Bureau International des Poids et Mesures

BIPM Strategic Plan (2018)

Revision history

	Agreed by the CIPM at their 106th meeting.	20/10/2017
v6	Open for comment on BIPM website	01/08/2017
v5	Commented on by the CIPM	20/06/2017
v4	Commented on by the CIPM Strategy Sub-Cttee	02/05/2017
v3.1	Commented on by the Presidents of CCM, CCEM, CCRI, CCT&F, CCQM.	06/04/2017
v3.0	Edited following “Away Day” of BIPM Management Team	28/03/2017
v1 & v2	Developed and reviewed with Presidents of CCM, CCEM, CCRI, CCT&F, CCQM.	

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EXECUTIVE SUMMARY

This strategy sets the high-level objectives and strategic perspective for the BIPM and has been agreed by the CIPM at its 106th Meeting (2017).

It presents a strategy for the long term as far as 2025 and plans for the short term (2018-2019) that are extracted from the current Work Programme.

The agreement of this strategy by the CIPM enables the development of proposals for the BIPM Work Programme for the years 2020 to 2023 for decision at the 26th CGPM in 2018.

Some key priorities were identified for the development of this strategy that respond to current pressures facing the BIPM. These included identifying the highest-impact activities for the BIPM whilst also reviewing the technical work needed following the expected re-definition of the base units of the SI. Also the balance of resources between changing priorities is considered whilst also considering the need for a sustainable long-term financial plan.

This strategy was developed in consultation with the CIPM to be consistent with the Vision, Mission and Objectives that were approved by the CIPM at its 105th Meeting in 2016.

THE VISION AND MISSION OF THE BIPM[1]

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.

[1] The statement of the VISION AND MISSION OF THE BIPM was approved by the CIPM at its 105th Meeting (2016).

THE OBJECTIVES OF THE BIPM[2]

- **To represent the world-wide measurement community - aiming to maximize its impact.**
  - We liaise with relevant intergovernmental organizations and other international 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.**
  - We coordinate international comparisons of national measurement standards agreed to be of the highest priority.
  - We establish and maintain appropriate reference standards for use as the basis of key international comparisons at the highest level and provide selected calibrations from them.
- **To be the coordinator of the world-wide measurement system ensuring it gives comparable, fit-for-purpose and internationally-accepted measurement results.**
  - We coordinate activities between the NMIs of Member States and the RMOs, including the provision of technical services to support the CIPM MRA and the infrastructure for the development and promotion of the SI.

Fulfilling our mission and objectives is underpinned by our work in:

- **capacity building**, which aims to achieve a global balance between the metrology capabilities in Member States.
- **knowledge transfer**, which ensures that our work has the greatest impact.

[2] The statement of the OBJECTIVES OF THE BIPM was approved by the CIPM at its 105th Meeting (2016).

Priorities for the development of this strategic plan

The BIPM Strategy published in 2014 set out priorities for the strategic planning process, which was prepared for the 25th CGPM (2014).

The strategic plan presented here has been prepared for the 26th CGPM (2018). The development of this plan reflects established practice and also addresses new challenges facing the BIPM, which are:

1. **To identify the highest-value activities required by the Member States by**
   - operating a Consolidated Planning Process that assembles views from the NMIs, the CIPM and the CC strategies.
   - developing a work programme that recognizes the distinctive nature of the BIPM's role.
   - recognizing the differing requirements of different NMIs.
   - describing activities in sufficient detail to facilitate planning and monitoring of the outcomes of projects.

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 at the 26th CGPM (2018), noting**
   - that the dissemination of mass calibrations will continue to be required by NMIs that will not have access to a primary realization.
   - the continuing need to support the dissemination of standards for electrical quantities.

3. **To balance the resources committed to the three strategic objectives (liaison, technical collaboration and coordination) with the capacity building and knowledge transfer activities, whilst taking account of**
   - the need for greater flexibility in the BIPM funding model in order to take advantage of donor-funded projects.
   - opportunities to outsource access to facilities where feasible and beneficial.
   - the need for all departments at the BIPM to be involved in knowledge transfer and capacity-building activities.

4. **To develop a sustainable long-term financial plan for the operation of the BIPM enabling it to fulfil its mission to 2025 by**
   - providing plausible scenarios for decision at the 26th CGPM (2018) that avoid or minimize additional financial obligations that would need to be considered at subsequent meetings of the CGPM.

