCO starts to promote the event.

An anniversary conference will be held at the Palais des Congrès in Versailles on 21-22 May. The conference will include a full-day session devoted to “Metrology for future science”. There will be five themes at the conference, with a round-table discussion for each theme. One of the sessions at the conference will be dedicated to the poster competition for the 150th anniversary, which was suggested by the BIPM department directors. The competition has been a success; as of 18 March, there had been 391 submissions, with 379 of the posters being accepted. The posters have been submitted under nine categories, with a different CIPM member overseeing each category. The posters are available from a dedicated website. The BIPM will continue to accept poster submissions throughout 2025.

The Director recalled that the 150th anniversary World Metrology Day poster for 2025 had been designed by the BIPM. The poster and the joint message from the BIPM and BIML Directors are available on the World Metrology Day website.

The Director said that there will be an exhibition of photographs by Robert Doisneau and Raphaël Dallaporta to celebrate the 150th anniversary at the Town Hall in Sèvres and it will be inaugurated by Grégoire de la Roncière, Mayor of Sèvres on 3 April. Also, an exhibition will be held in the media library, presenting the history of the BIPM, from 5-26 April. A booklet, edited by the Mairie de Sèvres, on the history of the BIPM will be available in September 2025.

An event in the series “*Les Clés pour comprendre*” will be held by the *Académie des sciences* in Paris on 12 June 2025. The event will celebrate the 150th anniversary of the Metre Convention at the *Institut de France* with a two-hour conference intended for a general

audience. This outreach event will be in French and will highlight the role of the BIPM and the importance of metrology for science and society.

The Director said that a 240 page anniversary book "*Le Bureau International des Poids et Mesures: 150 years of measures for the world*" will be published and delivered to the BIPM on 28 April 2025. It will be available in bookshops from 6 May. The book was written by C. Fellag Ariouet and includes a portfolio of 250 images. He thanked her for her work on the project.

The BIPM has worked with the *Manufacture de Sèvres* to produce a limited edition of seventeen Sèvres porcelain commemorative vases. Each vase will be decorated to recall the design of the vases commissioned in 1872 by the President of the French Republic for the members of the International Metre Commission. The Anniversary logo will appear on one side and the SI logo on the other. The neck of each vase will bear the phrase "*Convention du Mètre*", repeated twice. Eight of the vases had been sold at the time of the meeting.

The Director concluded by saying that the BIPM has commissioned an anniversary gift medal that will be given to everyone that attends the events. He recalled that there will be a VIP reception and garden party at the BIPM headquarters on 19 May, to which all CIPM members will be invited. A celebratory event for staff will be held at the BIPM headquarters on 23 May. The Commission for Social Affairs (CAS) is organizing this event.

## 11. Report by the BIPM Director

The Director started his report with an update on staff matters. He said that two staff had resigned since the last Session of the CIPM in October 2024. J. Miles left the BIPM on 1 March after 28 years to take up a new position at the BIML. F. Rojas Ceballos, the BIPM Legal Adviser, had resigned and will continue at UNESCO after a period on secondment to the organization. He said that he has appointed A. Rohrer as the Legal Adviser. The next Executive Secretary of the Joint Committee of the Regional Metrology Organizations and the BIPM (JCRB) will be K. Yamazawa from NMIJ (Japan). There are currently three recruitments under way in digital services, time and chemistry.

The Director informed the CIPM that the *Notification 2025* has been sent to Member States and Associates. It uses the UN 2025-2027 scale. He recalled that this is the first time that a new process has been used whereby the scale is adopted as soon as it becomes available in draft form.

He said that Panama is close to becoming a Member State and is hoping to complete the process before 20 May 2025. Armenia has completed the formalities to become an Associate and only has to pay its first year's subscription to complete the process. He said that there may be 65 Member States and 38 Associates at the time of the 150th anniversary and he noted that eleven States have acceded to the Metre Convention during his term as Director.

The Director recalled that the BIPM has changed its policy on copyright to use the Creative Commons 4.0 International licence. Further information is available from the Legal Adviser.

Building work at the BIPM headquarters since the last meeting of the CIPM has included the restoration of the front wall of the Observatoire to the condition when it was constructed in the late 19th century. Additionally, remedial works have been carried out by the Domaine

National de Saint-Cloud to stabilize the embankment on the path leading to the BIPM entrance.

The Director presented the draft accounts for 2024. The results against the budget show that staff costs were below the budgeted figure due to delayed recruitments. The BIPM spent less on electricity in 2024 than expected due to the estimated cost being set at the higher end of expectations. Additionally, “other income” increased in 2024, mainly due to new banking arrangements, which earned interest of 137 000 euros.

The number of complementary staff is projected to increase to ten full-time equivalent staff in 2025, which is back to the level before the global pandemic. This figure is made up of 31 individual staff.

The Director presented the latest payment situation which is progressing well. Late payments have been balanced by a number of early payments. At the end of 2024, nine Member States had already paid their contributions for 2025. In addition, the BIPM has been in contact with all States in arrears with their payments.

The President asked if the plans for the Pension Fund discussed in §6 will have any effect on the budget. The incoming Chair of the PFAB confirmed that there will be no effect.

The Director reported that he had attended the Conference of Parties (COP) of the UNFCCC in Baku, Azerbaijan, (11-15 November 2024) and had hosted the OECD/PTB symposium at the BIPM Headquarters (6 December). He had also been the President of the Congrès International de Métrologie (CIM) held in Lyon (11-14 March 2025), which had been very successful.

## 12. Reports from the Consultative Committees

### Consultative Committee for Electricity and Magnetism (CCEM)

G. Rietveld, the CCEM President, reported that it had held its 34th meeting on 6-7 March 2025. The meeting had 52 on-site attendees at the BIPM headquarters and 35 on-line. The majority of the on-line attendees were additional experts from laboratories.

The CCEM held a workshop on “Metrology for future electricity grids” at the BIPM headquarters on 5 March. The opening and closing presentations were given by leading speakers from industry, and APMP and EURAMET gave regional vision presentations. There were a further five presentations from NMIs and academia.

G. Rietveld said that highlights of the 34th meeting included reports on the progress with Task Groups (TGs) that are in liaison with other CCs. The TG on small current measurements with the Consultative Committee for Ionizing Radiation (CCRI) is now closed and there is an ongoing TG with the Consultative Committee for Amount of Substance: Metrology in Chemistry and Biology (CCQM) in the area of batteries. Reports were received from the three regular CCEM Working Groups and the Task Groups on graphene, digitalization and stakeholders. An update was given on the BIPM work programme, focusing on the work in the electrical laboratories, including the outlook for 2028-2031. In addition, the CCEM strategy was reviewed. The CCEM appointed new Chairs for all three of its Working Groups during the meeting.

The CCEM has adopted the use of a “champion” to lead preparatory discussions for comparisons over the last few years. This has resulted in comparisons starting up more smoothly and greater clarity in the way comparisons are organized. In the running of the comparisons, there is more sharing of coordination work and the increased use of “star-like” comparison schemes has speeded up the whole comparison process.

G. Rietveld recalled that the CCEM has adopted a new service category in DC voltage. This is in response to the increase in the number of electric vehicle charging stations world-wide and the need for traceability in the associated metering.

