



TERMS OF REFERENCE FOR TECHNICAL GROUP CHAIRS

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BACKGROUND

The goals of SIM are to develop closer collaboration among the members on metrological services, to optimize the utilization of resources, to share facilities, and to improve measurement services and make efforts toward achieving international recognition as needed and feasible.

The Technical Committee (TC)¹, headed by the TC chair, has nominated Metrology Working Groups (MWGs), chaired by one of their respective members (hereafter called “Chairs”), in all areas of measurement, which will assist the Committee in achieving these goals.

Metrology Working Groups will make every effort to include members from all National Measurement Institutes (NMIs) and Designated Institutes (DIs) in SIM with activities in the relevant area of measurement.

**Metrology Working Groups (MWGs)
 Fundamental Metrology Working Groups**

MWG 1: Electricity and Magnetism	MWG 2: Photometry and Radiometry
MWG 3: Thermometry	MWG 4: Length
MWG 5: Time and Frequency	MWG 6: Ionizing Radiation and Radioactivity
MWG 7: Mass & Related Quantities	MWG 8: Chemistry (Amount of Substance)
MWG 9: Acoustics, Ultrasound and Vibration	MWG 10: Flow and Volume
MWG 11: Legal Metrology	MWG 12: Quality System
MWG 13: Statistics and uncertainty	



The basis for mutual recognition arrangements among national laboratories, such as the Comité International des Poids et Mesures (CIPM) Mutual Recognition Arrangement (MRA)², is the mutual confidence in each other's measurement results and an understanding and of the basis for each result's uncertainty budget. This requires sufficient knowledge of facilities, techniques, processes etc., and comparisons as appropriate, to establish validity of this confidence.^{2,3}

ASSIGNMENTS

The chairs of MWGs will help to develop full cooperation among the SIM countries in their respective areas of measurement. Specifically, the chairs will work with the Technical Contacts in their areas at the NMIs or DIs to:

- Develop and maintain an annotated catalog of measurement capabilities, ranges, uncertainties, and reference conditions of all NMIs/DIs offering services in the area;
- Develop options for expanded measurement services for all with minimum duplication of effort;
- Make regional and interregional review of calibration and measurement capabilities (CMCs) following requirements of the Joint Committee of the RMOs and the BIPM (JCRB);⁴
- Distribute proposed CMCs among the MWG members and other relevant parties for intraregional (within; intraRMO) SIM review and acceptance (following the procedures in SIM 05);
- Upload SIM-approved new CMC files into BIPM-JCRB CMC website (<https://www.bipm.org/JCRBCMCs/>; restricted) for interregional (interRMO) review;
- Follow the progress of comparisons of standards, and assure that all comparisons are registered on the Appendix A of the KCDB (following the procedures as described in SIM 07), including verifying their current status;
- Be in contact with the relevant CC to be aware of comparison requirements and opportunities in each field;
- Determine which additional comparisons are needed to support mutual recognition of the essential equivalence (within appropriate uncertainties) of national standards within SIM and with other Regional Metrology Organizations;
- Make arrangements for performing these comparisons and follow them to completion, including publication;
- Keep abreast of developments in other RMOs, cooperate and participate in their meetings and comparisons as appropriate;
- Arrange meetings, workshops, and training exercises to plan and implement activities that help to promote achievement of SIM objectives;
- Participate in Technical Committee (TC) meetings and in developing TC work plans, and support in the presentation and administration of TC projects; and
- Report activities of the MWG at least annually (prior to each Technical Committee Meeting).



In carrying out these tasks, the chairs will cooperate closely with their MWG members and other colleagues as needed, other MWGs chairs, the TC chair, Professional Development Committee (PDC) chair, other experts, and with the SIM Council as necessary.

NOMINATION, PERIOD FOR PERFORMANNCE

The chair of each MWG should be nominated by their members and confirmed by the SIM Council. To be considered as a candidate by the MWG, the nominee must submit his/her candidacy with a CV and a note of support from the director or other authority of the NMI to the current chair of the MWG and the TC chair. At least once every three years, the chair position should be put up for consideration to the MWG members, who then may propose a new chair.

If there is more than one candidate, the MWG members should vote with a simple majority of the voting members (those registered as member of the MWG) needed for the election of a new chair. The current chair may be reelected through this procedure. A record of the election procedure should be sent to the TC chair, who will maintain the records. The election may take place in a meeting of the MWG or by mail/email. In this latter case, the MWG current chair (or another member nominated by the MWG) will collect the votes, keep a record of the election results, and send a copy to the TC chair.

OTHER RESPONSIBILITIES OF CHAIRS AND TECHNICAL CONTACTS

The MWG chair is responsible for coordinating the development of a work plan and arranging meetings of the technical contacts (MWG members) as required.

MWG work plans may contain some or all of the following elements:

- Calibration services that are offered in common by more than one SIM NMIs/DIs, and plans of extension of these services;
- Regional (SIM) comparisons⁴ appropriate to provide further confidence in the uncertainty claims. These should normally include key comparison needs identified by the appropriate Consultative Committee (CC) of the CIPM. A schedule for these comparisons shall be coordinated among potential participants;
- Training activities and workshops as needed, evaluating better ways to achieve objectives;
- Internships and other educational opportunities both at the host laboratory or at the requesting laboratory;
- Technical visits, including to support activities on-site;
- Research projects conducted by SIM members or other entities, having SIM members participation;
- Awareness Seminars planned to enhance the collaboration of different stakeholders; and
- Other activities that the MWG finds relevant to achieve the objectives planned.



RESULTS

The expected results of implementing these terms of reference are:

- Mid-term plans for all MWGs developed, presented to the TC.
- Strategic plans developed within the TC, with input from MWG plans.
- Participation of all NMIs/DIs with capacities in each field in the corresponding MWGs
- Metrologists of all NMIs/DIs cooperating with each other and being aware of other NMI/DI capabilities in each field.
- TC cooperation with NMIs/DIs in building capacity (as reflected in CMCs) and make CMCs internationally recognized.
- Potentially enabling the prioritization of activities of all MWGs according to available resources.

REFERENCES

1. SIM Statute V2, approved in Miami, USA, December 2001.
2. Mutual recognition of national measurement standards and of calibration and measurement certificates issued by national metrology institutes, Comité international des poids et mesures, Paris, 14 October 1999
3. CIPM MRA-D-04 (“Calibration and Measurement Capabilities in the context of the CIPM MRA”) Version 2 October 2010 (http://www.bipm.org/utis/common/CIPM_MRA/CIPM_MRA-D-04.pdf)
4. CIPM MRA-D-05 (“Measurement comparisons in the context of the CIPM MRA”) Version 1.3 October 2012 (http://www.bipm.org/utis/common/CIPM_MRA/CIPM_MRA-D-05.pdf)