

A long-term strategy for the BIPM

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Bureau

◆ **International des**

◆ **Poids et**

◆ **Mesures**



Resolution 10 of the 24th CGPM (2011)

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

- ◆ 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.

Annex 1

Recommendation 1

- ◆ *Develop a compact and clear statement on the role, mission and objectives based on the original objectives set by the Metre Convention, but reinterpreted for the 21st Century:*
 - Draft statement: See draft statement in Annex, work in progress.

Worldwide uniformity of measurement for trade, science and society

The BIPM is an inter-governmental organization established by the Metre Convention.

It implements the decisions of States Parties to the Metre Convention.

The overall goal is to

- promote a uniform, coherent and high level International System of Units (SI) which will:
 - facilitate trade
 - improve quality of life and sustainability
 - support innovation

The unique international role of the BIPM is

- coordination of activities for the realization and improvement of a world-wide accepted measurement system delivering comparable measurement results
- representation of scientific, industrial and societal metrology in international forums, in particular in collaboration with other International Organizations and Bodies
- as an independent Inter-governmental Organization to provide a forum for all Member States to make decisions about a worldwide measurement system
- to provide the means for scientific exchange in metrology
- to undertake activities defined by Member States of the Metre Convention

This unique role is achieved by

- organization of scientific meetings to identify existing and future measurement needs in industry and society with regard to technological progress and grand challenges
- organizing comparisons and carrying-out calibrations on behalf of the Member States as agreed in the BIPM Programme of Work
- carrying-out – if nec
- technical services in

2012 Session II October

The vision and mission of the BIPM

approved by the CIPM in 2016

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

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

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

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

The objectives of the BIPM

approved by the CIPM 2016

- ◆ To represent the world-wide measurement community - aiming to maximize its impact.
 - liaison with relevant organizations and bodies in order to develop opportunities for the application of metrology to global challenges.
- ◆ To be a centre for scientific and technical collaboration between Member States providing capabilities for international measurement comparisons on a shared-cost basis.
 - coordination of international comparisons
 - Provision of appropriate reference standards for key international comparisons
- ◆ To be the coordinator of the world-wide measurement system ensuring it gives comparable, fit-for-purpose and internationally-accepted measurement results.
 - coordination between member states and RMOs
 - provision of technical services to support technical infrastructure

Priorities considered when planning the next work programme

1. To identify the highest-value activities required by the Member States

assembled and harmonized with CIPM and CC strategies, distinctive mission of the BIPM, requirements of different NMIs, priorities and efficiency of the outcomes

2. To review the technical work needed at the BIPM in physical metrology following the expected decision to redefine the base units of the SI

calibrations required by NMIs that will not have access to a primary realization

3. To balance the resources committed to the three strategic objectives (liaison, technical collaboration and coordination)

flexibility (donor-funded projects), accessibility (outsources, to all departments at the BIPM)

4. To develop a sustainable long-term financial plan for the operation of the BIPM enabling it to fulfil its mission to 2025

scenarios and options for decision at the 26th CGPM and discussions at subsequent meetings, financial stability, staff and infrastructure

Planning process

0. Vision, Mission and Objectives

Vision, Mission and Objectives of the BIPM reviewed and approved by the CIPM

○ — Oct 2016

Planning process

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Vision, Mission and Objectives of the BIPM
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○ — Oct 2016