The CCEM has carried out an exercise to identify its stakeholders following a realization in the development of its strategy that it does not have an international organization that naturally links with its activities, for example the International Commission on Illumination (CIE) and the Consultative Committee for Photometry and Radiometry (CCPR). A graphic was presented that showed the CCEM stakeholders as a series of three concentric rings with the organizations with which there is least interaction in the outer ring. The level of engagement with the CCEM was identified for each stakeholder group and discussions took place on how to enhance the engagement. The CCEM will continue with its programme of webinars to provide training within the NMI community and to the wider stakeholder community. Further discussions on boosting stakeholder engagement will be included in the revision of the CCEM strategy.

G. Rietveld said that the CCEM had been approached by the NCSLI community with a question related to traceability in the revised SI. Following the revision, anyone can, in principle, realize direct traceability to the SI. In terms of quantum voltage standards, 10-12 standards have been available for a long time for industry in North America. The NCSLI asked what the experts think is required to ensure that industrial users reliably obtain SI-traceable values that should be acceptable to accreditors for quantum standards such as JVS and QHR? In addition it asked how should these requirements be documented. The essence of the CCEM discussion was that industry should follow the same requirements as NMIs: quality assurance (QA) documentation, proven expertise and comparisons.

G. Rietveld mentioned a letter had been sent to the BIPM Director by the Italian government regarding the commemorations planned for the 200th anniversary of the death of Alessandro Volta in 2027. The plans include a suggestion to rename the unit of voltage from the “volt” to the “volta”. The CCEM discussed the proposal and noted that it was an interesting idea that would be a way of gaining publicity for the electrical metrology community. However, they agreed that the costs and benefits would have to be assessed and further noted that some units already have national names. There is no proposal from the CCEM to pursue the renaming of the volt. The Director will reply to the Senator that wrote the letter to inform him that the BIPM will commemorate the anniversary at the next meeting of the CCEM and at a workshop in Como (Italy), organized by INRIM, in April 2025. This workshop is devoted to Volta and other quantum themes.

He concluded by saying that the next meeting of the CCEM will be in March/April 2027. The meeting will include a one-day workshop to celebrate the 100th anniversary of the Consultative Committee for Electricity (CCE)/CCEM.

The President thanked G. Rietveld and invited questions.

J. Olthoff followed up the presentation on the NCSLI question and asked if the CCEM plans to have any further discussions on the subject, specifically in response to questions being asked by

accreditation bodies in the US such as how often comparisons need to be carried out and how to prove a level of expertise. G. Rietveld replied that in terms of requirements, the answer depends on the uncertainty level. The best accuracy and lowest uncertainty requires a different level of proof that calibrations that are not at the leading edge. The need for comparisons also depends on the requirements, so the CCEM drafted a general answer rather than giving specific advice. The electrical NMI community greatly benefits from the expertise of the BIPM for performing comparisons; a crucial part of the BIPM programme is to facilitate comparisons of quantum standards. When the BIPM visits an NMI to carry out a comparison in the electrical area it almost always finds aspects where there is room for improvement with Josephson and quantum Hall standards, even when all of the quality documentation has been followed. These BIPM visits ensure the standards at Member States' NMIs are performing at the highest level. He added that NMIs generally carry out electrical comparisons at an interval of 15 to 20 years. J. Olthoff agreed that this is a complex discussion with implications for the BIPM's future work programmes as other quantum standards start to develop, for example in temperature and pressure. The same consideration should be given to answering the NCSLI question for these emerging quantum standards, rather than just for the electrical community. The role of the CCs and industrial partners should be considered in the future discussions. G. Macdonald added that there is no simple answer and suggested that the role of the CCs could be clarified by publishing a paper on the complexities that should be considered when making these evaluations. The creation of a stakeholder working group or task group was suggested, particularly as it will allow the expertise from the CCs to be translated to meet the needs of stakeholders. The Director added that the messages from the NMIs on this topic are different and this could be a cause of confusion. J. Olthoff said that this reinforces the need for the NMIs to come together to talk about how to obtain SI-traceable values that should be acceptable to accreditors. Consistency among the NMIs would go a long way towards addressing the issue.

G. Rietveld confirmed that resolving the issue of how industrial users obtain SI-traceable values that are acceptable to accreditors is part of the role of the international metrology community and CC experts in supporting industry. He added that the NCSLI does have guidance documents that have not been updated for around 20 years. The metrology community could cooperate with the NCSLI to update its documents to include advice on obtaining SI-traceable values that are acceptable to accreditors.

The Director recalled that the issue initially arose as a topic in the electricity field in relation to Josephson standards, when a request for guidance was received 20 years ago. He commented that the need to obtain SI-traceable values that are acceptable to accreditors by the electrical community is of less importance now due to the excellent uncertainty of its quantum standards, which do not impact regular users of AC and DC voltages. However, there is an emerging community of potential users in primary thermometry. He suggested that the discussion is not just for the CCEM, which is in a good position, but for the CIPM to deal with similar issues that will be faced by other CCs. The experience of the CCEM can be used as a starting point by the other CCs. G. Rietveld suggested that a group of experts could be brought together to draft a discussion paper to highlight the potential problem of how to obtain SI-traceable values that are acceptable to accreditors as quantum standards become more widespread. J. Olthoff added that this issue is part of the "quantum for metrology" area and therefore comes under the responsibility of the CIPM.

## Consultative Committee for Time and Frequency (CCTF)

N. Dimarcq, the CCTF President, said that its 24th meeting will be held in two sessions, with session one held online in November 2024 and the second session planned for 18-19 September 2025. The second session will be held in-person at the BIPM headquarters to prepare for the 28th meeting of the CGPM (2026). He recalled that the CCTF is planning three draft resolutions for the CGPM: an updated redefinition roadmap; continuous UTC; and lunar reference time.

N. Dimarcq said that the CCTF is preparing an updated roadmap and schedule towards the redefinition of the second, with a baseline for the redefinition of 2030, ready for its meeting in September 2025. He presented the ensemble of documents and tables that are under development to support the timetable. These included Table 1 on the status of optical frequency standards (OFS) and Table 1b on OFS achievements with respect to criteria targets. Table 1b was used to draft Table 1c categorization of the species/transitions with respect to the OFS progress and maturity with a classification in three categories for a redefinition in 2030:

- most mature (Possible choice for Option 1<sup>1</sup> or in the ensemble for Option 2<sup>2</sup>)
- intermediate (Possible choice only in the ensemble for Option 2)
- less mature (Not selected for a redefinition in 2030).

Table 2 gives the draft possibilities for the new definition (with a reduced ensemble for Option 2), as presented at the CCTF session in November 2024. It shows that there are three possible single species for Option 1 (two lattice clocks and one ion clock). For Option 2 the table includes all the species and transitions that are secondary realizations of the second as well as <sup>115</sup>In<sup>+</sup>, which is expected to become a secondary realization in 2025, and <sup>133</sup>Cs, which is a primary realization. A decision will be taken whether to retain caesium as a secondary realization. Table 2 includes four categories that are being used to evaluate the level of fulfilment of the selection criteria. The CCTF will continue to work on shortening the number of candidate species for the ensemble as proposed for Option 2.

In parallel to this work, the CCL-CCTF Working Group on Frequency Standards (CCL-CCTF-WGFS) is updating the list of recommended values of standard frequencies (secondary representations of the second (SRS) and realization of the metre).

N. Dimarcq presented the *Diagram of fulfilment level of mandatory criteria*, which was last updated at the CCTF meeting in November 2024. He noted that there are three of the mandatory criteria where the fulfilment level remains unsatisfactory. These are I.1 *the OFS accuracy budgets* ( $<2 \times 10^{-18}$ ), I.2 *Validation of OFS accuracy budgets – Frequency ratios* ( $<5 \times 10^{-18}$ ), and I.4 *Regular contributions of OFS to TAI* (five OFS contributing at  $2 \times 10^{-16}$ ). He said that the NMIs concerned need to make a commitment to improve the situation. In particular there is an urgent need for the NMIs that operate OFSs that can contribute to TAI to prioritize TAI calibrations in their short-term strategies: there has been a decrease in the contribution of OFSs to TAI since 2024.

