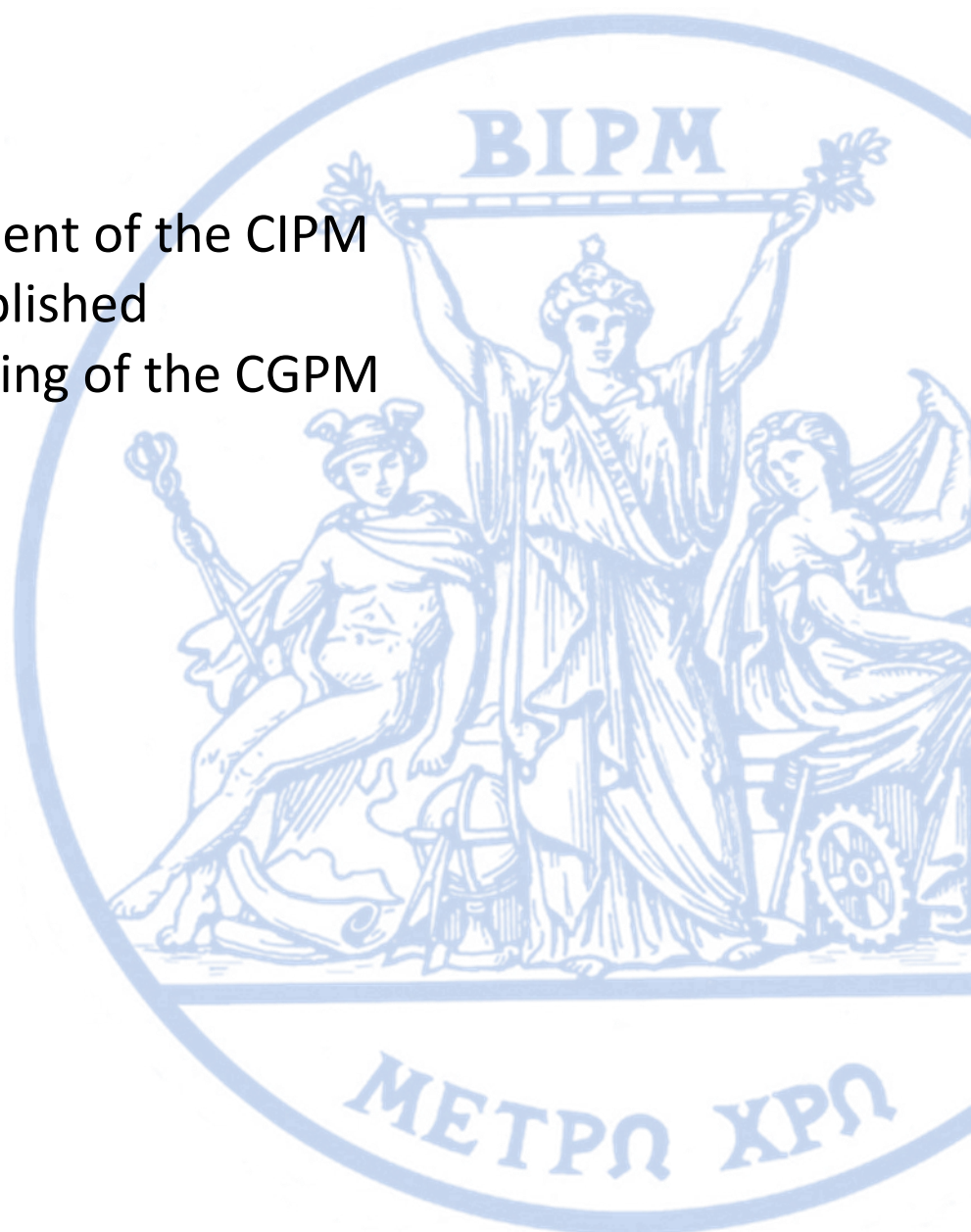


Bureau
◆ **International des**
◆ **Poids et**
◆ **Mesures**

Report of the President of the CIPM
on the work accomplished
since the 24th meeting of the CGPM



November 2014

In accordance with the Metre Convention it is my pleasure to report on the work accomplished since the 24th General Conference held in 2011. Progress reports have been given at meetings of Government Representatives and Directors of National Metrology Institutes which were held at the BIPM on 16-17 October 2012 and 23-24 October 2013 and it is not my intention to go into details here on the work accomplished, but rather to highlight the actions and achievements. The BIPM Director will provide more details on the accomplishments and progress under the work programme approved at the 24th CGPM, Chairs of CIPM Sub-Committees and *ad hoc* Working Groups will address specific aspects of new initiatives and the Presidents of the CIPM Consultative Committees will report on technical developments.

