

The CMC Process; Submission of CMCs

By
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AFRIMET AUV Chairman



- What are CMCs?
- CMC life cycle
 - CMC preparation
 - CMC submission, review & approval
 - CMC maintenance

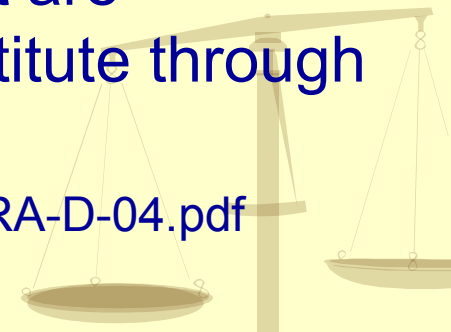


In the context of the CIPM MRA and ILAC Arrangement, and in relation to the CIPM-ILAC Common Statement, the following shared definition was agreed upon:

- “A CMC is a calibration and measurement capability available to customers under normal conditions:
 - (a) as published in the BIPM key comparison database (KCDB) of the CIPM MRA;
 - or
 - (b) as described in the laboratory’s scope of accreditation granted by a signatory to the ILAC Arrangement.”
- Where the term NMI is used it is intended to include Designated Institutes within the framework of the CIPM MRA.”



- For calibration and measurement certificates, the quantities, ranges of calibration and measurement capabilities are expressed as an uncertainty and listed in Appendix C of the MRA.
- The recognition of the calibration and measurement capabilities (CMCs) is done through peer review and inter regional approval.
- CMCs must be consistent with the results given in Appendix B, derived from the key comparisons.
- The CMCs listed in Appendix C are those that are ordinarily available to the customers of an institute through its calibration and measurement services.
 - http://www.bipm.org/utils/common/CIPM_MRA/CIPM_MRA-D-04.pdf



- **CMC preparation**
 - **BIPM guide lines on CMC preparation;**
 - <http://www.bipm.org/en/cipm-mra/documents/>
 - **CMC are submitted as per technical field service category;**
 - http://kcdb.bipm.org/appendixC/AUV/AUV_services.pdf
 - **Use the BIPM Excel template & instructions;**
 - http://www.bipm.org/en/cipm-mra/documents/cmc_excel_files.html
 - **RMO can already be involved in this process to assist.**



Calibration or Measurement Service			Measurand Level or Range			Measurement Conditions/Independent Variable		Expanded Uncertainty					Reference Standard used in calibration		List of Comparisons supporting this measurement/calibration service
Quantity	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?	Standard	Source of traceability	
Pressure sensitivity level	Measurement microphone type LS1P	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	63 Hz to 2 kHz	0.04	dB	2	95%	No	Reciprocity method	NMISA	CCAUV.A-K1, NPL 1990 ITRI-CMS 1990, 1991, 1995
Pressure sensitivity level	Measurement microphone type LS1P	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	2.5 kHz to 3.15 kHz	0.05	dB	2	95%	No	Reciprocity method	NMISA	CCAUV.A-K1, NPL 1990 ITRI-CMS 1990, 1991, 1995
Pressure sensitivity level	Measurement microphone type LS1P	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	4 kHz to 8 kHz	0.06	dB	2	95%	No	Reciprocity method	NMISA	CCAUV.A-K1, NPL 1990 ITRI-CMS 1990, 1991, 1995
Pressure sensitivity level	Measurement microphone type LS1P	IEC 61094-2:1992			dB (reference: 1 V/Pa)	Frequency	10 kHz	0.1	dB	2	95%	No	Reciprocity method	NMISA	CCAUV.A-K1, NPL 1990 ITRI-CMS 1990, 1991, 1995



- Complete Excel spread sheet as per BIPM requirements
- Attach all supporting evidence
 - Comparison results (Key/Supplementary)
 - OR other supporting evidence; bilateral comparisons, pilot study results, publications, reports.
 - Proof of CMC 3rd party accreditation
 - Or peer review through RMO, include peer review visit(s) and peer reviewer credentials.
- Submit through RMO with all supporting evidence, including quality system evidence.



- Intra-regional screening of CMC submissions from RMO member states.
 - Is co-ordinated by the RMO relevant technical WG chair.
 - This activity demand a lot of time and energy of the RMO relevant technical WG.
 - Put in most of submission effort in here to ensure a speedy submission process.



- Technical WG review CMC submission for;
 - Metrological soundness
 - Compliance to BIPM Excel spread sheet requirements
 - Proof of support by quality system/ 3rd party accreditation
 - Comparison support data
 - Peer review information (where applicable)
- Comments and further information may be required from the WG chair and laboratory.