N. Dimarcq was asked how the CCTF will choose between Option 1 and Option 2 for use in the redefinition of the second. He replied that the pros and cons of each option are documented and there is currently no consensus on which option to select. He added that six months ago,

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<sup>1</sup> Option 1 is for a single transition to be used in the redefinition of the second.

<sup>2</sup> Option 2 is for an ensemble of species to be used in the redefinition of the second.



there had been no decision on the species to include in the ensemble for Option 2, whereas now there is a good range. The CCTF has a plan for how to make the choice but there is currently no overall agreement.

C. Denz commented that the PTB operates an optical clock but has the requirement that it should be allowed to operate for a certain period without interruption before it will be allowed to contribute to TAI. The situation may be that there is not a lack of OFSs, but rather that it is a decision for individual NMIs as to when such devices can start to contribute.

N. Dimarcq agreed that this situation occurs in other NMIs but commented that in 2022-2023 there was an increase in contributions from OFSs and there was optimism in the CCTF that this growth would continue. However, this trend has stopped over the last 12 months and there has been a decrease in contributions from OFSs. The Director acknowledged the decline in contributions from optical clocks, noting that there have been four in 2024, and asked how many optical contributions to TAI are needed to meet the mandatory criterion I.4 *Regular contributions of OFS to TAI*. The TF community should be clear that criterion I.4 must be met at a level that should be defined by July 2025 to allow the redefinition of the second to proceed according to the timetable. Option 2 is a different issue as this depends on agreeing what defines an ensemble. N. Dimarcq replied that the intention of the CCTF is to continue to work towards a redefinition in 2030. If the mandatory criteria are not met in time for presentation at the 28th meeting of the CGPM in 2026, the redefinition would have to be postponed until 2034. The CCTF is maintaining pressure on the whole TF community to ensure that the criteria are met so that this postponement does not happen.

N. Dimarcq presented progress towards continuous UTC and the information that will need to be included in the draft resolution for the CGPM. He noted that the value of the new limit for UTC-UT1 to ensure a continuous UTC over one century will be discussed at the next session of the CCTF in September 2025. There are two options:

- 100 seconds, or 5 minutes, which gives a continuity of about one century.
- 1 hour that is similar to having no limit, which gives a continuity of about one millennium.

The draft resolution will need the implementation date to be defined. Resolution 4 of the 27th CGPM (2022) requested the CIPM to prepare a plan to implement the proposed new maximum value for the difference (UT1-UTC) by or before 2035. The CCTF may have to accelerate the process as it evaluates the probability for a negative leap second before 2035. This is in response to the observation that the rotation of the Earth is getting faster. The BIPM and International Earth Rotation and Reference Systems Service (IERS) will hold a joint workshop in March 2025 to discuss the topic. The workshop will include experts in Earth rotation modelling to evaluate a probability range for a negative leap second. At present there is no global model that takes into account all of the effects on the rotation of the Earth and the predictions are not in agreement.

N. Dimarcq commented that the draft resolution on continuous UTC will include a recommendation that the CGPM should review the situation periodically. The CCTF has recommended that the review be undertaken every 20 years as the continuity will be between 100 and 1 000 years. He added that P. Tavella had attended the International Time and Synchronization Forum in Seville (Spain) in November 2024 and the feedback from industry had been that it wants no time step and no frequency step, thus supporting the drive towards continuous UTC.

N. Dimarcq said that there are two priority areas for the development of Lunar time that need to be presented to the CCTF in September 2025 ready for a draft resolution at the 28th meeting of the CGPM. It needs to provide an analysis of the different possibilities for a unique Lunar reference time and the traceability to UTC of possible realizations. In addition, it must present the proposed Lunar reference time. He emphasized that the BIPM and CCTF have a central role in developing Lunar time, noting that the BIPM has been contacted by various space agencies that have indicated that they expect a draft resolution to be presented at the CGPM. The International Astronomical Union (IAU) recommended that it works with the BIPM to develop Lunar time in its recommendation in 2024 and the International Committee on Global Navigation Satellite Systems (ICG) formed a working group on lunar time and recommended explicitly that it will work with the BIPM and CCTF as the recognized authority for time definition.

He recalled that the Joint ICG-IOAG Multilateral Workshop on Cislunar Positioning, Navigation and Timing (PNT) had been held in Vienna (Austria) in February 2025. The session on time references had been chaired by the BIPM.

N. Dimarcq presented progress with the sharing of resources for capacity building to improve (Inter)National timekeeping. He thanked the CCTF WGs, BIPM Time department and secondees that have contributed to the initiative. These contributors have developed training tools including videos, guidelines and software modules. In addition they have organized online or in-person training events, summer schools and technical exchanges.

He concluded by saying that the second session of the CCTF meeting planned for 18-19 September 2025 will validate the updated CCTF strategy document and the three draft resolutions proposed for the CGPM in 2026.

The President commented that the CIPM should ensure that there is sufficient time to discuss the draft resolutions at its meeting in October 2025 since they will need to be available in January 2026.

T. Usuda said that an optical clock had recently been made available commercially and asked if this would have any impact on the redefinition. N. Dimarcq replied that the development of industrial optical frequency standards is important but they may not be the best in terms of accuracy. However, they could potentially change the situation for criterion I.4.

## **Consultative Committee for Length (CCL)**

V. Coleman, the CCL President, said that it had held its 19th meeting on 10-11 October 2024. The meeting was preceded by a workshop on “Latest developments in the field of length”. Applications for membership of the CCL were received from INTI (Argentina) and RISE (Sweden) and for observership from SCL (Hong Kong, China). These applications had been presented and accepted by the CIPM during Session III of its 113th meeting as Decision CIPM/113-30 (2024). Following the CCL meeting, an application has been received from NPLI (India) to become an observer.

The workshop on “Latest developments in the field of length” was aimed at giving an overview of the current and future activities of the NMIs in the field of length. It included presentation from across the RMOs on topics ranging from semiconductors to large-scale coordinate metrology in support of renewable energy.

V. Coleman recalled that the CCL meeting had discussed its governance and structure, particularly its nine discussion groups, which are often silent for long periods. The activities of these discussion groups will be reviewed between now and the next CCL plenary. The CCL members decided to close CCL-DG11 (lasers) as the discussion points on the use of frequency combs and the operation of comparison CCL-K11 are covered by the CCL-CCTF Working Group on Frequency Standards (CCL-CCTF-WGFS). In addition, CCL-DG6 (coordinate metrology) has been transformed into the CCL Working Group on Coordinate Metrology (CCL-WG-CM) in view of the growing scientific interest in coordinate metrology and how the CCL can support industrial developments in this area.

The CCL faces significant challenges between now and the next plenary meeting in 2027 with the retirement of many of its officials who have made significant and sustained contributions to the CCL during their careers. These retirements include many of the Working Group and Discussion Group chairs, as well as expert members of the CCL Working Group on Strategic Planning (CCL-WG-S) and the and CCL's long standing Rapporteur. V. Coleman noted that this represents a major loss of expertise and simultaneous replacement of these key players will be a challenge. She suggested that the CIPM should explore how to ask NMIs and DIs to support representation at CC meetings and how to organize succession planning for officials.

