



# MRA Review: The JCRB Perspective

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# Joint Committee of RMOs and BIPM

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# Introduction

- The JCRB considered a smaller set of broader thematic areas that require attention, and that could be viewed as strategic imperatives for the Committee itself in the coming years:
  1. Organizational Communication and Governance
  2. Efficiency and Effectiveness
  3. Support for Countries and Economies with Emerging Metrology Systems
  4. BIPM Operations and Logistics for the KCDB

# JCRB Approach

- We have deliberately chosen to interpret Recommendations in the broadest sense in order to identify areas where action and / or communication with the JCRB may be appropriate or required
- Thought on mechanisms for the JCRB to pursue remains to be done
  - Strategic planning for Key Comparisons is clearly in the domain of the individual Consultative Committees
  - JCRB could usefully ensure cross-CC coherence and provide a link to the mechanics of registration in the KCDB to ensure that the CCs are able to access the planning information in performing their monitoring function

# JCRB Approach

- A future role for JCRB might be to coordinate reports for NMI Directors that gather together cross-CC plans and performance information on measurement comparisons as a means to provide an executive summary of scientific commitments for use in budgeting or planning exercises
- In this way, the JCRB task can be interpreted as conducting gap analysis, identifying missing elements or services that could be useful to others, and stepping forward with tools to help address those gaps

# Organizational Communication and Governance

- The decision-making and operational framework involves a complex spectrum of committees at various levels.
- Key actors include:
  - NMI Directors
  - CIPM
  - CIPM Consultative Committee Presidents
  - Working Groups of the Consultative Committees
  - Working groups of the Regional Metrology Organizations
  - JCRB
  - BIPM

# Organizational Communication and Governance

- Governance challenges at the present time include:
  - clear understanding of roles and responsibilities among the key actors
  - improved communication among the various communities
  - oversight, monitoring and, when necessary, intervention
- The JCRB perspective is that success moving forward means addressing communications channels and ensuring that all of the key actors are on the same page, with the same objectives and a shared understanding of the various roles and responsibilities

# Efficiency and Effectiveness

- Critical to the success of the MRA is establishing, publishing, and maintaining a publically-available evidence-based framework for mutual recognition of laboratory services
- Maintaining this tool comes at great cost: from the expenses related to participating in Key Comparisons and other evidence-building exercises, through the review process for mutual agreement and publication, to the maintenance of the back office tools for putting these results on the web



# Efficiency and Effectiveness

- The governance costs, which relate to the many meetings and discussions at the CCs, the CC and RMO working groups, and, notably, at the JCRB are often overlooked but require scrutiny to ensure value for money
- The goal for optimization should be to ensure that the expectations for quality and reliability of the data are maintained, that evidence and information is fit for purpose and is published in a timely way, whilst minimizing the global costs to the community of National Metrology Institutes party to the Arrangement

# Efficiency and Effectiveness

- Key concerns and areas for improved efficiency and effectiveness include, for example:
  - Burden of participation in measurement comparisons and reviews
  - Managing delays and prolonged periods of apparently low activity
  - Logistics consequences of “batch review” approach to CMC publication
  - Minimizing excess effort in the CMC review process among the Regions
  - Minimizing duplication of effort on a per-metrology area or per-Region basis where “best practices” exist but are not widely used

# Support for Countries and Economies with Emerging Metrology Systems

- An important objective of the MRA itself is to provide a pathway for development of metrology capabilities for all signatories
- Special attention is required for countries and economies who have not yet joined the Treaty of the Metre and are using participation in the MRA – the Associate Members – as a mechanism to gain international recognition and as a ladder to becoming Member States

# Support for Countries and Economies with Emerging Metrology Systems

- Key considerations:
  - Engagement is challenging for those with limited or no previous experience
  - Wide dynamic range in level of services offered creates difficulties in review process
  - Too often, lessons are learned through failure and are expensive for all MRA participants
  - Burden of effort is increased when submissions are of poor quality

# BIPM Operations and Logistics for the KCDB

- The principal and authoritative tool for external visibility and consultation of the results of comparisons and accepted calibration and measurement capabilities is, naturally, the KCDB
- The operation, maintenance and development of the KCDB rests with the BIPM but the current platform is starting to show its age and there is general agreement that it is now, effectively, at the end of its life and requires an update

# BIPM Operations and Logistics for the KCDB

- Key considerations:
  - The new system should seamlessly integrate the “internal facing” CMC review database, the Key Comparison registration tracking, and the external KCDB visible to clients via the web
  - Selection of a modern ICT toolset could offer advantages beyond our current offering, including for example the possibility of creating managed subsets of information on a per-Region basis
  - Current practices across the Consultative Committees have significant variability, and the opportunity to create a harmonized search and analysis tool will be highest at the design phase for implementing the next-generation KCDB

# BIPM Operations and Logistics for the KCDB

- Key considerations:
  - Treating legacy data to ensure integrity, quality, reliability, and interoperability will require care and investment, including consultation between the BIPM implementation team and the various Consultative Committee experts responsible for comparison and CMC data
  - This service has both a high cost in terms of expertise for operations and cash for development and deployment, while simultaneously having the highest visibility among stakeholders who are not direct participants in the MRA

# RACI Analysis – An Introduction

- **Responsible**
  - Those who do the work to achieve the task; can be more than one actor.
- **Accountable**
  - The actor ultimately answerable for the correct and thorough completion of the deliverable or task, and the one who delegates the work to those responsible; only one accountable specified for each task or deliverable.
- **Consulted**
  - Those whose opinions are sought, typically subject matter experts; and with whom there is two-way communication.
- **Informed**
  - Those who are kept up-to-date on progress, often only on completion of the task or deliverable; and with whom there is just one-way communication.