I start by first welcoming delegations from new Member States and Associates of the CGPM.

Since the 24th CGPM three States have acceded to the Metre Convention and eight other states have become Associates of the CGPM.

New Member States (and date of accession):

- Republic of Tunisia (formerly an Associate) (1 February 2012)
- Republic of Colombia (6 February 2013)
- Republic of Iraq (20 August 2013)

It is my pleasure to welcome delegations from the new Member States to the 25th CGPM.

New Associates of the CGPM (and date of Association):

- Sultanate of Oman (8 May 2012)
- Republic of Botswana (30 May 2012)
- Syrian Arab Republic (31 May 2012)
- Republic of Namibia (10 August 2012)
- Mongolia (7 August 2013)
- Grand Duchy of Luxembourg (29 January 2014)
- Republic of the Sudan (6 June 2014)
- Republic of Yemen (21 July 2014)

It is my pleasure to welcome delegations from the new Associate States to the 25th CGPM.

As of 18 November 2014 there are 56 States Parties to the Metre Convention and 41 Associates of the CGPM.

1. Appointment of a new BIPM Director

In mid-2011 the BIPM Director, Prof. Michael Kühne, advised the CIPM of his intention to resign from the position of Director at the end of 2012. A Committee for the selection of a new Director was appointed by the CIPM comprising the four members of the CIPM bureau together with Prof. João da Jornada, Director of INMETRO (Brazil), as an external representative. From a field of 41 applicants for the position, nine were interviewed and the Selection Committee was unanimous in its recommendation of Dr Martin Milton to the CIPM as the preferred candidate. After due consideration by the CIPM of all candidates and of the report of the Selection Committee, Dr Milton was offered the position and was appointed in September 2012, initially as Deputy Director and then BIPM Director effective from 1 January 2013.

2. Actions arising from Resolutions taken at the 24th CGPM (See full list of Recommendations and Decisions attached in Appendix A)

Resolution 1: On the possible future revision of the International System of Units, the SI

- A Roadmap for the redefinition of the kilogram prepared by the Consultative Committee for Mass and Related Quantities (CCM) has been adopted by the CIPM.
- *Mises en pratique* for the new definitions of the kilogram, ampere, kelvin and mole have been prepared.
- Work is under way at the BIPM to calibrate the national prototypes held by those states able to realize the kilogram via the watt balance and/or Avogadro project.
- The President of the Consultative Committee for Units (CCU) will provide further information about the scientific progress being made at the National Metrology Institutes (NMIs).
- The CIPM, the Consultative Committees and the BIPM have all been active in alerting user communities and the general public to the intention to redefine various units of the SI. Most recently, presentations were made by the BIPM Director at the NCSL International conference in Orlando (USA) in July 2014 and by the President of the CCM and the Executive Secretary of the Consultative Committee for Electricity and Magnetism (CEM) at the International Conference on Precision Electromagnetic Measurements in Rio de Janeiro (Brazil) in August 2014. The Director of the BIPM International Liaison and Communication Department made presentations at the 30th ISO CASCO plenary in Geneva (Switzerland) in September 2014, at the ILAC General Assembly in Vancouver (Canada) in October 2014 and at a meeting of the World Trade Organization (WTO) in Geneva (Switzerland) in November 2014. In addition, the President of the CCM made a presentation at the 49th meeting of the International Committee of Legal Metrology (CML) of the International Organization of Legal Metrology (OIML) in Auckland (New Zealand) in November 2014.