1. CC strategy

review, comments
debate by NMI reps

**Consultative
Committee Strategies**
Reviewed and revised
where needed.

○ — June 2017

Planning process

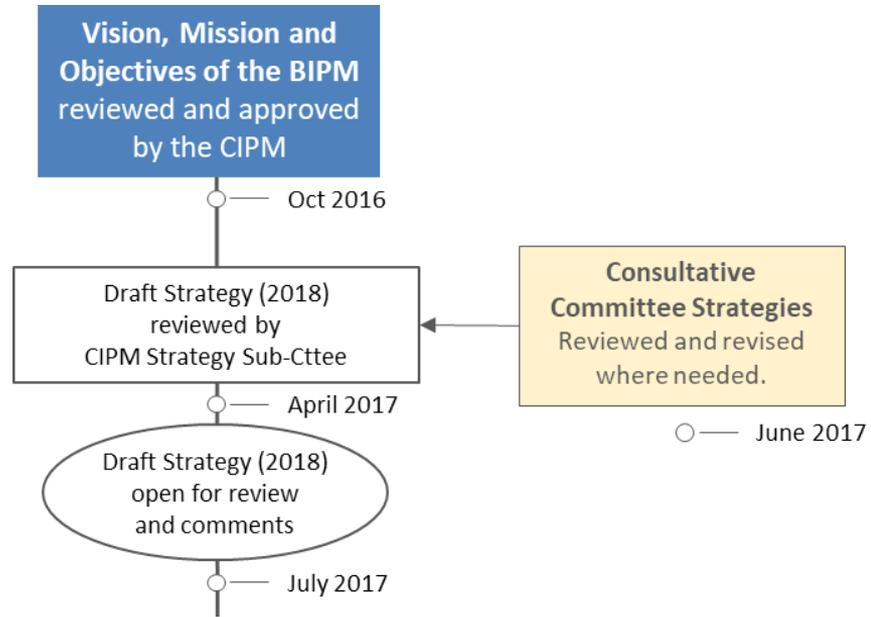
0. Vision, Mission and Objectives

1. CC strategy

review, comments
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2. CIPM document

Including BIPM laboratory programme
review, comments, debate by NMI reps



Planning process

0. Vision, Mission and Objectives

1. CC strategy

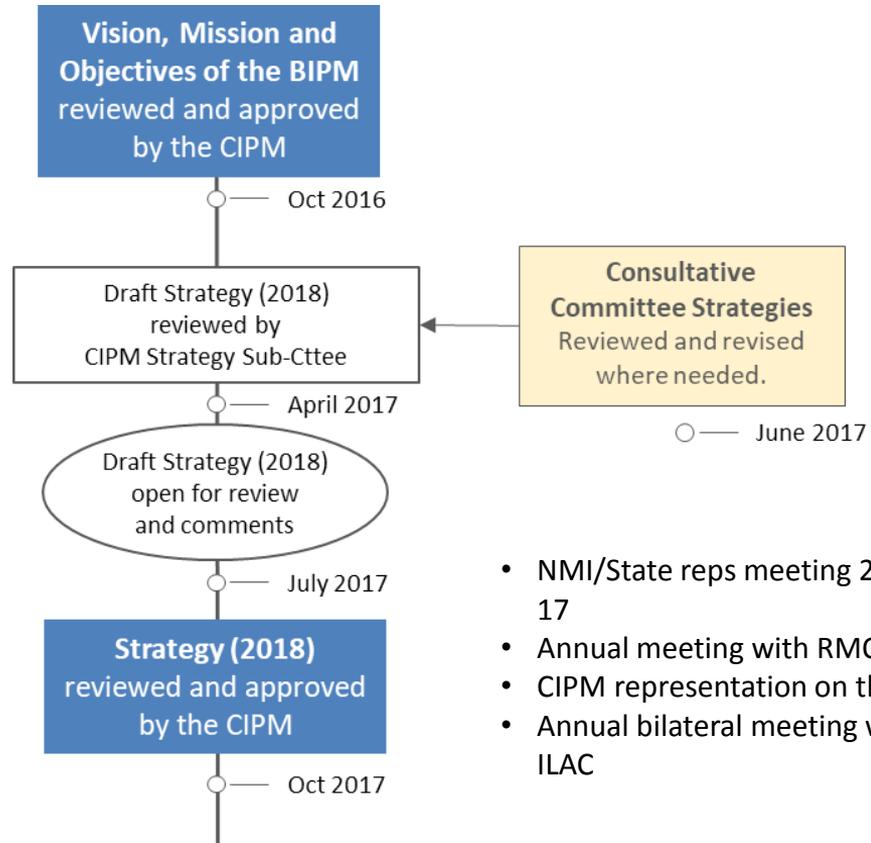
review, comments
debate by NMI reps

2. CIPM document

Including BIPM laboratory programme
review, comments, debate by NMI reps

3. Consensus strategy

Future vision
review, comments, debate by NMI reps
Scenarios and options



- NMI/State reps meeting 2015, 16, 17
- Annual meeting with RMO Chairs
- CIPM representation on the JCRB
- Annual bilateral meeting with OIML, ILAC