V. Coleman said that the CCL Working Group on the CIPM MRA (CCL-WG-MRA) will need to consider how to deal with NMIs submitting CMCs for low-level services such as digital callipers and requesting the use of CIPM MRA logo for these services. In addition, CCL DG-3 on angle discussed how to respond to the CCU's definition of angle and it is committed to articulating the approach to practical angle measurement and realization and communicating this to the CCU. The CCL will draft a publication or statement on the practical measurement of angles and the CCU will be contacted for further discussions.

V. Coleman concluded by noting that the next CCL Plenary meeting will be held in 2027, however key CCL WG meetings will be held in the non-plenary years in association with two EURAMET length technical conferences: Macroscale Conference 2025 in Buenos Aires (Argentina) in November in association with INTI and Nanoscale 2026 which will be held in the third quarter at a location to be announced.

The President thanked V. Coleman and invited questions. It was asked why the succession of working group Chairs is a problem. V. Coleman replied that some NMIs are better at suggesting and coaching successors than others. In addition, not all NMIs are able to send more than one person to a CC meeting, so succession planning is not straightforward.

D. del Campo Maldonado asked about the application of Device Under Test (DUT) uncertainty and the CCL's intention to develop guidance for how length CMCs could take this into account that was shown in the presentation. She noted that the CIPM MRA states that the DUT should be taken into account and asked why this guidance is necessary. V. Coleman replied that the advice in the CIPM MRA is not applied universally in the CCs and not in the CCL. For example, when gauge blocks are measured, the DUT uncertainty is not currently taken into account. There are many different CMC claims for different gauge blocks and this issue will become further complicated with growing digitalization. The CCL-WG-MRA Sub-Group on CMCs and the DimVIM (CCL-WG-MRA-sWG-CMC) has been tasked with investigating how to handle DUT uncertainty.

The Director asked for clarification about requests for use of the CIPM MRA logo on low-level services, particularly the direction being taken in such discussions. V. Coleman replied that the

requests to the CCL are for the use of the CIPM MRA logo on low-level calibrations. The CCL is considering how to respond and is concerned because there is no sense in having more CMCs. The Director commented that the BIPM informs NMIs of the policy of the Joint Committee of the Regional Metrology Organizations and the BIPM (JCRB) which is that they cannot use the CIPM MRA logo for services that are considered to be testing or verification. The President agreed that this is an issue, but it should be discussed at the JCRB. H.A. Frøystein added that this question is related to the requirement for traceability from the accreditation community. Laboratories may request an accredited calibration certificate from a self-declared institute that is under the CIPM MRA and this is satisfactory. A problem arises with the provision of traceability of simpler instruments, which are still calibrated, but it is difficult to document this to customers in a way that is accepted by the accreditation body. He agreed that it is not appropriate to have a proliferation of CMCs, but a discussion and common rules are needed.

## 13. Reports from the departments

### Ionizing Radiation

V. Gressier, the Director of the Ionizing Radiation Department, presented its long-term strategy. He started by giving the background as to why a strategy is needed for the Ionizing Radiation Department. He said that it is linked to the 150th anniversary of the BIPM and the 65th anniversary of the CIPM's decision to create the IR Section (now the IR Department) in 2025. The strategy identifies the challenges in IR for the coming decades and aims to anticipate future changes.

He presented a SWOT (strengths, weaknesses, opportunities and threats) analysis of the department. Its strengths include sustainability of bilateral comparisons, high international recognition and credibility, full and dynamic synergy with the Consultative Committee for Ionizing Radiation (CCRI) and highly skilled and involved staff. Weaknesses are the small team size, limited facilities, restricted availability for research and development, and a skills gap to meet emerging demands. Opportunities include expansion of scientific collaborations and secondments, upgrading of facilities and equipment, utilizing off-site facilities, realigning staff skills, and aligning with the overall CIPM strategy. The threats are staffing and budget constraints (including retirements without replacement and ageing facilities and standards), dependence on third-party institutes for access to off-site facilities, challenges in replacing radioactive sources, and French and international nuclear regulation.

V. Gressier said that the vision for the future of the department has been developed following a consultation exercise that started in the summer of 2023. He gave a summary of progress so far and noted that the main topic for consideration by the CIPM are the options regarding the future of the  $^{60}\text{Co}$  source and its implications. In terms of further development of the vision, five webinars and six workshops will be held together with the CCRI meetings in 2025, with discussions in each section that will be focused on future needs. On 6 November 2025 there will be a workshop at the BIPM on the history and future of ionizing radiation metrology. The objectives for the end of 2025 are to define the strategic directions for the CCRI during its meeting on 7 November. The strategy of the BIPM's Ionizing Radiation Department will be finalized and the CCRI strategy will be updated.

He presented the department's planned future developments under the headings of dosimetry, radionuclides and digital. In the dosimetry area, developments include new comparisons,

evolution of current comparisons, new calibration services, and exploration of alternative standard fields to  $^{60}\text{Co}$ . Dosimetry developments will also focus on supporting the coordinated international effort to define world-wide facilities for high-energy particles, for example proton/hadron and neutrons. In radionuclides, future developments will be to broaden the measurement capabilities of the International Reference System (IRS), deepening involvement with the International Atomic Energy Agency (IAEA) in radionuclide metrology, and involvement in efforts to determine fundamental nuclear data for new radionuclides. The development of digital services will involve the replacement of analogue electronics by digital acquisition systems and the development of a centralized service to validate the analysis software of the produced digital data. The challenges for these developments are the need for additional resources, the requirement for new skills, and a greater reliance on off-site facilities for dosimetry.

V. Gressier gave a summary of the options to increase the available human resources in the department. Collaborations with NMIs, DIs and international organizations (IOs) could be expanded by ensuring that any new developments are made as part of a scientific cooperation. This could also be achieved by increasing the number of secondees, visiting scientists and students. The team's workload for performing comparisons and calibrations could be reduced by cutting the number of calibration services. However, this move would be contradictory to the strong request for these services from NMIs without primary standards. The reduction in workload could also be achieved by transferring the responsibility for certain comparison services to the CCRI. Other options to increase the available human resources include outsourcing and increasing the number of staff.

He returned to the main topic of the presentation, which was the decision that needs to be taken by the CIPM on whether or not to replace the  $^{60}\text{Co}$  source at the BIPM headquarters. This decision is critical to the future direction of dosimetry services and will affect the Work Plan for 2028-2031. The use of the current source will end in 2032 following expiration of the authorization by the French Nuclear Safety Authority. In addition, the activity levels of the source will be too low to continue. He stressed that  $^{60}\text{Co}$  still has a fundamental role in dosimetry.

V. Gressier presented two options for the future of the  $^{60}\text{Co}$  source. Option 1 is for the purchase of a new  $^{60}\text{Co}$  source for the BIPM, including an irradiator, which would remain in use for another 20 years. This would cost an estimated 500 000 to 800 000 euros at current prices. The NRC, BARC and CNEA have proposed that options are explored to find a solution with a reduced price. He emphasized that this would be the final time that a  $^{60}\text{Co}$  source would be purchased; an alternative would be sought during the 20 year period. Option 2 is not to replace the  $^{60}\text{Co}$  source at the BIPM headquarters. The BIPM would use an independent off-site facility to maintain its comparison and calibration services. There are  $^{60}\text{Co}$  sources available at (Option 2a) DOSEO, Saclay (France) and (Option 2b) the IAEA. The access cost for the DOSEO facility would need to be determined and access to the IAEA would incur no extra costs. However, the use of the IAEA facilities would involve BIPM staff working at their site. The timetables for pursuing each option were shown along with a breakdown of the benefits and disadvantages.

