



## Snapshots of IO Practices

### BIPM Capacity Building and Knowledge Transfer (CBKT) Programme

#### Organisation(s): Bureau International des Poids et Mesures (BIPM)

*The Snapshots of IO Practices present examples of specific efforts undertaken by an international organisation to work towards more effective international instruments. They aim to highlight examples of practices within the five focus areas of the Partnership of International Organisations for Effective International Rulemaking (IO Partnership), namely the variety and development of international instruments, their implementation, evaluation, ensuring stakeholder engagement, and co-ordination among IOs. The snapshots are submitted by the secretariats of the relevant international organisations implementing the relevant practice. The practices were compiled by the OECD Secretariat and focal points of the IO Partnership (UNCITRAL, OIE, WHO, ISO, WCO, BIPM, and SIECA), with a brief review to ensure consistency and comparability of the information provided within the snapshots. The inclusion of a practice in these snapshots implies no endorsement or assessment of that practice on the part of the OECD Secretariat or the focal points of the IO Partnership.*

1	Overview of the Practice	Answers	Comments and intersections
1.1	Organisation	International Bureau of Weights and Measures (BIPM)	
1.2	Area of relevance among the IO partnership focus themes (variety of instruments, implementation, stakeholder engagement, evaluation, co-ordination).	Implementation of instruments (assistance mechanism)	
1.3	Name of the Practice	BIPM Capacity Building and Knowledge Transfer (CBKT) Programme	
1.4	Name of person(s) completing the template	Andrew Henson Rahima Guliyeva Chingis Kuanbayev	

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2	Description of the Practice	Answers	Comments and intersections
2.1	Please describe the practice shortly, providing information on its core features.	<p>The BIPM CBKT Programme refers to activities co-ordinated specifically by the BIPM to help the world-wide metrology community obtain, strengthen and maintain the capabilities needed to fulfil its missions and objectives. The aim is to increase the effectiveness with which Member States and Associates engage in the world-wide co-ordinated metrological system.</p> <p>Participation in principle is open to all National Metrology Institutes (NMIs) and Designated Institutes (DIs) (institutions and staff) of the Member States and Associates. They can participate either as beneficiaries to learn from, or as sponsoring/supporting organisations to contribute to the delivery of the CBKT initiatives.</p> <p>In very specific cases, there may be limited initiatives aimed at those States and economies which are not yet Member States or Associates, but are seriously considering such engagement.</p> <p>The CBKT Programme remains flexible and accommodates various ideas/topics covering the needs of the NMI community, provided that they align with the aims of the programme. The CBKT Programme is described as having three main initiatives:</p> <ul style="list-style-type: none"> <li>• Core capacity building (CB) initiatives;</li> <li>• Topic-based capacity building (CB) Initiatives;</li> <li>• Knowledge Transfer (KT) initiatives.</li> </ul> <p><b>The core capacity building (CB) initiatives</b> cover areas that are of vital importance to Member States and the BIPM and have common interest to the global metrology community, such as supporting the Mutual Recognition Arrangement of the International Committee for Weights and Measures (CIPM MRA); this could be expanded in the future to cover areas such as entry into UTC (Co-ordinated Universal Time). These initiatives are funded (or partly funded) by the BIPM dotation.</p>	

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		<p><b>The topic-based CBKT initiatives</b> rely on external sponsorship. These topics are determined by the requirements of and upon the agreement of the sponsoring organisation and the BIPM. Member States and Associates, as well as international organisations, private organisations and foundations, are all invited and welcome to provide voluntary support.</p> <p><b>Knowledge Transfer (KT) initiatives</b> take many forms, involving the BIPM staff, visiting scientists from NMIs/DIs, as well as groups of experts assembled from around the world. Visiting scientists seconded to the BIPM can either transfer knowledge for the delivery of BIPM laboratory-based projects, or become involved with these projects to gain knowledge through dedicated KT activities. The KT initiatives also include a wide range of other knowledge transfer activities defined by the BIPM.</p> <p>The CBKT initiatives are delivered through:</p> <ul style="list-style-type: none"> <li>• workshop-based activities either at the BIPM or in the regions jointly with the regional metrology organisations (RMOs);</li> <li>• laboratory-based capacity building placements at the BIPM and hosting/partner NMI/DI;</li> <li>• knowledge transfer (KT) activities;</li> <li>• "remote-learning" online activities which include short online courses and technical exchanges based on questions and answers.</li> </ul>	
2.2	What are the objectives of the practice?	<p>The objectives of the BIPM CBKT Programme are:</p> <ul style="list-style-type: none"> <li>- to “balance the workload” amongst the NMIs and improve the efficiency of the international measurement system;</li> <li>- to help new members to engage effectively;</li> <li>- to sustain the BIPM visiting secondment programme and promote exchange between members.</li> </ul>	



