A Long-Term Strategy for the BIPM

Dr Martin J T Milton
Developing our strategy

2012
Mission Role and Objectives
• Builds on historic mission of the BIPM and restates it for the present time.

2013
A Strategy for each CC
• Developed by each Consultative Committee

2014
Strategy 2016-2019
• Sets objectives for the BIPM that are addressed by the BIPM Work Programme 2016-2019

Long-term Strategy
• Developed and consultation started.
• Sets demanding “stretch” targets.
• Will continue to be reviewed and refined.

All strategy documents are openly available on www.bipm.org
Mission, Role and Objectives

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.
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The mission of the BIPM is to ensure and promote the global comparability of measurements, including providing a coherent international system of units for:

- Scientific discovery and innovation,
- Industrial manufacturing and international trade,
- Sustaining the quality of life and the global environment.
The objectives of the BIPM

- To establish and maintain appropriate reference standards for use as the basis of a limited number of key international comparisons at the highest level.

- To coordinate international comparisons of national measurement standards through the Consultative Committees of the CIPM; taking the role of coordinating laboratory for selected comparisons of the highest priority and undertaking the scientific work necessary to enable this to be done.

- To provide selected calibrations for Member States.

- To coordinate activities between the NMIs of Member States, such as through the CIPM MRA\(^1\), and to provide technical services to support them.

- To liaise as required with relevant intergovernmental organizations\(^2\) and other international bodies\(^3\) both directly and through joint committees\(^4\).

- To organize scientific meetings to identify future developments in the world-wide measurement system required to meet existing and future measurement needs in industry, science and society.

- To inform, through publications and meetings, the science community, the wider scientific public and decision makers on matters related to metrology and its benefits.
The **objectives** of the BIPM

1. To establish and maintain appropriate reference standards

2. To coordinate international comparisons.

3. To provide selected calibrations.

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**Technical coordination**

Bureau International des Poids et Mesures
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**Technical coordination**

**Supporting a global framework for coordination**
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| 6. To organize scientific meetings |
| 7. To inform through publications and meetings. |

**Technical coordination**

**Supporting a global framework for coordination**

**Communication and promotion**
Strategic Priorities for the short term (2013-2015)

**Ahead of plan**

- To identify and deliver the highest value activities required by the Member States
- To optimize cost efficiency in the operation of the BIPM whilst maintaining its mission
- To improve the dissemination of information and increase transparency
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**On plan**

- To increase the effectiveness of the coordination and liaison activities of the BIPM
- To develop the staffing and funding environment at the BIPM to make it a preferred place for: secondment from the NMIs and third parties to provide in-kind support.

**More to do**

- To respond to changing requirements whilst maintaining the unique role of the BIPM by addressing the staff mix and age distribution.
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- To improve the balance of engagement opportunities for all Member States within the Metre Convention.
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To provide a near to real-time UTC

to implement a new generation of compact and versatile quantum standards for on-site comparisons

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Setting the **long-term strategy** for projects in Chemistry and Ionizing Radiation

- The requirements in these fields are large – and growing quickly
- BIPM operates a small programme with modest resources.
  - Collaboration with the NMIs is particularly important.
- A rigorous criterion is set for all work in these fields:

> “To coordinate a limited number of key comparisons of measurands that require the
> - highest accuracies and stable long-term reference values
> - that exemplify the most important competencies in the field, and are
> - selected to address area of the greatest global importance”.
Setting the **long-term strategy** for projects in Chemistry and Ionizing Radiation

The thematic programme addresses grand challenges for metrology, new high-priority measurands are proposed in comparisons of:

- $\text{CO}_2$, $\text{CH}_4$, $\text{N}_2\text{O}$, $\text{HCHO}$, $\text{NO}_x$, $\text{O}_3$.  
- Small molecule organic primary calibrators (up to 1 kDa), as well as large molecule organic primary calibrators, both linear and cross-linked, (up to 10 kDa).
- A basic set of 10 ongoing comparisons for X-rays, mammography, radiotherapy and radioprotection quantities and qualities.
- (On demand) activity of more than 100 $\alpha$, $\beta$, and $\gamma$-radionuclides, demanded in nuclear medicine therapy and imaging, environmental survey and nuclear cycle applications.
- AND - a low-level activity comparisons programme for environmental reference materials.

www.bipm.org
Setting the **long-term strategy** for projects in Chemistry and Ionizing Radiation

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- radioactivity to underpin the world reference system for human health, environmental protection and nuclear energy applications.

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Summary of BIPM strategy development

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BIPM Strategy Process

The key elements of the process are now in place:

- Mission, Role and Objectives
  - refreshed and re-published
- Strategies for the Consultative Committees
  - substantial consultation process completed in 2013
- BIPM Strategy for 2013-2015
  - developed and reviewed
- BIPM Long-term strategy
  - We are proposing some targets that are very challenging
  - Open for discussion