The President thanked V. Gressier and invited questions and comments. J.-T. Janssen, in his capacity as President of the CCRI, thanked V. Gressier for the considerable amount of work that has gone into developing the strategy and the options. He recalled that there had been an extensive consultation exercise with all ionizing radiation stakeholders, particularly the users. J.-T. Janssen added that the CIPM needs to consider the future strategy for the BIPM ionizing radiation laboratories and what activities it should undertake in the future.

The CIPM wanted to see more detailed data on the Member States' use of the services offered by the department and the costs and impact, including on other departments, of the various options presented. It was stressed that a decision is needed for the Work Programme 2028-2031, including budgetary issues.

H. Laiz commented that the presentation on the analysis of benefits and disadvantages of the options stated that use of the DOSEO facilities would reduce the quality of the services with an increase in uncertainty. He asked if the same loss of quality would apply to use of the IAEA facilities, quoting anecdotal evidence among ionizing radiation colleagues that the uncertainty achieved with the IAEA is greater than with the BIPM. V. Gressier replied that the BIPM would continue to use its own equipment, standards and quality system if it carried out the work at the IAEA; the only difference would be the sources. But, he added a proviso that if it is not possible to control all parameters from start to finish of a comparison, there will be an unavoidable increase in the uncertainty.

C. Denz said that the PTB supports the BIPM maintaining its services in ionizing radiation and was of the opinion that the same is true in other NMIs. M.L. Rastello said that she had received a letter from the head of the ENEA-INMRI stating that he supported the BIPM maintaining a  $^{60}\text{Co}$  source on-site. J. Olthoff added that it would be useful to determine not only which NMIs are using the BIPM's ionizing radiation services but also why they are using them. This would allow the BIPM to assess what unique services it can offer that are not available elsewhere. V.G. Achanta and V. Coleman agreed that the BIPM is preferred as the central and trustworthy facility for ionizing radiation metrology and that this is an excellent example of a practical system with a fundamental impact that is available to all Member States. The President added that the cost implications of retaining a  $^{60}\text{Co}$  source at the BIPM headquarters and the other options needs to be examined. The preference may be to retain a  $^{60}\text{Co}$  source at the BIPM, but this will only be possible if the organization can afford it.

J.-T. Janssen reminded the CIPM that the services would remain the same wherever they are located. The Director said that if the choice is between using offsite facilities at DOSEO or the IAEA, the latter would require a joint staff member. This would need a legal agreement with the IAEA, which is a UN organization. Such a model could potentially be used for other aspects of the BIPM's work in the future.

The President asked the CCRI and the Ionizing Radiation Department to develop a more detailed proposal in terms of funding and the Work Programme 2028-2031 ready for presentation at the next session of the CIPM in June.

## **International Liaison and Communication**

A. Cypionka, the Director of the ILC Department, reported on staff changes in the department. She said that J. Miles had left the BIPM at the start of March 2025 after a 28 year career. The recruitment process is under way to find a replacement to work on the Digital Transformation.

The BIPM currently has 64 Member States and 37 Associates. R. Guliyeva, the Principal Liaison Officer responsible for Institutional Liaison and Membership, is in contact with a number of Associates that wish to become Member States, potential Associates, and excluded Member States and Associates that wish to be reinstated. Armenia is in the final stages of becoming an Associate and only has to pay its first year's subscription to complete the process.

A. Cypionka said that two Memoranda of Understanding (MoUs) are being prepared. A new MoU is being negotiated with UNESCO to update and modernize the existing agreement that has been in place since 1949 and was signed by the CIPM. In addition, the BIPM has worked with the Physical Metrology Department and the Consultative Committee for Photometry and Radiometry (CCPR) to update the MoU with the International Commission on Illumination (CIE).

The department continues to work with the BIPM's institutional liaison organizations on several events for the 150th anniversary. The ILC team has weekly meetings with UNESCO to discuss preparations for the World Metrology Day symposium at its headquarters on 20 May. The meeting room, agenda and Master of Ceremonies have been confirmed. In addition, the department is developing coordinated outreach activities with the United Nations Industrial Development Organization (UNIDO) to make the world-wide measurement system more widely accessible, specifically for potential observers. As part of these activities, a joint webinar is under discussion to mark the 150th anniversary. A half-day thematic session of the World Trade Organization (WTO) Technical Barriers to Trade Committee (TBTC) on "the role of metrology in facilitating trade and supporting the effective implementation of the TBT Agreement" will be held at their meeting in November 2025.

A. Cypionka recalled that R. Guliyeva had been on a seven-month part-time loan to the OECD Regulatory Policy Division between September 2023 to March 2024 to participate in the OECD-PTB QI-regulation project. This project included a one-day BIPM-OECD workshop to present the main findings of the study on 6 December 2024. A report documenting the key QI components, describing its current interactions with the broader regulatory community and highlighting the key benefits and pitfalls will be published in 2025.

The BIPM Director and C. Kuanbayev attended the Conference of the Parties of the UNFCCC (COP29) in Baku (Azerbaijan) in November 2024. The Director participated in a panel on "Measurements supporting international trade" on 14 November 2024 hosted by the International Organization of Legal Metrology (OIML) in the ISO Pavillon. In the same week, the BIPM delegation attended the opening ceremony of newly launched laboratories at the Azerbaijan Metrology Institute (AzMI).

A. Cypionka commented that the CIPM MRA database (KCDB) is increasingly inter-related with the BIPM's digital transformation activities and the work of the FORUM-MD. Ongoing projects for the KCDB include beta-testing of the KCDB application programming interface (API), extending the API to cover CMCs that are no longer published, and updating the JCRB review performance statistics. Projects for 2025 will focus on the implementation of permanent identifiers (PIDs) in the KCDB, development of an API to access comparison data, extension of metadata of comparison participants, and developing a control menu for the CMC submission form.

The Capacity Building and Knowledge Transfer (CBKT) team published a BIPM/OIML e-learning course in late 2024 based on the joint publication "National Metrology Systems - Developing the Institutional and Legislative Framework". CBKT projects for 2025 include two UTC Summer

Schools on 7-9 May and 9-11 September organized by the Time Department. A BIPM/GULFMET workshop for CMC writers is planned for October. The eighth cycle of the joint BIPM and TÜBİTAK UME initiative was launched. The application deadline is 6 April 2025 and the project placement training will start on 1 September. A new course will be launched on “Use of Mass Spectrometry in Radionuclide Metrology” in conjunction with the Ionizing Radiation Department. In addition, the ILC Department will publish e-learning modules on comparisons to assist comparison pilots and an introduction to the BIPM.

A. Cypionka said that the ILC Communications Team, in collaboration with an external designer, was responsible for the poster for World Metrology Day 2025. In parallel with the poster, a number of visual elements were designed for the 150th anniversary, including a logo and macaron/medal. The BIPM website was updated to include a new tab that provides information about events and will give contextual information. The BIPM will carry out a targeted communication campaign for the anniversary including a social media toolkit, which will be made available via the anniversary tab on the website and events will be promoted through the speakers’ social media channels. The BIPM and UNESCO will produce a joint opening video for the event on 20 May and a series of “talking heads” videos will be produced for the symposium and conference. Two new initiatives have been launched on the website and LinkedIn to highlight relevant “international days” and a “do you know” campaign to explain metrology, particularly the many acronyms used by the community and the BIPM. The Communications Team has also produced a series of new publication templates and a new PowerPoint template.