2.3	What have been the key results of the practice?	<p>From its launch in 2016, the BIPM CBKT Programme has witnessed significant improvements in efficiency and effectiveness among participants as a result of its initiatives, based on the metrics used to monitor performance of the programme. These improvements include:</p> <ul style="list-style-type: none"> <li>• Improved performance in the CIPM MRA review process</li> <li>• Improvement of the “right first time” submission of calibration and measurement capabilities (CMCs)</li> <li>• Notable increase in the number of Technical Committee (TC) Chairs</li> <li>• Fewer mistakes by novice TC chairs</li> <li>• Measurable improvements in the data contributions to <i>Circular T</i> (establishing the world timescale)</li> <li>• New Certified Reference Materials (CRMs) and services (related to mycotoxin contamination of food and feed stuffs) available for emerging regions at an affordable price</li> <li>• New capabilities implemented in emerging economies (related to air quality measurements for environmental monitoring)</li> <li>• Significant increase in the number of laboratories prepared and able to pilot scientific comparisons</li> <li>• Implementation of suite of “validated capabilities” at emerging laboratories</li> </ul> <p>At the time of writing, over 75 % of Member States and Associates have participated in the CBKT Programme (as trainees, lecturers and sponsors).</p>	
2.4	In what year was the practice introduced?	In 2016.	

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2.5	Has the practice been updated/reformed since then? If yes, when and how has it evolved over time?	<p>Yes.</p> <p>Following the 26th meeting of the General Conference on Weights and Measures (CGPM), held in November 2018, the CBKT Programme is now partially funded from the BIPM dotation. This required a restructuring of the programme to distinguish between funded- and sponsor-based activities.</p> <p>In 2020, due to the COVID-19 crisis, the BIPM accelerated the implementation of its strategic initiatives and launched the BIPM CBKT Programme's "remote learning" capability. To date the BIPM has delivered its first online short course for RMOs and its first online technical exchange for those who initiate the technical capabilities of NMIs. Continuing migration to online activities is expected.</p>	
2.6	What do you consider to be the primary strengths of the practice?	<p>The BIPM CBKT Programme assists the world-wide metrology community obtain, strengthen and maintain the capabilities needed to fulfil its missions and objectives. Particularly, the CBKT Programme directly:</p> <ul style="list-style-type: none"> <li>• supports the next generation of technical leaders (in Consultative Committees, Technical Committees and comparison piloting) to facilitate sharing the leadership burden and to enable them to be more effective;</li> <li>• integrates staff from new Member States and Associates into the international metrology system and enables them to engage effectively in the CIPM MRA;</li> <li>• provides candidate Member States and Associates with the information and understanding needed when considering participation in the activities of the Metre Convention;</li> <li>• increases the effectiveness of other BIPM projects, for example, providing the training simulator alongside the launch of the new version of the BIPM Key Comparison Database (KCDB 2.0).</li> </ul>	