- planning for improved financial controls, using independent expert actuarial and financial advice.
- anticipating the need to recruit and retain staff and exploit existing infrastructure.
- agreeing a mechanism for dialogue with Member States regarding the long-term financial sustainability of the BIPM beyond 2025.

Detailed Strategic Plans for the short term (2018-2019) and aspirations for the long term.

The detailed strategic plans address seven areas that are driven by the BIPM Work Programme, together with two underpinning areas:

- Physical metrology
- Time metrology
- Chemical metrology
- Ionizing radiation metrology
- Capacity building and knowledge transfer
- Liaison
- Coordination
- Communication and promotion
- People and infrastructure

The detailed strategy is presented for each area, together with the plans proposed for the short term (2018-2019) and the BIPM's aspirations for the long term (2020-2025). (The plans for 2018 and 2019 are highlights extracted from the detailed Work Programme for 2016-2019 which was approved at the 25th CGPM (2014)).

This document is complementary to the strategic plans developed by each of the Consultative Committees of the CIPM.

Physical Metrology		
Detailed strategy	**Plans (2018-2019)**	**Long Term (2020-2025)**
To provide a long-term primary realization of the kilogram.	*To complete development of the BIPM Kibble balance with a relative uncertainty of 30 ppb or better (by end of 2019).*	*To implement the most accurate and efficient means of realizing and disseminating the kilogram.*
To coordinate comparisons of primary realizations held by NMIs to support the *mise en pratique* for the kilogram.	*To organize and coordinate a key comparison of primary realizations of the kilogram according to the proposed mise en pratique (following the CCM pilot study conducted before the redefinition).*	*To organize and coordinate an ongoing comparison of primary realizations of the kilogram according to the mise en pratique.*
To support the dissemination of mass traceability by providing calibrations of mass standards on request to NMIs.	*To optimize an ensemble of reference mass standards as a means of providing traceability for BIPM 1 kg calibrations with the highest possible accuracy.*	*To maintain a robust ensemble of reference mass standards as a means of providing traceability for BIPM 1 kg calibrations (and as reference for an ongoing comparison of primary realizations).*
To develop and provide on-site comparisons using travelling quantum electrical standards.	*To continue the programme of on-site comparisons of electrical quantum standards and to increase support for the CCEM comparison programme.*	*To develop and implement a new generation of efficient and more versatile quantum standards for use in comparisons on-site and hosted at the BIPM.*
To support the *mise en pratique* of the electrical units.	*To determine R_K with uncertainty below 1 part in 10^8 using the calculable capacitor and the ac quantum Hall effect.*	
To exploit facilities at the BIPM by providing the highest-priority calibrations for electrical quantities requested by NMIs.	*To maintain a portfolio of calibration services that exploit past investments in BIPM capabilities for the benefit of all NMIs.*	*To ensure long-term sustainability of a portfolio of calibration services for voltage, resistance and capacitance.*

Time Metrology		
Detailed strategy	**Plans (2018-2019)**	**Long Term (2020-2025)**
To calculate, disseminate and improve the world reference time scale through integrating data from atomic clocks at the NMIs.	*To continue improving the world reference time scale through the integration of new independent time transfer techniques and refined algorithms.* *To integrate all Global Navigation Satellite Systems (GNSS) into a combined-link solution for clock comparison in UTC.*	*To support the needs of the global time community by providing UTC of sufficient accuracy to progress the state of the art.*
To investigate the scope for a 100-fold improvement in frequency accuracy through a future redefinition of the second and of time-keeping based on optical clocks.	*To study and support the implementation of novel time and frequency transfer techniques for the comparison of highly accurate optical standards to improve the definition/realization of TAI.* *To access the results of the Atomic Clock Ensemble in Space (ACES) experiment in order to exploit the future application of the microwave link for time and frequency transfer.*	*To coordinate and support a redefinition of the second based on optical transitions.* *To adapt the infrastructure for time scale maintenance and dissemination to the new definition of the second.*
To promote the importance and benefits to the international telecommunications, astronomy and earth science communities of: UTC, – frequency measurements traceable to the SI and – common space-time references.	*To pursue and enhance interaction with national and international organizations and user communities with the aim of providing a set of consistent space-time references traceable to the SI.*	*To provide the unique, continuous time scale for world time coordination.*