Resolution 2: On the importance of international collaboration so as to place measurements to monitor climate change on an SI traceable basis

The BIPM has been active in collaborating with other international bodies concerned with the monitoring of environmental factors relevant to climate change:

- A joint workshop on “Global to Urban Scale Carbon Measurements” is being planned with the World Meteorological Organization (WMO) to be held at the BIPM in 2015.
- Experts from the WMO are now fully involved in activities related to climate change at both the Consultative Committee for Amount of Substance: Metrology in Chemistry and Biology (CCQM) and the Consultative Committee for Photometry and Radiometry (CCPR). Interaction with them led to the BIPM’s authorship of new WMO guidelines for continuous measurement of ozone in the troposphere.
- A Memorandum of Understanding (MoU) was signed with the International Atomic Energy Agency (IAEA) in 2012 leading to a Joint Workshop on Isotopic Ratio Standards for Greenhouse Gases.
- Collaboration with the International Association for Properties of Water and Steam (IAPWS) led to a joint position paper on “Metrological challenges for measurements of key climatological observables: Oceanic salinity and pH, and atmospheric humidity” and ongoing participation of the IAPWS in the Consultative Committee for Thermometry (CCT).
- A BIPM keynote lecture on “Linking Essential Climate Variables to SI traceable measurement” was presented at the 16th International Conference on the Properties of Water and Steam (2013).

Resolution 3: Dotation of the BIPM for the years 2013 to 2015

The CIPM has overseen the BIPM’s budgets and financial performance. The BIPM has remained within budget and significant steps have been taken to address future financial challenges associated particularly with the BIPM Pension and Provident Fund and health insurance. The actions taken will be discussed further in this report and in the report of the BIPM Director, as well as in reports to be presented by the Chair of the CIPM Sub-Committee on Finance and the Chair of the CIPM Sub-Committee on the BIPM Pension and Provident Fund and Health Insurance.

Resolution 4: On the status of Associate State of the General Conference

The BIPM has continued to encourage all Associates to work towards the status of States Parties to the Metre Convention and the new fee structure approved at the 24th CGPM has been implemented. Eight new Associates States of the General Conference have joined since the 24th CGPM.

Resolution 5: On the acceptance of Economies as Associate of the General Conference

Following this Resolution, acceptance of Economies as Associates is now only on a case-by-case basis and only with the unanimous support of the CGPM. I can inform the CGPM that the BIPM is not currently discussing associate status with any economies.

The CIPM has considered “means by which intergovernmental organizations, in particular those from regions without well-developed metrology infrastructure can be involved in the work of the BIPM”. As a result:

- A proposal to establish a new BIPM Visitor Programme has been developed and is presented for consideration at this meeting.
- The BIPM is working with the United Nations Industrial Development Organization (UNIDO) to support the development of AFRIMETS, the African Regional Metrology Organization, by lecturing at a number of workshops and providing advice to UNIDO.
- The BIPM continues to participate in the Developing Countries Metrology Accreditation and Standards (DCMAS) Network, working particularly closely with the OIML, the International Organization for Standardization (ISO) and the International Laboratory Accreditation Cooperation (ILAC). It also actively supports Regional Metrology Organizations (RMOs), particularly the developing RMOs such as GULFMET.

Resolution 6: On financial arrears of States Parties to the Metre Convention

The Republic of Cameroon and the Democratic People's Republic of Korea, having been in financial arrears for more than six years, were given 12 months to conclude a rescheduling agreement in accordance with Resolution 6 of the 24th CGPM. Both failed to conclude such an agreement and consequently were excluded from the Metre Convention in late 2012.

Resolution 7: On rescheduling agreements between the International Committee for Weights and Measures and defaulting States Parties to the Metre Convention for the payment of their financial arrears

Rescheduling agreements were concluded with the Dominican Republic and the Islamic Republic of Iran in October 2012. Both the Dominican Republic and the Islamic Republic of Iran settled their contribution and rescheduled payment of arrears for 2012. However, the Dominican Republic has not settled either its contribution or its rescheduled payment of arrears for 2013. Consequently the Dominican Republic has its rights and prerogatives suspended pending settlement of arrears for 2013. If the full amounts due (contributions and rescheduling payments) for 2013 are not settled by 31 December 2014, the Dominican Republic will be automatically excluded.