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2.7	<p>What do you consider to be the main challenges faced during the implementation of the practice?</p>	<p>Due to external budgetary limitations in 2014 the proposed “Visitor Programme” initiative did not achieve the necessary full consensus at the 25th meeting of the CGPM and was not therefore funded. Nowadays, the core initiatives of the programme are funded (or partially funded) by the BIPM dotation, whereas topic-based initiatives are supported by external funds. In practice, what was at first considered as very significant challenge, had unforeseen advantages. Working outside the formal (and somewhat inflexible) main programme structure allowed any lessons learnt to be implemented very quickly and the CBKT to be optimised on a very short timescale.</p>	
2.8	<p>Does the practice have a formal/normative basis within the organisation or is it conducted informally? Does this basis make the practice mandatory or voluntary?</p> <p>If there is formal basis, please provide the relevant link or documentation.</p>	<p>In 2014, Member States accepted an amendment to the generic part of the resolution that set the BIPM funding. This amendment called on Member States to provide a voluntary support for the capacity building activities for the first time.</p> <p>Pursuant to <a href="#">Resolution 4 of the 25th CGPM (2014)</a>: <i>Dotation of the BIPM for the years 2016 to 2019, the CGPM urges Member States, as well as international organisations, private organisations and foundations to maintain the provision of additional voluntary support of all kinds to support specific BIPM mission-related activities, particularly those that facilitate participation in the activities of the BIPM by those countries without well-developed metrology infrastructure.</i></p> <p>Following Resolution 4 (above) the BIPM developed the sponsor-based proposal that was approved by the CIPM in March 2015, which provided the basis for launch of the programme in 2016, see Decision CIPM/104-7 of March 2015:  <a href="https://www.bipm.org/en/committees/ci/cipm/outcomes">https://www.bipm.org/en/committees/ci/cipm/outcomes</a></p>	





		<p>The approval of the dotation in 2018 was on the basis of the Work Programme that now included funding for core CBKT activities from 2020, whilst still calling on Member States to support the sponsor-based activities.</p> <p>In parallel, the BIPM mission and objectives were revised as follows:</p> <p><i>... fulfilling the BIPM mission and objectives is complemented by its work in:</i></p> <ul style="list-style-type: none"> <li>• <i>capacity building, which aims to achieve a global balance between the metrology capabilities in Member States,</i></li> <li>• <i>knowledge transfer, which ensures that the work of the BIPM has the greatest impact.</i></li> </ul> <p>See <a href="#">Resolution 3 of the 26th CGPM (2018)</a>: On the objectives of the BIPM</p>	
2.9	At what frequency is the practice applied? i.e. is it conducted once or on an iterative basis?	It is conducted on an iterative basis and depends on the demand from RMOs and NMI and on the launch of other programme projects that require the support.	
2.10	Is this practice applied systematically, (e.g. with respect to every normative instrument, according to specific criteria or on an ad hoc basis)?	The CBKT Programme is applied systematically, however its activities may include <i>ad hoc</i> (bottom-up) initiatives.	
2.11	Please provide specific details or examples to illustrate the practice (including supporting links and documents).	The information about the CBKT's past, ongoing and planned future activities, as well as online activities are published at <a href="https://www.bipm.org/en/cbkt/">https://www.bipm.org/en/cbkt/</a>	

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3	Design of the Practice	Answers	Comments and intersections
3.1	Who designed the practice (e.g. Was it developed internally, in collaboration with other organisations, etc?)	The CBKT Programme was designed internally by the BIPM staff, with guidance and encouragement from the CIPM.	
3.2	Which stakeholders were engaged with in the design of the practice?	Member States (through their NMIs), and RMOs via the Joint Committee of the Regional Metrology Organisations and the BIPM (JCRB).	Intersection with area of IO Partnership on "Ensuring effective stakeholder engagement" (WG3)
3.3	How long did it take to design the practice?	Two years (2014-2016).	
3.4	What resources were needed to design the practice initially (i.e., staff, budget etc.)?	Staff and budget. The original design required a few person months of work but did not have a significant impact on the budget.	
3.5	What challenges were encountered during the design of the practice and how were they overcome?	Securing funding for the operational phase. Developing <i>modus operandi</i> , governance and detailed tools necessary to deliver the programme, etc. At the time there was little experience. This was overcome by a careful programme management and utilising the flexibility granted by the CIPM so that the programme could be steered as experience increased.	
3.6	Has the practice been tested before implementation (i.e. pilot phase)? If yes, please describe.	Yes, to a degree.  This was built on activities within the Joint Committee of the Regional Metrology Organisations and the BIPM (JCRB), which were used as initial elements. New elements have been added as a step-by-step process. More complex elements were trialed within a limited group.	



