

# On the revision of the KCDB 2.0

Susanne Picard

KCDB Coordinator – International Liaison and Communication Department  
spicard@bipm.org

**Bureau**  
International des  
Poids et  
Mesures



1. Up to now
2. Concept
3. Numerical search
4. Questions to the CCEM

# CIPM MRA UP TO NOW: revised implementation of the CIPM MRA

## CGPM 2014

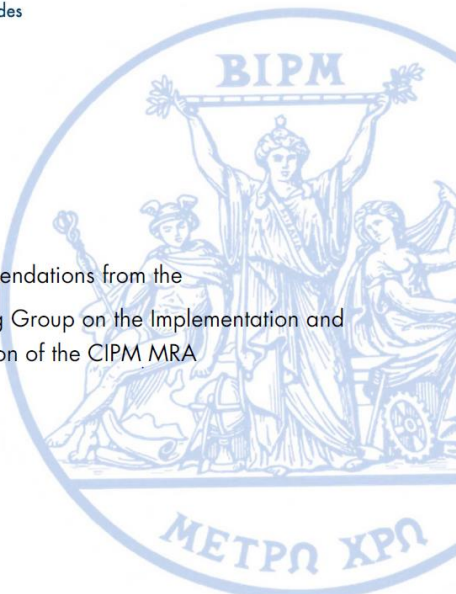
### Resolution 5 On the revision of the CIPM MRA

#### invites

- the Consultative Committees and the JCRB to continue their ongoing efforts to streamline operations within the existing framework, and to prepare for and contribute to the wider review in 2015,
- the CIPM to establish a working group under the chairmanship of its President, with membership to be determined at the 2015 workshop, to conduct a review of the implementation and operation of the CIPM MRA,

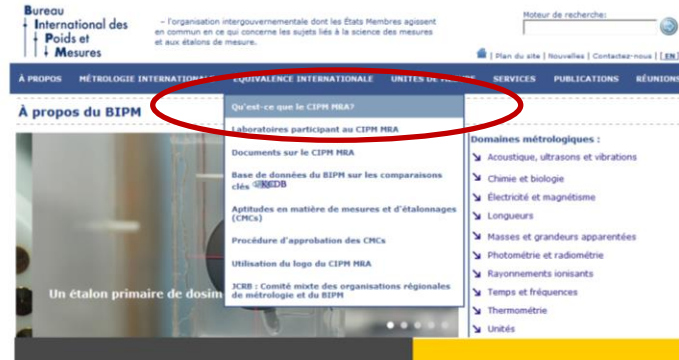


Bureau  
International des  
Poids et  
Mesures



Recommendations from the  
Working Group on the Implementation and  
Operation of the CIPM MRA

Final Version – 23 August 2016



[CLIC !](#)

### CIPM MRA review

<p><b>Introduction</b></p> <p>The CIPM Mutual Recognition Arrangement (CIPM MRA) has matured into a well-recognized pillar of the international quality infrastructure. After a decade and a half of successful operation, a review has been undertaken to ensure the sustainability of the Arrangement for the coming years (see CGPM Resolution 5, 2014).</p> <p><b>Outcomes of the review</b></p> <ul style="list-style-type: none"> <li>Recommendations from the Working Group on the Implementation and Operation of the CIPM MRA (Final report published 23 August 2016)</li> </ul> <p><b>CIPM Mutual Recognition Arrangement</b></p> <ul style="list-style-type: none"> <li>The CIPM MRA</li> <li>Participating laboratories and international organizations</li> <li>The CIPM MRA database (KCDB)</li> <li>CIPM MRA documents</li> <li>Joint Committee of the RMOs and the BIPM (JCRC)</li> <li>CGPM Resolution 5, 2014</li> <li>Introduction to CGPM Resolution 5, 2014</li> </ul>	<p><b>Preparatory workshop: 13-14 October 2015</b></p> <p>The aim of this workshop was to engage in a broad discussion of the CIPM MRA amongst Directors of National Metrology Institutes, Member State representatives, representatives of RMOs, and other relevant stakeholders. The workshop considered the benefits of the CIPM MRA, as well as establishing views on what works well, and what needs to be improved regarding its implementation. It established a working group under the chairmanship of the CIPM President, with membership determined at the workshop, to conclude the formal review of the implementation and operation of the CIPM MRA.</p> <p><b>Workshop documents</b></p> <ul style="list-style-type: none"> <li>Draft agenda</li> <li>CIPM MRA: Past, present and future</li> <li>Analysis of participation in comparisons and declared CMCs</li> <li>Proposed Terms of Reference for the Working Group on the Implementation and Operation of the CIPM MRA</li> <li>Workshop presentations</li> <li>Photograph</li> </ul> <p>Documents submitted before the Workshop:</p>
---	---