Digital Transformation activities have included beta testing of the SI Reference Point and publication of all quantities in the KCDB and the service categories except for the chemistry area. An outstanding task is to finish mapping the quantities against the service categories. The BIPM has published the references for nuclides. The ongoing work for the back office includes completion of the documentation for the web interface and simplification of the server architecture. There is also an outstanding task to automatically generate the service category files from the KCDB and external identifiers. Work on the SI Reference Point is under the supervision of F. Meynadier (Time Department) who collaborates with an Expert Group to develop the code and upload it to a repository (Github). This group is preparing the source code to make it publicly available. The BIPM will officially release version 1.0 when this work is complete.

A. Cypionka completed the presentation by recalling Decision CIPM/113-29 (2024), which asked the BIPM to pursue an Open Access publishing model for *Metrologia*. The BIPM has been in contact with the IOPP, the publisher of *Metrologia*, to negotiate a new contract and the intention is “flip” *Metrologia* to become fully Open Access from January 2026. Decision CIPM/113-29 (2024) also called for the creation of a separate entity for the publication of comparison reports and asked the BIPM to identify and implement an appropriate mechanism for this. This initiative was suggested to prevent the publication of comparison reports in *Metrologia* from having a negative impact on the journal’s impact factor. The BIPM has developed a proposal to publish the Technical Supplements through its website, starting in January 2026. A. Cypionka presented details of the proposed publication process.

The President thanked A. Cypionka and invited questions and comments. The CIPM asked if the existing Technical Supplements will remain available after the change to publication by the BIPM. A. Cypionka confirmed that they will remain available and noted that the comparison reports are also available in the KCDB. M.L. Rastello commented that the MoU with the CIE is not just important for the CCPR, it is also relevant to the Consultative Committee for Units



(CCU). She added that the CIPM needs to clarify the role of the Consultative Committees in contributing to the text and content of MoUs. A. Cypionka replied that it is the role of the CIPM to approve the text and there had been some confusion that the CCPR would do this. The CCPR had provided some input into the MoU, however the text of an MoU should not be too detailed and technical.

## 14. Reports from the CIPM Forums and Joint Committees

### CIPM Sectorial Task Group on Climate and Environment (CIPM-STG-CENV)

D. del Campo Maldonado, the Chair of the CIPM-STG-CENV, recalled that the report of its 1st Stakeholder meeting, held in September 2024, has been published. She said that a colleague at a university in the UK had informed the CIPM-STG-CENV that the report of the “Metrology for climate action” workshop held in September 2022 had helped him obtain funding for an ocean observation project, funded jointly by a UK and US scheme. She added that this demonstrates the positive impact of the joint BIPM/World Meteorological Organization (WMO) workshop.

The CIPM-STG-CENV has launched a new membership scheme that calls on the CC Presidents to nominate representatives to the group. It has already engaged with IOs and RMOs that have activities in climate science and the environment, as well as potential expert members, to join the CIPM-STG-CENV.

D. del Campo Maldonado said that she has been in contact with the Chair of the FORUM-MD and they agree that it will be necessary to modify the document CIPM-D-01 “Rules of procedure for the Consultative Committees (CCs) created by the CIPM, CC working groups and CC workshops” to encompass membership of the CIPM Forums and Sectorial Task Groups. She added that it will be necessary to allow some flexibility over membership of the CIPM Forums and Sectorial Task Groups to allow full participation of liaison organizations.

The CIPM-STG-CENV will hold its second stakeholder meeting in 2026 and, possibly, a webinar devoted to “Earth observation metrology” is planned for November 2025. D. del Campo Maldonado asked for the support of the CIPM for these two events.

The President thanked D. del Campo Maldonado.

### Forum on Metrology and Digitalization (FORUM-MD)

C. Denz, Chair of the FORUM-MD, reported that it had held its second meeting on 20-21 February 2025. She thanked the two Co-Chairs, G. Macdonald and H. Laiz and the Executive Secretary, G. Panfilov, for their support during the meeting.

The meeting agreed that workshops and webinars should be held on “sensor networks and digital twins”, “AI” and “FAIR data principles” for stakeholders in the Regional Metrology Organization (RMOs). In addition, the FORUM-MD will foster more collaborations for example by working with IOs such as ISO, through the signatories to the *Joint Statement of Intent on the digital transformation in the international scientific and quality infrastructure*, and by changing the structure of some task groups. C. Denz gave a summary of the outcomes of the discussions in the Task Groups and Working Groups during the meeting.

C. Denz recalled that the recent highlights of the FORUM-MD's work included a workshop on "Metrological Traceability" held at the IMEKO World Congress in Hamburg (Germany) in August 2024. The workshop was co-organized by the FORUM-MD in partnership with IMEKO TC6 (Digitalization), TC8 (Traceability in Metrology), and TC21 (Mathematical Tools for Measurements). It attracted 80 participants and topics encompassed foundational principles such as uncertainties, digital traceability and certificates. The meeting of NMI Directors and Member State Representatives, held at the BIPM headquarters on 17-18 October 2024 had discussion topics on digitalization in terms of FAIR data and artificial intelligence (AI) as well as quantum technologies. An online workshop on "Metrology for Complex Sensor Networks" was held on 11-12 February 2025. It covered the methodology for defining sensor networks and real-world examples. A hybrid workshop on "Emerging Topics in Digitalization of Metrology" held on 19 February 2025 had 114 participants and discussed the basic themes of AI, digital data and tools, trustworthy AI, digital calibration certificates, FAIR data and semantics. The discussions focused on the needs of industry, metrology institutes and stakeholders.

The FORUM-MD Working Group on Strategy (FORUM-MD-WG-S) made a series of decisions during the meeting in February 2025. The Task Groups on FAIR Metrology and data Quality have been merged into a single FORUM-MD TG Data Quality and FAIR Practices in Metrology (FORUM-MD-TG-DQ&FPM). The Task Group on Secure and Trustworthy AI has been renamed the FORUM-MD *ad hoc* Task Group on Building Safe and Trustworthy AI (FORUM-MD-TG-AI). In addition, the FORUM-MD-WG-S decided to extend the role of the Chair of the FORUM-MD-WG-RMO for another year and to establish a discussion group on sensor networks. The latest structure of the FORUM-MD and its Working Groups and Task Groups was presented.

C. Denz presented revised Terms of Reference (ToR) for the five Task Groups of the FORUM-MD and two of the Working Groups as agreed at its meeting in February. The ToR had been discussed and supported by the FORUM-MD-WG-S, which recommended that they are accepted by the CIPM. The CIPM noted the proposed ToR for the WGs and TGs.

C. Denz recalled that the CIPM had discussed the proposed rules and criteria for participation in the FORUM-MD during its 113th meeting in 2024. She echoed the message of D. del Campo Maldonado in the presentation on the STG-CENV that there is a need to revise the document CIPM-D-01. She said that the membership needs of the Forums are different to the CCs in that they need to allow more inclusive participation. The rules that govern applications for membership should also follow criteria that are adapted to the Forums. The situation is now urgent following applications by four of the existing observers to the FORUM-MD to become members. The observers are CMI (Czechia), GUM (Poland), NIMT (Thailand) and NPLI (India). The FORUM-MD-WG-S recommended that the applications from CMI, NIMT and NPLI should be accepted and that GUM should be encouraged to become more involved in the work of the FORUM-MD before it is recommended for membership. She recalled that the existing rules in CIPM-D-01, section 4.2 state that in order to become a member (of a CC), an institution of a Member State must "have demonstrated competence by a record of participation in international comparisons". This criteria cannot be applied to the work of the Forums. It was suggested that instead of reference to comparisons, the text could be amended to "can demonstrate a record of achievement within the agreed scope of the FORUM-MD" and "will commit to contribute to the work of the FORUM-MD". Section 4.3 on observer status notes that "an Observer at the applicable CC can send one person (only)". It is recommended that this rule is also changed. Suggestions for alternative text were presented for discussion by the

CIPM. She asked the CIPM to either approve a change to CIPM-D-01 or to make a decision on the individual membership applications.