- CMC submitted to BIPM for Inter-regional review by RMO relevant technical WG chair.
- Inter-regional evaluation of CMCs take place between RMOs:
 - Submission is made electronically on restricted JCRB web site. <http://www.bipm.org/JCRBCMCs/>
 - All RMO chairs are notified by e-mail.
 - All RMOs indicate if they will participate in the CMC review and by when.
 - Report/Outcome of Inter-regional evaluation is communicated via JCRB web site.






BIPM - JCRB Web Site - Windows Internet Explorer

http://www.bipm.org/JCRBCMCs/ShowCMCEntry.jsp?CMC=APMP.AUV.6.2009&x=58&y=9

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My account is: AFRIMETS.TC on webapp1

> You are here: JCRB > JCRB CMC site > AUV > APMP.AUV.6.2009

CMC status for APMP.AUV.6.2009 -- Previously seen CMCs --

→ Add to my favourites

APMP.AUV.6.2009

- ▶ CMC status
- ▶ History of changes
- ▶ Review logbook online
- ▶ Logbook as a PDF file

Summary

- ▶ CMC site home
- ▶ JCRB website manual
- ▶ Create a CMC
- ▶ RMO actions pending
- ▶ Complete list of CMCs
- ▶ Get published CMCs
- ▶ KCDB statistics
- ▶ View my profile
- ▶ Log off

CMCs by metrology area

- ▶ AUV
- ▶ EM
- ▶ L
- ▶ M
- ▶ PR
- ▶ OM
- ▶ RI
- ▶ I

→ **NPLI (India) Accoustics**

Download CMC file [File info]
2009-01-19
Update done by the RMO originator: APMP

File posted for inter-regional review on
Last update: 2009-06-26 made by APMP

→ **Review round**

RMO review	AFRIMETS	APMP	COOMET	EURAMET	SIM
Will review?		N/A	Yes	Yes	Yes
Date for review		N/A	2009-03-20	2009-03-13	2009-03-31
Date report received	N/A	N/A	2009-03-20	2009-04-11	2009-04-07
Report	N/A	N/A			

→ **Post revised file**

Revision in progress [File info]
2009-06-26

Download CMC revised file
Date of revised CMC submission

→ **Approval**

This CMC is presented here for approval until 2009-07-17

→ **Decision of RMO Representatives**

CMC submission & review

Inter-regional

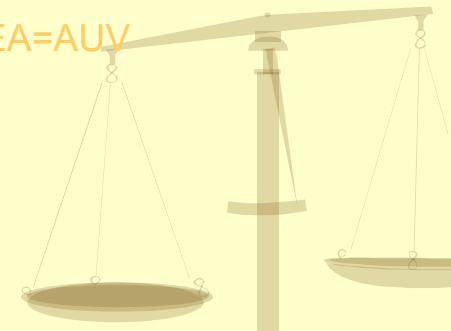
- Comments and requests for further information may be required from the RMOs via WG chair to the laboratory.
- Report/Outcome of Inter-regional evaluation is communicated via JCRB web site.
- If all RMOs approve, then the CMCs are published on the KCDB by the BIPM.



- It is NMI responsibility to
 - Internally review all CMC on a 4 to 5 year cycle.
 - Need not be a specific exercise, it can be part of other quality procedures.
 - Needs to be checked for:
 - Metrological validity
 - Technical support (supporting comparisons)
 - Quality system support
 - All non editorial changes need to go through full review process.



- Editorial changes can follow a “fast track” route.
 - Essentially by-passing the inter-regional review.
- The NMI do not need to keep a copy of its CMC Excel spread sheet.
- This can be downloaded from the restricted access JCRB web site and used for updates/changes.
 - <http://www.bipm.org/JCRBCMCs/PublishedCMC.jsp?METAREA=AUV>



END

The CMC Process; Submission of CMCs



- The CMC review process
 - CMC claim is prepared by laboratory
 - Supporting evidence must be supplied
 - Key or Supplementary comparison results
 - Otherwise other supporting evidence, such as bilateral comparisons, pilot study results, publications, reports
 - If third party accredited, submit through RMO
 - If not, organise review through RMO. Includes peer review visit
 - Submit through RMO with all supporting evidence, including peer review results



- Intra Regional Review
 - Submit to WG chair
 - WG Chair organises review by technical experts in WG, may include experts from other RMOs
 - WG chair collates comments and return to submitter
 - Corrections are made, send back to RMO WG chair
 - RMO WG chair do final check and send to the JCRB secretary, copied to the Regional Coordinator/JCRB representative



- **Inter Regional Review (CCQM)**
 - The files are published on the KCWG restricted site for review by other RMOs (inter regional review)
 - Comments are send to the Regional coordinator and further information may be required from the WG chair and laboratory
 - The files are updated and finally discussed at the Key Comparison WG of the CC
 - Can require final corrections, then published on the restricted KCDB site for voting
 - If all RMOs approve, published on the KCDB