Chemical Metrology - to promote and develop the use of SI traceable standards and measurements for chemistry and biochemistry.		
Detailed strategy	**Plans (2018-2019)**	**Long Term (2020-2025)**
To provide and coordinate comparisons of national measurement standards for: – **greenhouse gases**, demonstrating consistency at levels required to support national energy and environmental priorities; – **major air quality gases**, demonstrating consistency at levels required to support national health and environmental priorities.	*To coordinate comparison of standards of:* • *carbon dioxide and nitrous oxide in air, with uncertainties congruent with global and urban monitoring requirements;* • *surface ozone for accurate air quality monitoring;* • *nitrogen dioxide to support national air quality and emission policies.*	• *To provide the suite of highest-priority comparisons of standard gas mixtures addressing global energy and environmental priorities.* • *To improve the state of the art for measurements of greenhouse gases (for example through the improvement of methods providing traceability for isotope-ratio measurements).*
To provide the basis for metrological traceability for organic and biochemical measurements by coordinating comparisons of primary reference materials for: – **small organic molecules**, demonstrating consistency at levels required to support reference measurement systems for laboratory medicine, food safety, forensics, environmental analysis and pharma. – **peptides and large organic molecules**, demonstrating consistency at levels required to support reference measurement systems for laboratory medicine and health care sectors.	*To demonstrate the degree of comparability of national capabilities for value assigning standards of:* • *small molecule non-polar organics (Bisphenol A – an endocrine disruptor);* • *short single-cross linked peptides (Oxytocin - a therapeutic peptide);* • *short modified peptides (glycated haemoglobin hexapeptide - a diabetes control marker).* *To provide reference data on internal standards for qNMR, supporting NMI measurement services.*	• *To identify and provide the suite of comparisons for large and small molecule calibrators of the highest global importance.* • *To improve the state of the art for organic and biochemical purity determination (for example through development of qNMR as a direct assay method).*
To promote and develop the use of SI traceable standards and measurements (available from the NMIs) with inter-governmental stakeholders.	• *Publish guidance on the traceability to conventional scales and the SI of greenhouse gas measurements with the WMO.* • *Develop the JCTLM website (with the IFCC) to promote improved understanding of metrological traceability in clinical diagnosis.* • *Implement recommendations of the BIPM – WADA workshop on metrology for anti-doping analysis.*	• *To increase participation in the CIPM MRA and uptake of NMI measurement services by International Organizations with laboratory networks active in chemical and biochemical measurement.* • *To extend the JCTLM database to include standards for biologicals.* • *To develop comparisons and consensus on accuracy and scope of standards needed to underpin data quality objectives for global monitoring.*

Ionizing Radiation Metrology		
Detailed strategy	**Plans (2018-2019)**	**Long Term (2020-2025)**
To rationalize the division of activities between the BIPM IR programme, the NMIs and the IAEA.	*to optimize the IR programme by taking advantage of the increased representation of NMIs at the reconstituted CCRI, and considering* • *moving towards a model using external facilities for high cost systems such as accelerator dosimetry, high-activity ^{60}Co, ^{192}Ir sources, etc.,* • *developing consensus on sharing responsibilities with the IAEA in support of secondary standards dosimetry laboratories (SSDLs)*	• *To improve the impact and efficiency of the IR programme whilst minimizing financial obligations to member states, and/or to reduce some BIPM obligations.*
To demonstrate the equivalence of national standards for dosimetry of x-rays, γ-rays and high-energy accelerator beams, in support of radio-diagnostic, radio-therapy and radio-protection applications.	• *Provide three ongoing comparisons for air kerma in low-, medium-energy and mammography x-ray quantities,* • *Provide four ongoing comparisons for air kerma and absorbed dose to water in radiotherapy ^{60}Co beams, air kerma in radioprotection ^{137}Cs beams and off-site for reference air kerma in HDR ^{192}Ir beams.* • *Implement a new standard and to run a new ongoing comparison of absorbed-dose to water in medium-energy x-rays.* • *Implement the ongoing comparison for high-energy photon beams at the DOSEO linear accelerator facility (Saclay) and set up a calibration service of national secondary standards.* • *Replace the HV generator for low-energy x-rays and investigate whether to replace or outsource the ^{60}Co beam.*	• *To provide high-stability reference systems for a new comparison or traceability needs of X- and γ-rays (making use of outsourced facilities where appropriate).* • *To develop a primary standard for ^{192}Ir brachytherapy.* • *To develop a calorimeter standard to provide equivalence and traceability for absorbed dose in high-energy electron beams.*
To demonstrate and improve the equivalence of national standards for short-lived α-, β- and γ-emitters, in support of nuclear medicine, environmental monitoring and nuclear cycle applications.	• *Operate the SIR facility for ongoing comparisons of more than 65 γ emitters and the SIR Transfer Instrument for ongoing, off-site comparisons for ^{99m}Tc, ^{18}F, ^{64}Cu and extend it to ^{11}C, ^{68}Ge.* • *Extend the SIR to four new β emitters by liquid scintillation techniques and to study the extension to five new α emitters* • *Operate the coincidence counting ($4\pi\beta$-γ and TDCR) primary methods and organize the ^{109}Cd key comparison in 2018.* • *Set up the low-level reference instruments for α, β and γ emitters: procurement and characterization of a 4π-γ NaI(Tl) well-type detector, for low-level activity measurements.* • *Improve the robustness of SIR measurements for radioactive gases, study the feasibility of electronic alternatives to ^{226}Ra sources and the possible contribution of natural ^{222}Rn emanation.*	• *To reduce the number of large-scale comparisons for α, β and γ emitters following the CCRI Methods Matrix (MMM) strategy and the extensions of SIR.* • *To implement a low-level radionuclide activity comparisons programme for environmental reference materials (Naturally Occurring Radioactive Materials- nuclear cycle).* • *To improve permanently the KCRVs for insufficiently characterized radionuclides.*