The Islamic Republic of Iran also did not settle its contribution and rescheduled payment of arrears for 2013 by the due date and had its rights and prerogatives suspended from 1 January 2014, pending settlement of its contribution and rescheduled payment for 2013. The Islamic Republic of Iran initiated payment in full for 2013 and 2014 in the second week of November 2014. However, the amount of arrears owing is in dispute and in a *Note Verbale* received by BIPM from the Iranian Embassy on 28 October 2014 Iran sought to have a delegation attend the 25th CGPM to have its case for a reduction in arrears considered. This request was received far too late to be considered at the 25th CGPM and, in any case, its membership was in suspension at the time. On the basis of new information provided by Iran and credible evidence that full payment of its contributions and rescheduled payments for 2013 and 2014 were in the process of bank transfer, representatives from Iran were invited to visit the BIPM on 14 November to discuss the issue and to present their case to the CIPM. Following the discussion and presentation to the CIPM, and in view of the payments initiated, an amendment to the rescheduling agreement was agreed such that further payment (as from 2015) of the arrears component is suspended until the dispute on arrears has been addressed. Timely payment of the annual contribution is a *sine qua non* condition for this.

Resolution 8: On the revision of the mise en pratique of the metre and the development of new optical frequency standards

There is excellent work ongoing at the NMIs which will be reported by the Presidents of the Consultative Committee for Time and Frequency (CCTF) and the Consultative Committee for Length (CCL).

Resolution 10: On the role, mission, objectives, long-term strategy and governance of the BIPM

The CIPM established an *ad hoc* Working Group under the Chairmanship of the President of the CIPM, as proposed under the Resolution. The *ad hoc* Working Group comprised 14 members with representation from the States Parties to the Metre Convention (with maximum, intermediary and minimum contributions), NMIs (properly balanced to represent all regions), the CIPM and the BIPM Director. The Working Group was charged with conducting a review of the role, mission, objectives, long-term financial stability, strategic direction and governance of the BIPM. It met on 14-16 March 2012, with follow-up email discussions and its recommendations were posted on the BIPM website on 6 April 2012. The CIPM response to the recommendations was presented to, and was the main topic of, a meeting of State Representatives and NMI Directors on 16-17 October 2012. Details of actions taken subsequent to the recommendations of the *ad hoc* Working Group were presented to a meeting of State Representatives and NMI Directors on 23-24 October 2013. The key actions are included in Section 8 below and proposals for approval by the CGPM are presented in the form of Draft Resolutions B and C.

3. Operational changes within the BIPM

Since the 24th CGPM there have been a number of changes within the BIPM that have resulted in important improvements to its operation. In particular, there have been changes in the management structure and also in the financial and administrative operations that have facilitated greater accountability and given increased flexibility, whilst at the same time maintaining a focus on the delivery of the agreed Work Programme. I take this opportunity to acknowledge the leadership and initiative of the BIPM Director in bringing about these changes and I leave it to him to provide further details.

4. Financial Position

There has been a decline in the BIPM's revenue following the removal of "supplementary contributions" in 2013 but this has been partially off-set by the doubling of the minimum subscription for Associates since 2013 and by the contributions and subscriptions of new Member States and Associates of the CGPM. Also, the internal structural changes effected by the Director have led to cost savings and greater efficiency enabling a small annual surplus to be achieved for

2013 and projected for 2014 with the expectation of a balanced triennial budget for 2013-2015. Further details on the financial position will be presented in the Director's report.

The accrual accounting system in the BIPM has now been fully implemented giving clarity to the true position on assets, depreciation and capital investment and it was pleasing to see that the end-of-year Audit Report for 2013 was free from qualifications for the first time in many years.

There are clearly long-term financial challenges to be faced, but with the assistance and advice of the CIPM Sub-committee on Finance and the CIPM Sub-Committee on Pensions, Provident Fund and Health Insurance, these are being confronted and will be addressed.

5. BIPM Work Programme

The CIPM is responsible for overseeing the technical Work Programme of the BIPM approved at the 24th CGPM. The Work Programme for 2013-2015 is on target to achieve all key objectives. Details of progress have been presented in the annual BIPM [Director's Reports](#) available on the BIPM website and highlights of those achievements will be presented by the BIPM Director in his report to the CGPM.

