

CCM WG on Strategy and MRA coordination

CCM strategy

CIPM MRA review

Review of CCM and RMO KCs

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CCM Strategy 2017-2027

first version 14.01.2013

major revision on October 2017 (Version 3.0 for 2017-2027)

latest revision 28.06.2018

CCM WG Strategy 14.01.2013 (latest revision: 28.06.2018)

Strategy 2017-2027

Consultative Committee for Mass and Related
Quantities (CCM)

CCM Strategy 2017-2027: long term table of KCs

KC identifier \ year 20XX	17	18	19	20	21	22	23	24	25	26	27	28	29	30
CCM.F-K1					X									
CCM.F-K2											X			
CCM.F-K3														X
CCM.F-K4								X						
CCM.F-K23 new (200N, 500N)		X												
CCM.T-K1						X								
CCM.T-K2									X					

Table 2: Timetable of the required KCs in force and torque.

KC identifier \ year 20XX	17	18	19	20	21	22	23	24	25	26	27	28	29	30
CCM.P-K1.b CCM.P-K1.c CCM.P-K2	X													
CCM.P-K3		X												
CCM.P-K4							X			(X)				
CCM.P-C-Poil; C-Neg; C-Diff				X										
CCM.P-C-HPoil							X							
CCM.P-K12				X										
CCM.P-K15													X	

Table 6: Timetable of the required KCs in pressure and vacuum.

CCM Strategy 2017-2027: how far the light shines

Branch	Reference number	Description	Repeat cycle	Start date	How far does the light shine
Density	CCM.D-K3	Density of stainless steel weight	10-15	2018	Mass range 100 g to 1 kg
Density	CCM.D-K5	Liquid density measurement by oscillation-type density meter	10-15	2019	0.8 kg/m ³ to 1.5 kg/m ³
Density	CCM.D-K6	Refractive index of liquid	10-15	2020	1.3 to 1.7
Density	CCM.D-K1	Density of silicon crystal	10-15	2021	Mass range 100 g to 1 kg
Viscosity	CCM.V-K3	Measurement of viscosity standard liquids in a wide viscosity range	6	Ongoing	5 mm ² /s to 160000 mm ² /s
Viscosity	CCM.V-K4	Measurement of viscosity standard liquids in a wide temperature range	6	2018	10 °C to 100 °C
Fluid Flow	CCM.FF-K5.2016	High pressure gas flow	10	2016	10 m ³ /h to 10 ⁶ m ³ /h
Fluid Flow	CCM.FF-K1.2017	Water flow	10	2017	1 m ³ /h to 10 ³ m ³ /h
Fluid Flow	CCM.FF-K6.2017	Low pressure gas flow	10	2017	10 ⁻⁴ m ³ /h to 10 ³ m ³ /h
Fluid Flow	CCM.FF-K1.2018	Water micro flow	10	2018	10 ⁻⁸ m ³ /h to 10 ⁻³ m ³ /h

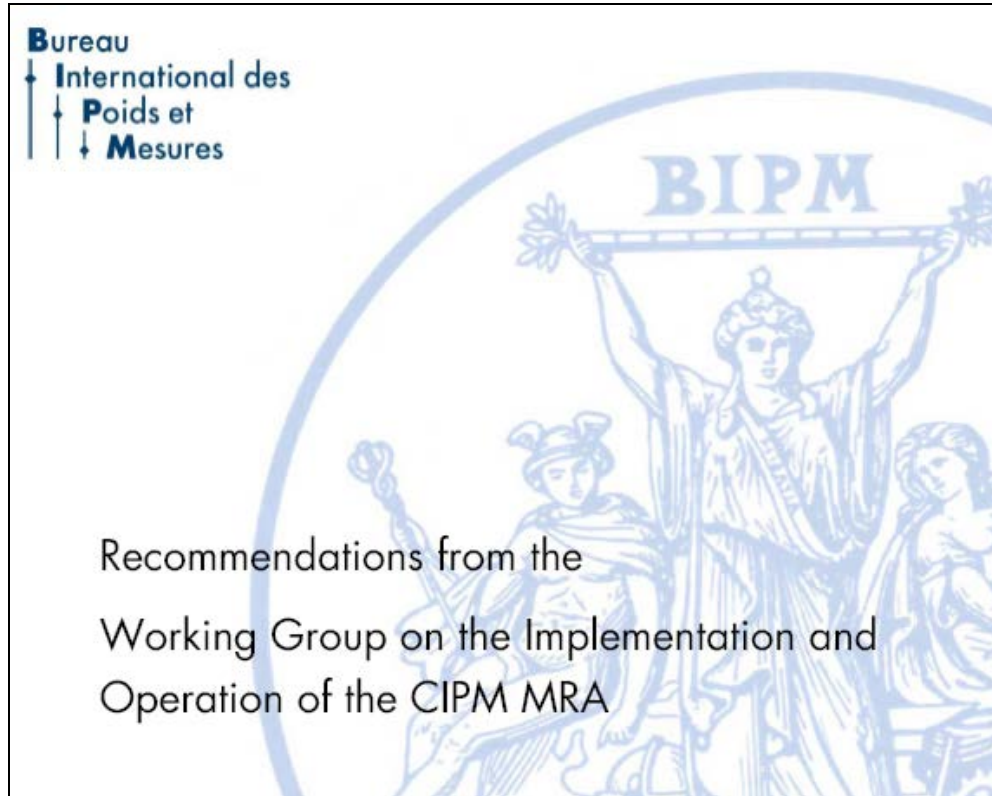
CCM Strategy 2017-2027: future revisions