# KCDB 2.0 Main Objectives

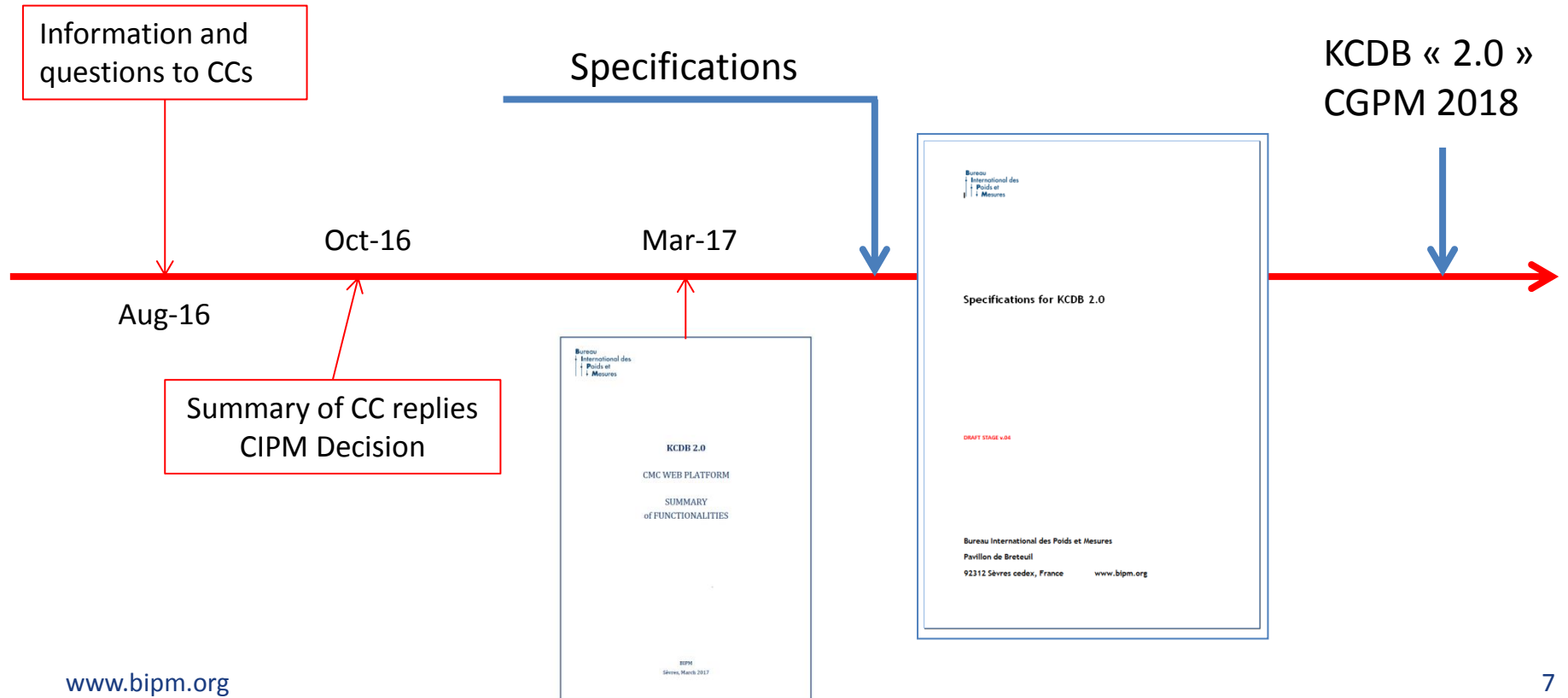
---

**BETTER SEARCH  
FACILITIES**

**USERFRIENDLY  
WEB SUPPORT**

**WEB BASED CMC  
SUBMISSION  
AND REVIEW**

**TRACK  
COMPARISONS IN  
REAL TIME**



BETTER SEARCH  
FACILITIES

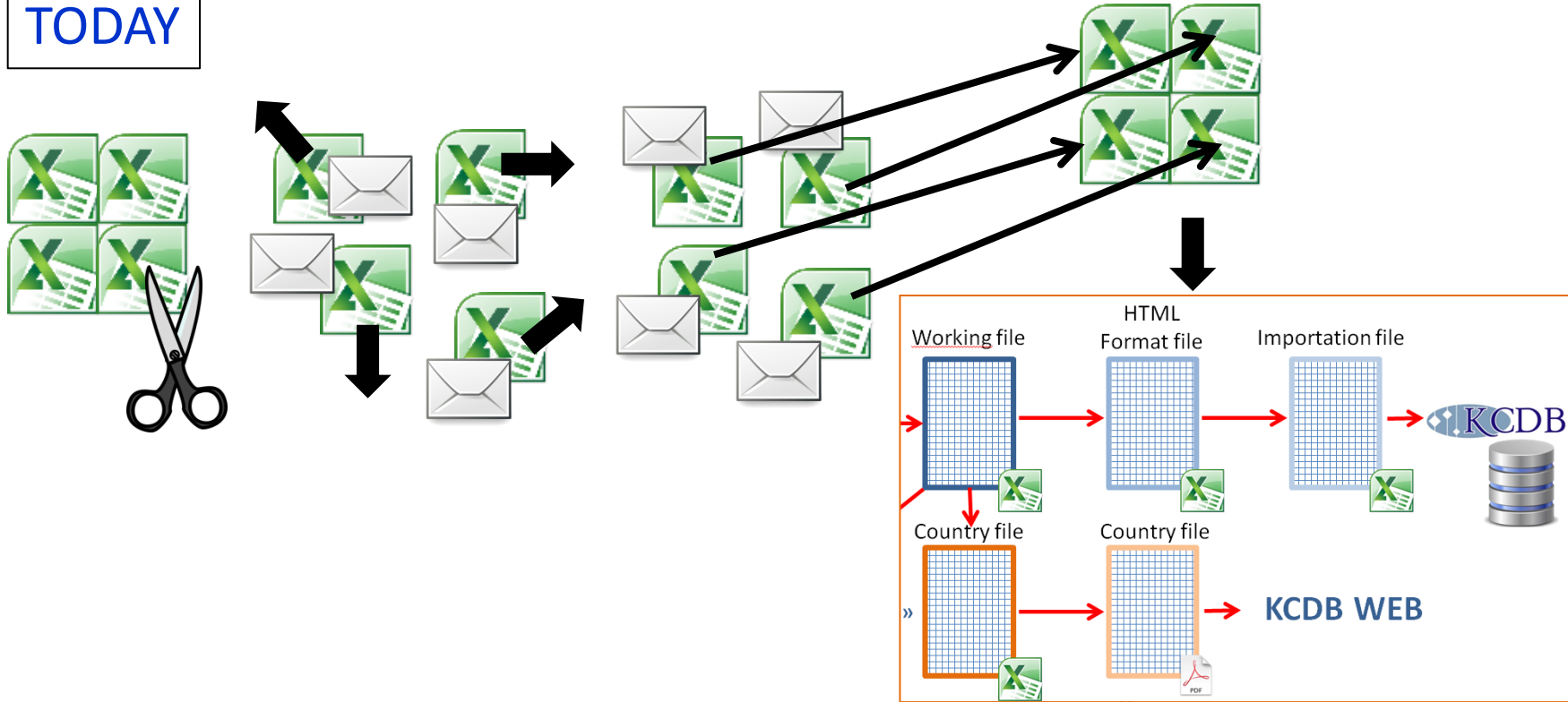
USERFRIENDLY  
WEB SUPPORT

WEB BASED CMC  
SUBMISSION  
AND REVIEW

TRACK  
COMPARISONS IN  
REAL TIME



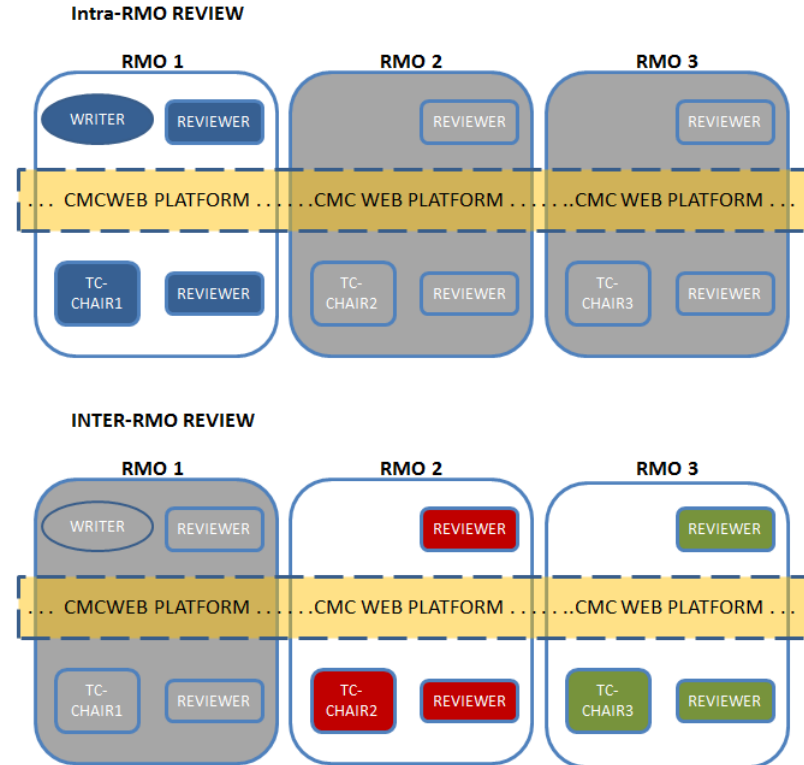
TODAY



TOMORROW