6. Consultative Committees

There are currently 10 CIPM Consultative Committees (CCs) and during the period since the 24th CGPM there have been a number of changes in Presidents.

Prof. Ian Mills retired as president of the Consultative Committee for Units (CCU) after 17 years of outstanding leadership. Prof. Joachim Ulrich, President of PTB (Germany) was appointed as the new President of the CCU.

Dr Philippe Richard, Deputy Director of METAS (Switzerland) was appointed President of the CIPM Consultative Committee for Mass and Related Quantities (CCM) following the retirement of Dr Mitsuru Tanaka. Dr Richard is not a member of the CIPM but was selected on the basis of his expertise and the lack of comparable experience within the CIPM.

Prof. Huseyin Uğur retired as President of the Consultative Committee for Thermometry (CCT) in 2013 and was replaced by Dr Yuning Duan, Vice Director of NIM (China).

Dr Franz Hengstberger retired as President of the Consultative Committee for Photometry and Radiometry (CCPR) in 2012 and has been replaced by Dr Takashi Usuda, Director MMC, NMIJ (Japan).

Dr Robert Kaarls retired as President of the Consultative Committee for Amount of Substance: Metrology in Chemistry and Biology (CCQM) in 2013 and has been replaced by Dr Willie May, Director of NIST (USA).

On behalf of the CIPM, I acknowledge and thank all outgoing Presidents for their leadership and valuable contributions. I especially acknowledge and thank Prof. Mills and Dr Kaarls for their outstanding contribution and dedication over many years.

7. Governance and Accountability of the BIPM

Based on concerns within the CIPM that expertise within its ranks was not being used to best effect, on comments and concerns expressed at the 24th CGPM and on recommendations of the *ad hoc* Working Group established in accordance with Recommendation 10 of the 24th CGPM, the following actions have been implemented:

- (i) Three CIPM Sub-Committees and two *ad hoc* Working Groups have been established to advise the CIPM on specific issues: Sub-Committee for Strategy; Sub-Committee on the BIPM Pension and Provident Fund and Health Insurance; Sub-Committee on Finance; *ad hoc* Working Group on CIPM membership; and *ad hoc* Working Group on Conditions of Employment. All members of the CIPM have a position on at least one of these SCs and WGs. Expertise is sought from outside of the CIPM when adequate expertise is not available from within. Mr Christian Bock, Director of METAS (Switzerland) contributes special expertise as an external member of the Sub-Committee on the Pension and Provident Fund and Health Insurance.
- (ii) A compact and clear statement of the BIPM Mission, Role and Objectives for the 21st century has been developed and published.
- (iii) A consolidated planning process has been developed and implemented under which 'strategic plans' developed by the CCs are made available to Member State Representatives and NMI Directors for comment. The comments are then taken into account and addressed in a consolidated plan that forms the platform for the preparation of the BIPM Work Programme, which is then also made available to Representatives of Member States and NMI Directors for comment. This has been the process followed in the preparation of the BIPM Work Programme for 2016-2019, submitted to the 25th CGPM.
- (iv) The CIPM recognizes the important role played by Regional Metrology Organizations (RMOs) in world metrology and seeks to engage with and support their activities. To this end the BIPM Director chairs the Joint Committee of Regional Metrology Organizations and the BIPM (JCRB), with the CIPM Secretary and, from time to time, other members of the CIPM in attendance. Representatives from the CIPM and BIPM attend the RMO General Assemblies and Workshops. All RMO Chairs are now invited to meetings of Member State Representatives and NMI Directors as a matter of course, and RMO Technical Committee Chairs are invited to Consultative Committee Strategy and Key Comparison Working Group meetings.
- (v) The BIPM has produced a consolidated and compact document of all current applicable rules and operational and decision making processes for the governance of BIPM. This [Compendium](#) is available online. The CIPM now places a [summary of decisions](#) taken at its meetings on the BIPM website within two weeks of the meeting and full minutes within 6 months. Also, an annual 4-page BIPM [Core Data](#) document is produced by the BIPM Director and is available in hard-copy and on the website.
- (vi) Formal reporting to Member States has been rationalized. Whilst reports are posted online as soon as they are available, they are sent annually to Member States as a single coherent printed set.