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4	Implementation of the Practice	Answers	Comments and intersections
4.1	Which units are responsible for implementing the practice within your IO?	BIPM staff from the International Liaison and Communication (ILC) Department are responsible for implementing the CBKT Programme with the projects delivered by the BIPM ILC staff and by scientists from the BIPM laboratories.	
4.2	Are IO members involved in implementing the practice? If so, how?	Yes. IO members fund the CBKT through the dotation and as sponsors. NMI lecturers are invited as 'guests' to participate in CBKT activities. They may also host courses or laboratory activities.	
4.3	Are external actors beyond the organisation or its membership involved in implementing the practice? If so, how?	Yes. The RMOs and international organisations with which the BIPM liaises.  The RMOs also host CBKT Programme activities. A community of co-ordinators is being developed with the RMOs for CBKT activities through the JCRB and the meeting of RMO chairs. Each RMO has designated a contact person to facilitate more integrated delivery of CBKT initiatives with the RMOs. This has had the benefit of stimulating cross-RMO initiatives, such as placements on courses being offered to attendees from other RMOs as well as building greater understanding amongst the RMOs. Liaison with RMOs ensures co-ordinated CBKT delivery.  Experts from IOs/BIPM liaisons (for example, OIML, ISO, ILAC, OIML, WTO) are invited as a lecturers to the CBKT activities.	Intersection with area of IO Partnership on "Maximising the opportunities for co-ordination across IOs" (WG5), with respect to expertise convened to conduct lectures on CBKT activities.
4.4	Which resources are needed to implement the practice (e.g., staff and budget)?	Staff and budget.	

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5	Outputs and Evaluation of the Practice	Answers	Comments and intersections
5.1	Has the practice been evaluated or reviewed?	Evaluated and reported at the meetings of the JCRB, CIPM, NMI Directors and State Party Representatives as well as at the meetings of the CGPM.	Intersection with area of IO Partnership on “Developing a greater culture of evaluation of IO rules and standards” (WG4).
5.2	If yes, who carried out the evaluation (please specify whether it was done internally or externally)	Internally. Detailed feedback is collected at every CBKT course, which is then evaluated. This often leads to fine-tuning of future courses. Overall delivery is usually subject to the BIPM programme delivery overview, monitoring and reporting.  Externally. Feedback is gathered from the RMOs via annual meetings of the JCRB and NMI Directors and State Representatives.	Intersection with area of IO Partnership on “Developing a greater culture of evaluation of IO rules and standards” (WG4).
5.3	If yes, please describe the evaluation methodology? ( e.g. were any quantitative or qualitative indicators/criteria used to measure/assess the outcomes of the practice?).	Discussion of key strategic points with the BIPM ILC Department Director and CBKT Programme Manager, who review feedback received after each CBKT activity. As course feedback is quantitative it can be used to monitor the ‘health’ of the programme effectively.	Intersection with area of IO Partnership on “Developing a greater culture of evaluation of IO rules and standards” (WG4).
5.4	If yes, what were the conclusions of the evaluation, and has the practice evolved subsequently? If possible, please attach related documents or provide a link.	A formal risk and opportunity matrix is maintained. However, this is confidential.	Intersection with area of IO Partnership on “Developing a greater culture of evaluation of IO rules and standards” (WG4).

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6	Additional comments and information	Answers	Comments and intersections
6.1	Is there any more information or documentation that would be valuable to share in relation to the practice (e.g. links, reports, meeting minutes, supporting documents)?	BIPM CBKT Programme Guidebook <a href="https://www.bipm.org/utills/en/pdf/CBKT/CBKT-Guidebook.pdf">https://www.bipm.org/utills/en/pdf/CBKT/CBKT-Guidebook.pdf</a>  CBKT Information for participants <a href="https://www.bipm.org/utills/en/pdf/CBKT/CBKT-Information-for-participants.pdf">https://www.bipm.org/utills/en/pdf/CBKT/CBKT-Information-for-participants.pdf</a>	
<b>Sources</b>			
Proceedings of Session II of the 108th meeting of the CIPM, October 2019 <a href="https://www.bipm.org/en/committees/ci/cipm/publications">https://www.bipm.org/en/committees/ci/cipm/publications</a> Draft BIPM Work Programme 2020-2023 (near-final version) <a href="https://www.bipm.org/en/work-programme">https://www.bipm.org/en/work-programme</a>			