C. Denz said that the FORUM-MD is considering a draft resolution for the 28th meeting of the CGPM (2026) and presented the preliminary text. The FORUM-MD-WG-S will collaborate with the BIPM to draft the final version of the resolution that will include the outcomes of the discussions with the CIPM. The CIPM noted this proposal.

She concluded by summarizing the FORUM-MD's activities during its first year and gave details of its planned activities for the next year. It will hold annual plenary meetings, the next of which will be held during the week 9-13 March 2026. This week will include a workshop with the signatories to the *Joint Statement of Intent on the digital transformation in the international scientific and quality infrastructure* on "Digitalization and Standards".

The President thanked C. Denz and asked if there were any comments. P. Richard said that there was currently no consensus within the CIPM to revise CIPM-D-01 and suggested that the minutes should note that the CIPM endorses the proposal by the FORUM-MD to "demonstrate a record of achievement within the agreed scope of the FORUM-MD" rather than "to demonstrate competence by a record of participation in international comparisons". The President summarized the discussions on CIPM-D-01 that had taken place over the last few years and noted that any changes to the document would have to be generic. Discussions on changes to CIPM-D-01 must respect the fact that the Forums are different to the CCs, this is why they have Chairs instead of Presidents.

C. Denz agreed with the suggestion by P. Richard, but said that the FORUM-MD needs transparent rules that allow potential new members to apply and particularly to be clear why some applications for membership are rejected. The President said that the CIPM will discuss the issue further at its meeting in June 2025 and in the meantime, the FORUM-MD can apply the criteria for membership outlined by C. Denz and reiterated by P. Richard. J. Olthoff commented that the membership of the CIPM Forums should not be constrained by using a model that was developed specifically for the CCs. The Director said that the Member States have nominated NMIs and DIs to the BIPM and these are the institutes with which it is mandated to interact. The BIPM does not have a mandate to interact with other organizations in a country unless it is authorized to do so by that State. It is therefore difficult to include a wider group of organizations, even if they are in Member States, unless they are nominated by the NMIs.

It was suggested that the CIPM will need to take a decision on the current application for membership by the three NMIs, rather than delegating it to the FORUM-MD, as it was the CIPM that took the original decision on membership when the Forum was set up.

The CIPM had a brief discussion and accepted the three new members of the FORUM-MD. The following decision was agreed.

**Decision CIPM/114-6 (2025)**

The CIPM accepted the following new members of the Forum on Metrology and Digitalization (FORUM-MD):

- CMI (Czechia)
- NPLI (India)
- NIMT (Thailand)

**Horizontal Task Group on “Quantum for Metrology”**

J.-T. Janssen gave an update on the establishment of a “horizontal” Task Group on “Quantum for Metrology”. He noted that the establishment of quantum standards will involve a number of CCs, as discussed earlier in the meeting. These standards are being used by organizations outside the scope of the NMIs and consideration needs to be given as to how to manage this. He added that he will act as the intermediary between the Task Group and the external organization of NMIs that is working to develop quantum standards for industry and pre-normative projects in this field.

The CIPM suggested that J.-T. Janssen should draft a formal proposal for the establishment of an (*ad hoc*) Horizontal Task Group on “Quantum for Metrology” for presentation at the next Session in June 2025. The CIPM agreed that the drafting of the proposal will be led by J.-T. Janssen, with support from V.G. Achanta, C. Denz, G. Macdonald, J. Qu, M.L. Rastello and G. Rietveld.

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

The Director reported on the work of the JCGM. He explained the work being carried out on a new definition of measurement uncertainty. Both JCGM Working Group on the Expression of Uncertainty in Measurement (JCGM-WG1:GUM) and JCGM Working Group on the International Vocabulary of Metrology (JCGM-WG2:VIM) are involved in this. The current definition in the 3rd edition of the International Vocabulary of Metrology (VIM) is *“non-negative parameter characterizing the dispersion of the quantity values being attributed to a measurand, based on the information used.”* The proposed new definition under discussion is “doubt about the value of the measurand”. The two Working Groups will hold a webinar in 2025 to explain the proposal to the metrology community. The Director cautioned against adding a new definition of measurement uncertainty, without extensive consultation with the community beforehand.

He reported that JCGM-WG2:VIM is currently working on a fourth Committee Draft of the VIM4, which will be sent to all NMIs for comment.

The Director concluded by saying that a change has been agreed to the JCGM charter whereby all future work items for the JCGM must be approved by the Plenary body and must have an agreed objective, scope and timescale.

## 15. The terms of suspension for Member States in arrears for three years

The Director explained that there is no detailed and specific statement of the terms of suspension for a Member State. There are well-established practices that are applied consistently, and he had worked with A. Rohrer, the BIPM Legal Adviser to draft a CIPM decision that would bring greater clarity to the topic. The research behind the draft decision had examined how suspensions are handled in other IOs and the BIPM's case history in this area. A proposal has been submitted to the CIPM<sup>3</sup>.

A. Rohrer recalled that the legal context for suspension of Member States in arrears is given in Article 6, Paragraph 7 of the Annexed Regulations to the Metre Convention. In addition there are a number of existing CGPM and CIPM proceedings, resolutions and decisions relating to the issue. The reason for suspension is clear in the Metre Convention, which states that *"The advantages and prerogatives conferred by accession to the Metre Convention are suspended for those States in arrears by three years."* A Member State can only be suspended for non-payment of financial contributions as soon as it is in arrears for more than 3 years. She emphasised that a Member State cannot be suspended for any other reason.

A. Rohrer explained what is meant by advantages and prerogatives, which are also referred to as "rights". These rights are derived from the Metre Convention and can be classified as rights concerning governance of the organization (the right to attend and vote at meetings of the CGPM and the right to be elected to, attend and vote at the CIPM) and the right to services and activities (the right to benefit from the services provided by the Organization and the right to participate in the activities of the Organization). A list of the actual services and activities to which a Member State is entitled was presented.

The proposal for the terms of suspension in the context of governance is that a suspended Member State would be invited to attend meetings of the CGPM, but would not have the right to vote. If a suspended Member State had one of its nationals as an existing member of the CIPM, that person would continue to be invited to attend its meetings but would not have a vote and would not be eligible for re-election. A suspended Member State would also not be eligible to present a candidate for election to the CIPM.

A. Rohrer said that a suspended Member State would no longer be eligible for any BIPM calibration services, the provision of standards and prototypes and would not be able to participate in BIPM comparisons. The principles of "no payment, no services" would be applied. However, a suspended Member State would be able to continue to participate in the CIPM Consultative Committees, NMI Director's and Member State Representatives' meetings and general BIPM activities, for example CBKT initiatives and secondment programmes.

She clarified that the rationale behind the separation of "governance activities" and "services and activities" is that the CIPM and CGPM are organs that create decisions that affect the Organization, whereas the CCs and NMI Director's and Member State Representatives' meetings do not make formal decisions.