- (vii) The *ad hoc* Working Group on CIPM membership has produced a '[Criteria and Process for election of CIPM members](#)' document which has been endorsed by the CIPM, and by the membership of the *ad hoc* Working Group on the Role, Mission, Objectives, Long-Term Financial Stability, Strategic Direction and Governance of the BIPM. The document was shared with Representatives of Member States and NMI Directors at their meeting on 23-24 October 2013 and was placed on the BIPM website on 17 January 2014. The Criteria and Process developed by the *ad hoc* Working Group forms the basis of Draft Recommendation B, which is for consideration at this meeting. In anticipation that Draft Recommendation B, or some variant thereof, will be approved by the 25th CGPM all current members of the CIPM have tendered their resignations from the CIPM with effect from the opening of Session I of the 104th meeting of the CIPM (scheduled for March 2015) in order to allow implementation of the revised rules and procedures.

8. Duration of the General Conference

In response to concerns expressed at the 24th CGPM over the duration of General Conferences, the 25th CGPM has been scheduled over three days instead of the traditional five days. The aim is to cover the full agenda but with greater efficiency and shorter presentations in the interest minimizing costs and time commitments for all Member States and Associates as well as for the BIPM. A further innovation is that we have prepared posters covering the work of each of the Consultative Committees and the laboratories at the BIPM. They contain a great deal of information that I hope will be found interesting and informative.

9. Conclusion

A great deal has been achieved since the 24th CGPM with major changes to governance, accountability, strategic planning, the internal committee structure within the CIPM and the internal management structure and financial processes within the BIPM. These achievements required a great deal of effort on behalf of members of the CIPM and particularly on behalf of the BIPM staff. I believe that as a result of the changes made, the BIPM is in a much stronger position to face future challenges and to more effectively address the needs of Member States.

I take this opportunity to thank all members of the CIPM and all external members of its Sub-Committees, *ad hoc* Working Groups and Consultative Committees for their ongoing commitment and contribution over the past three years. I acknowledge and thank especially the BIPM Director and the BIPM staff for their untiring effort, commitment and dedication during what has been at times a difficult three years and without which the progress achieved would not have been possible.

Dr B.D. Inglis
President, CIPM

Appendix A

Recommendations and Decisions from Resolutions of the 24th General Conference on Weights and Measures

Resolution 1. On the possible future revision of the International System of Units, the SI

The General Conference on Weights and Measures (CGPM), at its 24th meeting, encourages

- researchers in national metrology institutes, the BIPM and academic institutions to continue their efforts and make known to the scientific community in general and to CODATA in particular, the outcome of their work relevant to the determination of the constants h , e , k , and N_A , and
- the BIPM to continue its work on relating the traceability of the prototypes it maintains to the international prototype of the kilogram, and in developing a pool of reference standards to facilitate the dissemination of the unit of mass when redefined,

invites

- CODATA to continue to provide adjusted values of the fundamental physical constants based on all relevant information available and to make the results known to the International Committee through its Consultative Committee for Units since these CODATA values and uncertainties will be those used for the revised SI,
- the CIPM to make a proposal for the revision of the SI as soon as the recommendations of Resolution 12 of the 23rd meeting of the General Conference are fulfilled, in particular the preparation of *mises en pratique* for the new definitions of the kilogram, ampere, kelvin and mole,
- the CIPM to continue its work towards improved formulations for the definitions of the SI base units in terms of fundamental constants, having as far as possible a more easily understandable description for users in general, consistent with scientific rigour and clarity,
- the CIPM, the Consultative Committees, the BIPM, the OIML and National Metrology Institutes significantly to increase their efforts to initiate awareness campaigns aimed at alerting user communities and the general public to the intention to redefine various units of the SI and to encourage consideration of the practical, technical, and legislative implications of such redefinitions, so that comments and contributions can be solicited from the wider scientific and user communities.

