

20 February 2013

**CCM-WGCMC;
Report on activities
since 11 May 2011**

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of New Zealand (MSL)**

Background of CCM-WGCMC

- ◆ **Formed in April 2005 at request of JCRB**
 - **To facilitate inter-regional CMC Review Process**
 - **Terms of reference**
 - a) To establish and maintain lists of service categories, and where necessary rules for the preparation of CMC entries;
 - b) To agree on detailed technical review criteria;
 - c) To coordinate and where possible conduct inter-regional reviews of CMCs submitted by RMOs for posting in Appendix C of MRA;
 - d) To provide guidance on the range of CMCs supported by particular key and supplementary comparisons;
 - e) To identify areas where additional key and supplementary comparisons are needed;
 - f) To coordinate the review of existing CMCs in the context of new results of key and supplementary comparisons.

**CCM-WGCMC
does not conduct
inter-regional
reviews**

Membership of CCM-WGCMC

◆ CCM WG Chairs

- For WGs with related CMCs - Each such WG is encouraged to have a representative from each RMO

◆ RMO TC/WG chairs

- For Mass & Related Quantities and for Fluid Flow

◆ Also

- CCM President & Executive Secretary
- JCRB Executive Secretary
- KCDB Manager



	Mass & Related Quantities	Fluid Flow
AFRIMETS	Alaa Eltaweel (NIS)	Benjamin van der Merwe (NMISA)
APMP	Dr Tokihiko Kobata (NMIJ)	Dr Yoshiya Terao (NMIJ)
COOMET	Irina Kolozinska (VNIIM)	Prof Vladimir Bolshakov (NSC "IM")
EURAMET	Nieves Medina (CEM)	Elsa Batista (IPQ)
SIM	Francisco Garcia (CESMEC)	Roberto Arias (CENAM)

Main roles

- ◆ **To maintain a list of service categories**
- ◆ **To clarify the CMC review process**
 - For example, by providing guidance on the range of CMCs supported by particular key and supplementary comparisons
- ◆ **To be a point of contact for advice**
 - on CMC-related issues problems
 - This is the key role now that the intra- and inter-regional review processes are well-established

Activities - List of services

- **Current list of services**

- See CMC website

- <http://kcdb.bipm.fr/AppendixC/search.asp?reset=1&met=M>

- Recently revised flow categories

- to include molar flow rate (for leak standards calibration)

- 9.4 Gas flow rate**

- 9.4.1 Mass gas flow rate

- 9.4.2 Molar flow rate

Activities - Necessary comparisons

- **Draft document on comparisons necessary for CMC**
 - Currently covers
 - Density, gravimetry, hardness, mass, low pressure, high pressure, viscosity
 - Available on CCM website
 - <http://www.bipm.org/en/committees/cc/ccm/>
 - Restricted access CCM-WGCMC documents
 - User: CCM-WGCMC Password: mreq

- **But in practice**
 - Follow criteria in CIPM MRA D-04
 - Or arrange bilateral key comparisons
 - Because timely key comparison results often not available

Activities - Inter-regional reviews of CMCs

- **Roughly constant CMC submission rate ~ one per month**
 - Efficiently reviewed by RMO TCs/WGs
- **Fewer problems now with CMC submissions**
 - 10 in 3 years to February 2011, ~1 per year since

Summary of CMC activity of the CCM for the period May 2011 to December 2012

Most problems with CMC submissions are simply resolved with advice or help

No	CMC batches	RMO	CMCs	Posted for inter-regional review	Date of publication
1.	APMP.M.28.2011	APMP	KRISS CMCs for Fluid Flow	5/26/2011	Not approved
2.	SIM.M.17.2011	SIM	INTI, Argentina, Volume of liquids	6/13/2011	2/15/2012
3.	SIM.M.18.2011	SIM	ABANDONED	7/15/2011	ABANDONED
4.	APMP.M.29.2011	APMP	Pressure CMC, VMI (Vietnam)	7/13/2011	10/18/2011
5.	EURAMET.M.23.2011	EURAMET	Mass CMCs from IMBIH (Bosnia and Herzegovina)	6/9/2011	6/8/2012
6.	EURAMET.M.24.2011	EURAMET	New CMCs for CEM in torque	6/14/2011	9/26/2011
7.	EURAMET.M.25.2011	EURAMET	CEM Mass	6/17/2011	9/26/2011
8.	SIM.M.19.2011	SIM	Mass, density and volume of solid update	9/13/2011	12/9/2011
9.	APMP.M.30.2011	APMP	VM(Vietnam) - Fluid Flow	10/30/2011	4/19/2012
10.	SIM.M.20.2011	SIM	INDECOPI (Perú) - Density CMCs	11/6/2011	2/15/2012
11.	SIM.M.21.2011	SIM	nist cryogenic flow	11/10/2011	12/1/2011
12.	EURAMET.M.26.2012	EURAMET	Changes in ranges for CMI Force CMCs	3/12/2012	10/8/2012
13.	SIM.M.22.2012	SIM	CMCs for Torque, INMETRO, Brazil	3/30/2012	9/24/2012
14.	APMP.M.31.2012	APMP	KRISS Fluid Flow	4/15/2012	6/12/2012
15.	SIM.M.23.2012	SIM	NIST Natural Gas Flow	4/17/2012	7/3/2012
16.	EURAMET.M.27.2012	EURAMET	New EURAMET CMC for Volume	4/30/2012	10/9/2012
17.	EURAMET.M.28.2012	EURAMET	EURAMET Flow CMC revised first group	5/4/2012	11/24/2012
18.	SIM.M.24.2012	SIM	LATU-Density	5/25/2012	Review in progress
19.	EURAMET.M.29.2012	EURAMET	EURAMET Flow CMC revised second group	5/28/2012	Publishing in progress
20.	SIM.M.25.2012	SIM	New INDECOPI	7/26/2012	Review in progress
21.	EURAMET.M.30.2012	EURAMET	New CMCs for DPM (Albania) in Mass	12/18/2012	Review in progress

Future work of WGCMC

◆ **Proposal of CCM President**

- **Disband current WGCMC**
- **Extend scope of the CCM WGS (WG on Strategy)**
 - to include WGCMC functions & activities
- **Makes sense**
 - with WGS now expanded to include RMO representation, membership of current WGCMC nearly the same as WGS

Any questions?

Meeting 11 May 2011 (ctd)

■ **Best existing device uncertainty**

- See CMC definition in CIPM MRA-D-04
- Values being established by some CCM-WGs
- Can be shown in CMC Excel file
 - Using the comments column which is visible in KCDB

■ **Classification for leak rate CMCs**

- KC for leak rate nearly finished
- WGLP & WGFF chairs to agree
 - on how to include in leak rate CMCs in list of services for flow

■ **Supplementary comparisons**

- See CIPM MRA-D-05
 - “Comparisons carried out by the RMOs to meet specific needs not covered by key comparisons, including comparisons to support confidence in calibration and measurement certificates”
- Useful to support CMCs for developing economy NMIs
 - RMO organised and approved
 - Can have simple protocol (eg normal calibration procedure)
 - Do not require computation of degrees of equivalence
 - Final report published in the KCDB usually via a link
 - Can have non-MRA participants
 - Listed in KCDB as participants but their results not in KCDB