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<sup>3</sup> Note and Draft CIPM Decision on the Effects of Suspensions of Member States. Document CIPM/2025-I-14-a

The Director commented that suspension can be considered to be analogous to a “waiting room” where a suspended Member State has the option to either pay its arrears and rejoin or to leave with their arrears. There is a process in place to deal with the latter. V. Coleman asked if it is possible for a suspended Member State to leave and then reapply to become an Associate. The Director replied that the rules applied by the General Conference are clear that there cannot be any retrogression. A Member State cannot leave and then come back at a lower status. This issue has been reviewed in the context of the proposed Observer status, whereby an Associate cannot leave and reapply to become an Observer.

G. Rietveld asked for clarification concerning the KCDB and the proposal that suspended states would no longer be able to participate in comparisons. The Director replied that there is a distinction between the wider work of the CIPM MRA, which concerns the RMOs and the NMIs, and the costs incurred by the services provided by the BIPM. If an NMI included a suspended Member State in a comparison, this would be a matter for the NMI concerned, but it is clear that the provision of laboratory services by the BIPM would not be possible to a suspended State. Any existing CMCs from a suspended Member State would remain in the KCDB. This is in keeping with the practice followed by other IOs that work at the level of no voting and no access to “cost-bearing” services for suspended states. Following a question, the Director said that the discussion here is focused on suspension of Member States in arrears for more than three years and not exclusions, the rules for which are clear. He also noted that the discussions on the proposals had reflected on the differences between the rights and privileges of Member States compared to those of Associates.

G. Macdonald asked if an existing CIPM member from a suspended Member State would continue to have a voice in CIPM discussions, as this could affect the outcome of any decisions. A. Rohrer replied that, based on the practices in other IOs, in this situation, the member would continue to have a voice if they want to participate, however participation in any discussion is at the discretion of the President of the CIPM. V. Coleman added that a member from a suspended state may be a CC or WG Chair and may need to participate in specific discussions. Following a discussion, the decision was accepted with one amendment.

#### **Decision CIPM/114-7 (2025)**

The CIPM decided that a Member State that is suspended:

- may be represented at CGPM meetings but shall not be entitled to vote;
- shall not receive calibration services from the BIPM, nor may it participate in international comparisons organized by the BIPM;
- shall not be entitled to publish new CMCs in the KCDB;
- shall not be entitled to obtain calibrated standards, nor purchase a calibrated platinum-iridium kilogram from the BIPM;

and that a national of a Member State that is suspended:

- may attend CIPM meetings, as an elected CIPM member, but shall not be entitled to vote;
- may not stand for election or re-election to the CIPM.

## 16. Plans for the 28th meeting of the CGPM (2026)

The President presented a list of draft resolutions for the 28th meeting of the CGPM. He said that his intention was to assign a CIPM member to work with the BIPM headquarters' staff to ensure that the first drafts of each of these are ready for the June Session of the CIPM.

- Draft Resolution A “On the universal adherence to the Metre Convention”. This resolution will introduce the Observer status. The Director noted that he has been working on this draft resolution with V. Coleman and A. Cypionka and it is close to being ready to share with the CIPM.
- Draft Resolution B “The dotation for the period 2028-2031”. This draft resolution will be finalized closer to the time of the conference.
- Draft Resolution C “Towards a new definition for the second”
- Draft Resolution D “On the continuous nature of UTC”
- Draft Resolution E “On the definition of a timescale on the moon”.
- Draft Resolution F “On the digital transformation of metrology”. C. Denz with the Director, and A. Cypionka are drafting this resolution.

Draft resolutions C, D and E were discussed in §12 under the CCTF.

A possible draft Resolution G concerned with the global environment and climate monitoring was discussed. It was agreed that it would only be proposed if there was a good reason to introduce it.

S.-R. Park suggested that the CCQM Task Group on Food Measurement (CCQM-TG-FOOD) could prepare a draft resolution on food safety. The President commented that this activity may not be sufficiently mature at this stage for a draft resolution.

The President asked P. Richard for clarification of the difference between a CGPM Resolution and a Decision. He recalled that a decision on a Special Procedure on voting was made as the first item at the 27th meeting of the CGPM (2022). P. Richard said that the CIPM will have to give a report to the General Conference on the mandate it received to modernize the governance of the BIPM. As a consequence, there may propose decisions on the topics covered in §8 (to take note of three governance documents: the Rules of Procedure of the CIPM, the Code of Conduct of the CIPM and the Regulation governing the competencies of the Director.) Member States will be consulted at their meeting in October 2025. Depending on their responses, it may be necessary to go to the General Conference with a special procedure relating to the election of the CIPM and the approval of the Rules of Procedure of the CGPM.

J.-T. Janssen proposed the drafting of an inspirational resolution based on the young metrologists initiative. There was some support for this proposal but it was noted that it might be prudent to use the term “next generation metrologists” as an alternative.

The CIPM returned to the topic of draft Resolution G. The President suggested that D. del Campo Maldonado continue to consult with the members of the CIPM-STG-CENV and report to the CIPM in June. He said that it may be necessary to replace draft Resolution G with a more generic version that addresses the grand challenges and the CIPM Strategy 2030+.

## 17. Confirmation of the JCRB representative

J. Olthoff said that he is stepping down as the official CIPM representative to the JCRB. H.A. Frøystein volunteered to take on the role and, following a show of hands, was appointed unanimously.

### Decision CIPM/114-8 (2025)

The CIPM expressed its appreciation for the work carried out by J. Olthoff, the outgoing CIPM liaison to the Joint Committee of the Regional Metrology Organizations and the BIPM (JCRB), and appointed H.A. Frøystein as the new CIPM liaison.

## 18. Member States update

The President said that the current geopolitical situation should not stop the BIPM from carrying out its activities, but it should be aware of certain sensitivities. He added that if a Member State were to withdraw at short notice or did not pay its contributions, the BIPM has sufficient reserves to cover such eventualities. He asked the CIPM members to maintain awareness of any potential issues (See §4).

A member commented that one of the primary roles of the CIPM is to promote and protect the International System of Units (SI) as a viable world-wide measurement system. The CIPM should make sure that it continues to perform this critical role. It was suggested that this role could be included in Draft Resolution A on universal adherence to stress the importance of the SI as a cornerstone of metrology. An alternative would be to develop a general strategic resolution as suggested at the end of §16.

## 19. Any other business

V. Coleman recalled that discussions on the re-election of the CIPM had not come to a conclusion. The President said that the CIPM will discuss the issue at its meeting in June as part of the proposed decisions on the RoP of the CGPM. P. Richard added that the only way to change the election procedure and to get a new method approved by the CGPM in 2026 is to get the agreement of the Member States. This is why a consultation exercise will be carried out as described in §8 along with activities such as meetings with the Chair of the CEC.

J.-T. Janssen, speaking as the CCRI Chair, said that his preferred option for the future of the Ionizing Radiation Department is Option 2 that calls for deepening involvement with the International Atomic Energy Agency (IAEA), as discussed in §13. This option provides the greatest long-term stability and security for the future of the department's services. He noted that most of the members of the CCRI preferred Option 1, however this option has associated risks, including financial ones. The CIPM agreed that a full report on the financial implications of each option should be drafted for presentation to the CIPM in June 2025.

G. Rietveld reminded the CC Presidents that they should update their CC strategies before the CGPM meeting in 2026. These updates need to account for the findings of the horizontal themes and their impacts, such as digitalization. The Director added that the CC strategies will be used to inspire the development of the BIPM strategy that will be presented to the CIPM in June. The BIPM strategy will have to be agreed in time for it to be used as an input for the draft Work Programme 2028-2031.

The president thanked the CIPM and closed the meeting.