Revision after 20 May 2019 :

- activities related to WGD-kg and WGR-kg (merge of two WGs)
- BIPM activities
- long term table of KCs
- ongoing and future comparisons, especially “How far the light shines”
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Major revision in 2021

Recommendations of the review of the CIPM MRA



- review of the actions at the CCM
- three actions underway
 - reduce the number of CMCs
 - specific guidance documents in the CCM WGs to implement an “efficient and effective” approach to CMC review
 - use of the NIST consensus builder

Review of CCM and RMO KCs

Key and supplementary comparisons - Results of the search 

Related links

- [KCDB Statistics](#)
- [KCDB FAQs](#)
- [KCDB Reports](#)
- [CIPM MRA](#)
- [JCRB](#)
- [Find my NMI](#)
- [Metrologia](#)

Contact us

- BIPM.KCDB@bipm.org

Search criteria : Mass
Your request produced **407** result(s)

List of comparisons
Click on a comparison identifier to view more

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CCM.FF- K6.2017	Low pressure gas flow 2017 - 2019
Comparison type, Field Status	Key comparison in Mass, Fluid Flow In progress
CCM.P- K4.2012.1	Pressure measurements in gas (absolute mode) 2019
Comparison type, Field Parameter(s) Status	Key comparison in Mass, Pressure Vacuum pressure: 1 Pa to 10 kPa Nitrogen at 23 °C Protocol complete
CCM.D- K1	Density measurements of a silicon sphere 2001 - 2003
Comparison type, Field Status	Key comparison in Mass, Density Approved for equivalence, Results available
CCM.D- K2	Density of liquids 2004
Comparison type, Field Parameter(s) Status	Key comparison in Mass, Density Temperature: 5 °C to 60 °C Atmospheric pressure Approved for equivalence, Results available
CCM.D- K3	Solid density standards 2016
Comparison type, Field Status	Key comparison in Mass, Density Planned

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- review of the status of all the CIPM and RMO key and supplementary comparisons
- will be updated on the BIPM KCDB soon
- many thanks to RMO TC-M chairs, CCM WG chairs and BIPM KCDB colleagues

Issues

- ◆ Comparison protocol – lack of WG review stage (linking, transfer standards etc.)
- ◆ Registration of KCs and SCs
 - Inconsistent nomenclature (KC/SC/numbers/sub-division/dates)
 - Irregular reporting and updating of status
 - Lack of WG notification/approval process
- ◆ Ensuring all potential participants have the opportunity to take part
- ◆ Use of SCs when KCs are more appropriate and allow linking
- ◆ Use of several bilateral comparisons instead of a coordinated KC/SC
- ◆ Post completion review process (with respect to published CMCs)

Recommendations

- ◆ WGs to publish timetables for CCM KCs
- ◆ WG Chair to be informed by the RMO of proposed KCs and SCs (as early as possible) and to coordinate with CCM and other RMO comparisons
- ◆ WG Chair to review protocol and ensure (e.g.) appropriate procedure and transfer standards
- ◆ RMOs to ensure progress is reported annually for all KCs and SCs
- ◆ RMOs to be given guidance on the use of KCs and SCs
- ◆ WG Chair to be informed of KC and SC registration and to ensure consistent nomenclature is used
- ◆ RMO and WG Chair to ensure that CMC review process has been completed












CCM Guidance documents

<https://www.bipm.org/en/committees/cc/ccm/>

CCM publications and bibliography

Meeting reports	Strategy documents	Guidance documents	Member bibliographies	CCM
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Guidance documents:

-  Classification of services in M 
-   CCM Guidelines for Submission and Review of CMCs.
-   CCM Key Comparison Report Template.
-   CCM Guidelines for approval and publication of the final reports of key and supplementary comparisons (with Appendix on Pilot Studies), 2017, 7 pp.
-  CCM - IAG Strategy for Metrology in Absolute Gravimetry.
-  Registration and progress report form for KCs and SCs
-  Publication of a Final Report in *Metrologia's Technical Supplement*
(please save to your computer and complete locally)

Thank you for your attention

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