Resolution 2. On the importance of international collaboration so as to place measurements to monitor climate change on an SI traceable basis

The General Conference on Weights and Measures (CGPM), at its 24th meeting, recommends

- relevant bodies take steps to ensure that all measurements used to make observations which may be used for climate studies are made fully traceable to SI units,
- that any system agreed between Governments on carbon trading and capture includes a commitment to make relevant measurements traceable to the SI,
- that appropriate bodies support the development of techniques which can make possible a set of SI-traceable radiometric standards and instruments to allow such traceability to be established in terrestrial and space-based measurements,
- that NMIs continue to develop techniques and measurement systems that would enable biofuel processes and carbon sequestration to be modelled and monitored in an SI traceable and internationally equivalent way,
- that Governments and relevant intergovernmental organizations and international bodies commit themselves to adopt an internationally agreed and recognized system of measurement units and standards, and
- that the BIPM takes steps to contribute to the coordination of this activity with the full support of the States Parties to the Metre Convention.

Resolution 3. Dotation of the BIPM for the years 2013 to 2015

The General Conference on Weights and Measures (CGPM), at its 24th meeting, urges

- National Metrology Institutes to increase the number of staff seconded to the BIPM to work on projects of mutual interest integrated into the programme of work of the BIPM,
- States Parties, as well as international organizations, private organizations and foundations also to provide additional voluntary financial support of all kinds to support specific BIPM mission-related activities,

decides that the annual dotation of the BIPM, as defined in Article 6, 1921, of the Regulations annexed to the Metre Convention, will be increased in such a way that, for those States that are Parties to the Metre Convention at the time of the 24th meeting of the CGPM, it shall be:

11 577 000 euros in 2013

11 693 000 euros in 2014

11 810 000 euros in 2015.

Resolution 4. On the status of Associate State of the General Conference

The General Conference on Weights and Measures (CGPM), at its 24th meeting, decides that

- during an initial 5-year period following the accession to the status of Associate of the CGPM, Associate States shall pay an annual subscription determined from their contributions to the United Nations Organisation, as for States Parties to the Metre Convention, with a minimum equal to 0.1 % of the annual *dotation* of the BIPM,
- this decision will be applicable to current Associate States for the calculation of their subscription starting for the year 2013,
- after the above-mentioned initial 5-year period, if the CIPM considers, on the basis of the criteria it adopted, that it would be appropriate for an Associate State to become a State Party to the Metre Convention, the amount of subscription for such an Associate will be progressively and irreversibly increased each year so that it reaches, in five years, an amount equivalent to 90 % of the annual contribution it would pay as a State Party to the Metre Convention,
- this progressive and irreversible increase will be applicable starting on the 1st January of the second year following the CIPM decision to encourage an Associate State to become a State Party to the Metre Convention,
- the CIPM review of the situation of Associate States in 2011 will be used in application of the present Resolution and that the first increase of the subscriptions will become effective in 2013,
- such increase will not apply to Associate States whose annual subscription is already equal to the contribution they would pay as a State Party to the Metre Convention,
- as long as an Associate State does not fulfil the above-mentioned criteria to be encouraged to become a State Party to the Metre Convention, it will continue to benefit from the advantages of the Associate Status, as provided for in Resolution 3 adopted by the CGPM at its 21st meeting (1999), and from the BIPM services that the CIPM made available to them, and its subscription will continue to be determined as during the initial 5-year period,

invites

all Associate States, whether fulfilling or not the criteria adopted by the CIPM to encourage Associate States to become States Parties to the Metre Convention, to accede to the Metre Convention as such accession can only be beneficial for the strengthening of the world's measurement system.

Resolution 5. On the acceptance of Economies as Associate of the General Conference

The General Conference on Weights and Measures (CGPM), at its 24th meeting,
decides that

- the status of Associate Economy shall not be automatically acquired, but granted unanimously by the CGPM on a case by case basis,
- the decision of the CGPM to grant the status of Associate Economy shall be based on the following criteria:
 - an Associate Economy must be a Territorial Entity,
 - the Territorial Entity must possess its own Metrology Institute within its territory,
 - the participation of the Territorial Entity in the activities of the International Bureau of Weights and Measures (BIPM) must be considered beneficial for the strengthening of the world's measurement system,
- the annual subscription of such Associate Economies shall be determined by the CGPM,
- Intergovernmental Organizations are not considered as "Territorial Entities",
- CARICOM, the regional Intergovernmental Organization currently Associate Economy of the CGPM, having acceded to the status of Associate Economy of the CGPM prior to the adoption of the above-mentioned criteria, may continue to enjoy this status despite its not meeting the said criteria,

invites

- the Member States of CARICOM to accede to the Metre Convention or to become Associate States of the CGPM,
- the International Committee for Weights and Measures (CIPM) to consider further appropriate means by which intergovernmental organizations, in particular those from regions without well-developed metrology infrastructure, can be involved in the work of the BIPM and to bring forward proposals to the next meeting of the CGPM on how this can best be achieved.