Capacity Building and Knowledge Transfer		
Detailed strategy	**Plans (2018-2019)**	**Long Term (2020-2025)**
Capacity Building and Knowledge Transfer – to improve the balance of engagement and opportunities across all Member States when participating in the activities of the Metre Convention by: – assisting in building the capacity amongst NMIs with emerging measurement systems to enable their deeper engagement with the world-wide system. – working to support the NMIs and the RMOs in fulfilling their commitments to the world-wide measurement system.		
To reinforce the international metrology system and to "balance the load" amongst the NMIs. To promote efficient operation of the system.	*To partner with the RMOs to provide capacity building and focused training opportunities.* *To deliver at least one training or capacity building opportunity focused on the needs of each RMO.*	*To work towards a long-term integrated "training platform" shared between the BIPM and the RMOs.*
To aid NMIs from Countries and Economies with Emerging Metrology Systems (CEEMS) to engage appropriately and effectively with the international measurement system.	*To develop and coordinate comparisons in metrology for "safe food" and "clean air" by 2019 aiming to develop capability of particular interest to Member States that are developing countries.* *To seek support for, and deliver, training to CEEMS that are seeking to make "Right first time" CMC submissions.*	*To develop and coordinate capacity building comparisons and knowledge-transfer activities in all areas of the BIPM laboratories and other high-priority areas defined in partnership with the RMOs.*
To sustain the BIPM's activities in capacity building.	*To develop a portfolio of capacity building opportunities based on 100 %, 50 % or 0 % co-funding by partners.*	*To agree and implement a new sustainable funding model for capacity building activities.*
To sustain a programme for visiting/seconded scientists to (and from) the BIPM.	*To promote a timetable of opportunities for visiting scientists to take part in the work of all of the BIPM laboratories.*	

<table>
<tr><th colspan="3">Liaison - to foster cooperation with international organizations and to promote the world-wide comparability of measurement.</th></tr>
<tr><th>Detailed strategy</th><th>Plans (2018-2019)</th><th>Long Term (2020-2025)</th></tr>
<tr><td>To increase participation by International Organizations in technical coordination activities at the BIPM, including CCs and their working groups, and to achieve greater recognition by IOs of the value of SI traceable measurements.</td><td colspan="2">To implement a “portfolio” approach to liaison activities:
– Maintaining a balanced evaluation and prioritization process for existing liaison and coordination activities (recognizing resource limitations and that institutional and “door opening” roles differ).
– Evaluating and responding to opportunities for new liaison and coordination initiatives.

To establish staff exchange opportunities to and from key International Organizations.