# RACI Analysis – An Example (Or Two...)

- Organizational Communication and Governance
- Issue 4C: Consistency of intra-RMO Review
  - Responsible: JCRB and RMOs
  - Accountable: JCRB
  - Consulted: RMOs and CC Working Groups
  - Informed: NMI Directors, CIPM and BIPM

# RACI Analysis – An Example (Or Two...)

- Efficiency and Effectiveness
- Issue 1B: Control Participation in Key Comparisons
  - Responsible: CC Working Groups and RMO Working Groups
  - Accountable: Consultative Committees
  - Consulted: RMOs and JCRB
  - Informed: NMI Directors, CIPM and BIPM

# RACI Analysis – An Example (Or Three...)

- BIPM Operations and Logistics of KCDB
- Issue 2A: KCDB 2.0 Planning and Development
  - Responsible: BIPM
  - Accountable: JCRB (Planning); BIPM (Development)
  - Consulted: CCs, CC Working Groups and RMOs
  - Informed: NMI Directors and, CIPM

# Next Steps at JCRB

- Completing the RACI analysis for each of the MRA Review recommendations, establishing the JCRB perspective
- Framing Strategic and Operational Plans for the JCRB around these themes and actions
- Work with the other key actor communities to promote shared understanding and, where possible, common approach
  - Willing and able to facilitate or participate in RACI analysis workshops for NMI Directors, CIPM, Consultative Committee Presidents
  - Interested to compare perspectives which emerge on the various roles and responsibilities, working to establish the consensus shared view

# Organizational Communication and Governance

- 1A (strategy and planning; long term time table)
- 2A (KCDB 2.0 planning and development)
- 2C (consistency in CMC description within and across CCs)
- 3D (ensuring CMCs are reflective of real services)
- 4A (risk based approach to CMC review)
- 4C (consistency of intra-RMO review processes)
- 4F (training to ensure all actors understand processes and obligations)
- 6A (JCRB to act with more authority)
- 6B (review of rules of procedure)
- 6C (CIPM participation at JCRB meetings)
- 7A (JCRB to implement improvements)
- 7B (improve communications among CIPM, JCRB, and CCs)

# Efficiency and Effectiveness

- 1A (strategy and planning; long term time table)
- 1B (controlling participation with a view to efficiency)
- 1C (sharing coordinating role for Key Comparisons)
- 2C (consistency in expression of CMCs)
- 3A (evidence to be interpreted as generously as possible)
- 3B (published CMCs to cover as many services as technically justified)
- 3C (reduce number of CMCs by using equations, matrices, etc.)
- 4A (risk based approach to CMC reviews)
- 4B (harmonized approach to treating evidence other than comparison results)
- 4C (consistency in intra-RMO review, with a view to using “best practices”)
- 4D (appropriate training and guidance to ensure “right first time” CMC submissions)
- 5A (develop tools and methodologies to streamline comparisons)
- 8A (review and revise templates for improved utility)
- 9A (implement an overall strategy for selection of comparisons)

# Support for Countries and Economies with Emerging Metrology Systems

- 1C (encourage NMIs to share roles as comparison coordinators)
- 3A (evidence to be interpreted as generously as possible)
- 3B (published CMCs to cover as many services as technically justified)
- 3C (reduce number of CMCs by using equations, matrices, etc.)
- 3E (encourage use of percentage coverage of services by CMCs, rather than a simple count as a performance metric)
- 4B (harmonized approach to treating evidence other than comparison results)
- 4D (appropriate training and guidance to ensure “right first time” CMC submissions)
- 5A (develop tools and methodologies to streamline comparisons)
- 5B (encourage participation in and coordination of comparisons)
- 5C (establish mentoring practices within the RMOs)
- 5D (develop and provide promotional and communications material)

# BIPM Operations and Logistics for the KCDB

- 2A (KCDB 2.0 planning and development)
- 2B (improved web interface and search capability)
- 2C (consistency in CMC description within and across CCs)
- 3C (reduce number of CMCs by using equations, matrices, etc.)
- 3D (CMCs to reflect real services and not be artificially subdivided)
- 4E (web-based tool for complete CMC submission, review and publication, with tracking)
- 8A (consider and review templates to accommodate unique aspects of Chemistry and Ionizing Radiation)