Resolution 6. On financial arrears of States Parties to the Metre Convention

The General Conference on Weights and Measures (CGPM), at its 24th meeting,
decides

- for States Parties in arrears for more than 6 years to grant a period of 12 months from the date of adoption of the present Resolution to conclude with the International Committee for Weights and Measures (CIPM) a rescheduling agreement,
- that if a rescheduling agreement is not concluded within 12 months, those States will automatically be excluded, and the CIPM will inform in writing the French Ministry of Foreign and European Affairs for notification to this effect to those States and to all States Parties to the Metre Convention on behalf of the CGPM, and
- that the calculation of contributions is re-established in accordance with the applicable provisions in the most immediate calendar year after exclusion.

Resolution 7. On rescheduling agreements between the International Committee for Weights and Measures and defaulting States Parties to the Metre Convention for the payment of their financial arrears

The General Conference on Weights and Measures (CGPM), at its 24th meeting,

decides that

- when a State Party to the Metre Convention has not paid its contribution for six years, but if the CIPM has entered into a rescheduling agreement with that defaulting State, the arrears shall be settled in accordance with the rescheduling agreement together with the payment of the annual contribution,
- the defaulting State shall again benefit from the advantages and prerogatives conferred by accession to the Metre Convention after the CIPM has entered into a rescheduling agreement with that defaulting State and on payment of the first settlement pursuant to the rescheduling agreement,
- the annual contribution of the defaulting State shall no longer be distributed among the other States Parties to the Metre Convention starting from the year following the entry into force of the rescheduling agreement,
- the advantages and prerogatives conferred by accession to the Metre Convention shall be suspended in the case that the defaulting State breaches the rescheduling agreement and its contribution be distributed among the other States Parties to the Metre Convention by applying the provisions of Article 6 paragraph 6 of the Regulations annexed to the Metre Convention,
- if the State breaches the rescheduling agreement for more than 12 months, it will be automatically excluded.

Resolution 8. On the revision of the *mise en pratique* of the metre and the development of new optical frequency standards

The General Conference on Weight and Measures (CGPM), at its 24th meeting,

recommends that

- NMIs commit resources to the development of optical frequency standards and their comparison,
- the BIPM supports the coordination of an international project with the participation of NMIs, oriented to the study of the techniques which could serve to compare optical frequency standards.

Resolution 9. On the adoption of a common terrestrial reference system

The General Conference on Weights and Measures (CGPM), at its 24th meeting,

recommends that the ITRS, as defined by the International Union of Geodesy and Geophysics (IUGG) and realized by the International Earth Rotation and Reference Systems Service (IERS), be adopted as the unique international reference system for terrestrial reference frames for all metrological applications.

Resolution 10. On the role, mission, objectives, long-term strategy and governance of the BIPM

The General Conference on Weights and Measures (CGPM), at its 24th meeting,

invites

- the CIPM to establish an *ad hoc* Working Group under the Chairmanship of the President of the CIPM, with representation from the CIPM, States Parties to the Metre Convention (with maximum, intermediary and minimum contributions) and NMIs, properly balanced to represent all regions, and the Director of the BIPM, charged with conducting a Review of the role, mission, objectives, long-term financial stability, strategic direction and governance of the BIPM,
- the *ad hoc* Working Group to present the findings of this Review to the CIPM, States Parties to the Metre Convention and NMI Directors in October 2012,
- the CIPM to formulate proposed actions on the basis of the findings of the *ad hoc* Working Group and implement those within its authority, subject to support from the representatives of States Parties to the Metre Convention and NMI Directors, during the 2013-2014 timeframe,
- the CIPM to report to the CGPM at its 25th meeting on recommendations from the Review of the *ad hoc* Working Group, actions consequently taken by the CIPM and proposals for additional actions that require the approval of the CGPM.