To develop sustained links with inter alia the World Bank and the OECD.</td></tr>
<tr><td rowspan="2">To promote the importance of the global comparability of measurements with international organizations of strategic importance to the BIPM mission (including the OIML, ILAC, ISO, WTO-TBT) and to work with them and others through Joint Committees.</td><td colspan="2">To work towards better coordination and recognition of “Quality Infrastructure” (QI) and the central role of metrology within it amongst IOs and their stakeholders.</td></tr>
<tr><td>To review the relevance and impact of all MoUs and joint documents with International Organizations.

To develop a portfolio of papers representing the position of the CIPM on issues of shared interest (for example the review of ISO/IEC 17025/34, the VIM, DCMAS etc).

To participate with the OIML in the review of document OIML-D-01.</td><td>To commission an independent study to benchmark the impact arising from metrology in QI.

To implement a strategy of shared representation with partner organizations.</td></tr>
<tr><td>To increase opportunities for Member States with emerging measurement systems, encouraging “prospective Member States” to make the transition from Associate to Member State.</td><td>To develop a consensus (for discussion at the 26th CGPM) on how to address the needs of Countries and Economies with Emerging Measurement Systems (CEEMS). Exploiting synergy with the OIML where possible.</td><td>To implement a new approach (reflecting the views of Member States at the 26th CGPM (2018)).</td></tr>
</table>

Coordination - to be the coordinator of the world-wide measurement system ensuring it gives comparable, fit-for-purpose and internationally-accepted measurement results.		
Detailed strategy	**Plans (2018-2019)**	**Long Term (2020-2025)**
To develop a role for BIPM as the gateway to data and data-related services held by the international metrology community.	*To implement and promote the International Metrology Resource Registry (IMRR) on the BIPM website.* *To support the development of the "big data" agenda for metrology by, for example, opening a secondment opportunity for a specialist and holding a workshop.*	*To identify and deliver the highest impact opportunities to support NMI priorities in, for example, the areas of "big data" and digital transformation.* *To review with the CIPM the scope for further BIPM engagement*
To improve and promote the mutual recognition of national measurement standards and of calibration and measurement certificates (CMCs) issued by NMIs (the CIPM MRA), particularly by operation of the KCDB and supporting the JCRB. To support *in vitro* diagnostic measurements world-wide by providing a database of available higher-order reference materials, methods and services that can be used to establish metrological traceability	*To implement the results of the CIPM MRA review, published in 2016, leading to streamlined operation of the CIPM MRA and a new database (KCDB 2.0) and addressing the needs for better tools for users.* *To continue to attract nominations for entry into the JCTLM database and increase understanding on metrological traceability within the laboratory medicine community.*	*To provide cost-effective IT facilities to support the CIPM MRA and to ensure the widest possible uptake of the KCDB.* *To work with all relevant stakeholders to maintain the JCTLM database as a global resource for laboratory medicine.*
To liaise with the NMIs of Member States and the Regional Metrology Organizations (RMOs).	*To work with the "Panel of NMI Directors" to organize an annual meeting at the BIPM. To convene annual meetings of RMOs to support the development of a global perspective on key issues.* *To build best practice where possible on the experience of the RMOs, particularly in the support of states with emerging measurement systems.* *To continue open and transparent communication with stakeholder communities including NMI Directors and Representatives of the Member States.*	

<table>
<tr><th colspan="3">Communication and Promotion</th></tr>
<tr><th>Detailed strategy</th><th>Plans (2018-2019)</th><th>Long Term (2020-2025)</th></tr>
<tr><td rowspan="2">To communicate effectively (with Member States, potential new Member States and other key stakeholders) about the Metre Convention, the SI and the expected revisions to the SI.</td><td colspan="2">To extend the “open access” policy for BIPM and CC documents – with a target of 95 % BIPM open access by 2019.</td></tr>
<tr><td>To support the unique opportunity to promote metrology provided by the proposed changes to the SI by:
supporting NMIs through the provision of accurate and informative materials,
responding directly to enquiries from IOs and other stakeholders outside the metrology community.</td><td>To build on the success of World Metrology Day, doubling participation through all media by 2022.</td></tr>
<tr><td>To inform the science community, the wider scientific public and decision makers on matters related to metrology and its benefits through publications and meetings.</td><td>To increase the scope and depth of communication from BIPM (by, for example, recruiting a communications specialist).