Strategic Plan (2018-2019)

and aspirations for the long term (to 2025)

Detailed strategic plans covers seven areas of activity that are addressed by the BIPM Work Programme, together with two underpinning areas

- *Seven areas for member benefits (4 scientific departments : Physical metrology, Time metrology, Chemical metrology, Ionizing radiation metrology, and knowledge transfer, liaison, coordination)*
- *Two areas that underpin BIPM activities (communication/promotion, human resources and infrastructure)*

| Physical Metrology | | |
|---|---|---|
| Detailed strategy | Plans (2018-2019) | Long Term (2020-2025) |
| To provide a long-term primary realization of the kilogram. | <i>To complete development of the BIPM Kibble balance with a relative uncertainty of 30 ppb or better (by end of 2019).</i> | <i>To implement the most accurate and efficient means of realizing and disseminating the kilogram.</i> |
| To coordinate comparisons of primary realizations held by NMIs to support the <i>mise en pratique</i> for the kilogram. | <i>To organize and coordinate a key comparison of primary realizations of the kilogram according to the proposed <i>mise en pratique</i> (following the CCM pilot study conducted before the redefinition).</i> | <i>To organize and coordinate an ongoing comparison of primary realizations of the kilogram according to the <i>mise en pratique</i>.</i> |
| To support the dissemination of mass traceability by providing calibrations of mass standards on request to NMIs. | <i>To optimize an ensemble of reference mass standards as a means of providing traceability for BIPM 1 kg calibrations</i> | <i>To maintain a robust ensemble of reference mass standards as a means of providing traceability for BIPM 1 kg calibrations (and</i> |

Highlights

of activities at the BIPM (2014-18)

- Launching new initiatives in capacity building and knowledge transfer
- Coordinating the processes that underpin the future world measurement system
- Expanding the impact of BIPM's role in international liaison
- Improving the efficiency of BIPM's global mutual recognition arrangements
- Engaging more effectively with States and Associates with “emerging metrology systems” (“micro-CEEMS”).

External trends

that will influence the priorities for the BIPM

Global drivers and trends surrounding metrology

- ◆ The demand for quantified and equivalent metrology globally will continue (trade, environment, health, safety, SDGs).
- ◆ The demand for a development of Quality Infrastructure will increase (underpinning industry).
- ◆ The capabilities of the RMOs will continue to broaden due to their size, background and resources (MRA, scientific programme, capacity building, open forum).
- ◆ The membership of the organization will be increased and the demand of NMIs will be broaden (mutual dialogue).
- ◆ A high priority should be set on metrology that addresses societal challenges and underpins the uptake of disruptive technologies (carbon measurement, biology, IoT, dynamic measurement, uncertainty etc.).

Strategic changes

in the work of the BIPM beyond 2024

International

- ◆ Working more closely with the OIML and other IOs.
- ◆ Greater requirements to support capacity-building activities in each of the regions and in their language of choice.

Governance and the CIPM

- ◆ Demands for enhanced support for the work of the CCs (and the CC Presidents).
- ◆ Greater support for specific initiatives defined by the CIPM.

Technical and scientific work

- ◆ A strategic reduction in the number of comparisons carried out, focusing only on those at the highest level and with the largest participation, or where there is some special reason for coordination by the BIPM laboratories.
- ◆ The need to contribute to the dialogue and associated shifts in the revision of the SI.
- ◆ Increased joint, multilateral programmes with member NMIs.

Support work

- ◆ An increasing demand for meetings to be hosted at the BIPM, support for visitors and secondees.
- ◆ Updated IT security, more rapid information dissemination via internet.

Summary

- ◆ The activities of the BIPM have been changed dynamically from its beginning to the present.
- ◆ Objectives and priorities of the BIPM are clearly described under the governance of the CIPM.
- ◆ The strategy was established transparently under the mutual dialogue with NMI directors and state representatives.
- ◆ Laboratory works at the BIPM are scrutinized to maximize its impact.
- ◆ Under the current programme, some new activities including CBKT are started. Challenges to secure governance are also started such as micro-CEEMS.
- ◆ Responding effectively to the trends (re-focusing capabilities of the BIPM, continuity, security) some additional resources are needed.

À tous les temps, à tous les peuples

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