To broaden the reach and impact of Metrologia by attracting submission of metrological papers from disciplines that have not historically looked to publish in Metrologia.</td><td>To ensure the success of Metrologia as the key scientific publication for high level metrology.
To increase the number of annual issues from 6 to 10 and to monitor the move towards “open access” for journals.
To support the NMI community in promoting access to the world-wide resource on metrology “good practice”.
To identify (with the CIPM) topics of importance to the metrology community to be addressed at BIPM Workshops.</td></tr>
<tr><td>To aim for the BIPM website to be the portal of choice for all stakeholders seeking information on world-wide metrology.</td><td>To improve the functionality and effectiveness of the BIPM website by progressing to the next generation of content management system.</td><td>To adapt effectively to the rapidly changing world of electronic media to ensure that the website continues to deliver services effectively and portrays an up-to-date image of the BIPM.</td></tr>
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People - to support the ethos and working practices of an international organization.		
Detailed strategy	**Plans (2018-2019)**	**Long Term (2020-2025)**
To follow "best practice" in staff training and development.	*To strengthen the annual performance review system (based on identified accountabilities and competencies) as a basis for career and salary progression.* *To develop succession plans for all critical posts (including support and finance staff).*	
To increase the skill mix and experience available at the BIPM.	*To increase opportunities for BIPM staff to be seconded to NMIs.*	
To develop and implement best practice in the support of the Consultative Committees and Joint Committees through the provision of Executive Secretaries.	*To improve the effectiveness of the CCs by strengthening common practice across them.*	*To continue to adapt to the evolving landscape, and provide qualified and experienced staff from the BIPM to meet the needs of CCs.*
Infrastructure - to provide necessary support functions in the most efficient way, whilst respecting the unique challenges of the BIPM as an international organization.		
Detailed strategy	**Plans (2018-2019)**	**Long Term (2020-2025)**
To develop the laboratory environment to sustain the BIPM Work Programme.	*To complete the upgrade of facilities in the Observatoire and Marie Curie Buildings.*	*To review the use of and renovate where necessary the "Laser building" and "Nouveau Observatoire".*
To ensure that the BIPM meeting facilities which support the CCs and WGs continue to be "best in class".	*To host all CC and WG meetings on the BIPM with use of nearby conference locations where necessary.*	*To provide electronic access to all key meetings when required.*
To develop the BIPM IT infrastructure to support its mission.	*To implement efficient technology for document sharing.* *To implement "best practice" in IT security (as evaluated by an independent external audit).*	*To plan and implement a replacement of the IT infrastructure in 2022 (using cloud technology if appropriate).*
To maintain the heritage buildings and estate at a level consistent with the mission of the BIPM.	*To develop and implement a plan for maintenance and use of heritage buildings and grounds.*	

Acronyms

ACES	Atomic Clock Ensemble in Space
BIPM	International Bureau of Weights and Measures
CC	Consultative Committee
CCEM	Consultative Committee for Electricity and Magnetism
CCM	Consultative Committee for Mass and Related Quantities
CCRI	Consultative Committee for Ionizing Radiation
CEEMS	Countries and Economies with Emerging Metrology Systems
CGPM	General Conference on Weights and Measures
CIPM MRA	CIPM Mutual Recognition Arrangement
CIPM	International Committee for Weights and Measures
CMC	Calibration and Measurement Capabilities
GNSS	Global Navigation Satellite Systems
HDR	High dose rate
IAEA	International Atomic Energy Agency
IEC	International Electrotechnical Commission
ILAC	International Laboratory Accreditation Cooperation
IOs	International Organizations
IR	Ionizing radiation
ISO	International Organization for Standardization
IT	Information Technology
JCRB	Joint Committee of the Regional Metrology Organizations and the BIPM
JCTLM	Joint Committee for Traceability in Laboratory Medicine
KCDB	BIPM key comparison database
KCRV	Key comparison reference value
LDR	Low dose rate
mep	*mise en pratique*
MMM	Measurements Method Matrix
MoU	Memorandum of understanding
NMI	National Metrology Institute
NMR	Nuclear Magnetic Resonance

OIML	International Organization of Legal Metrology
QI	Quality Infrastructure
RMO	Regional Metrology Organization
SI	International System of Units
SIR	International Reference System
SIRTI	Transfer Instrument of the International Reference System
SSDL	Secondary standards dosimetry laboratories
TDCR	Triple to Double Coincidence Ratio
UTC	Coordinated Universal Time
WADA	World Anti-Doping Agency
WHO	World Health Organization
WMO	World Meteorological Organization
WTO-TBT	World Trade Organization – Technical Barriers to Trade