WRITER – REVIEWER – FINDER concept

Risk based evaluation included  
Sequential access



# KCDB 2.0 Restricted access to CMC Web Platform

- WRITER
- TC-CHAIR / permanent
- TC OBSERVER
- REVIEWER
- GUEST
  
- JCRB Exec. Sec. / permanent
- KCDB Office / permanent



Password

[Forgot your password?](#)

Create Account

First Name

Last Name

Email

Password

- WRITER
- REVIEW
- GUEST

- AUV
- EM
- L...





**BETTER SEARCH  
FACILITIES**

**USERFRIENDLY  
WEB SUPPORT**

**WEB BASED CMC  
SUBMISSION  
AND REVIEW**

**TRACK  
COMPARISONS IN  
REAL TIME**

INTUITIVE APPROACH

STANDARDIZED WEB TOOLS

EASY ACCESS TO INFORMATION

VISUAL ERGONOMY...

**BETTER SEARCH  
FACILITIES**

**USERFRIENDLY  
WEB SUPPORT**

**WEB BASED CMC  
SUBMISSION  
AND REVIEW**

**TRACK  
COMPARISONS IN  
REAL TIME**

## Key and supplementary comparisons (and pilot studies) - registration and progress form

Comparison conducted by		in	Date:
1. Subfield:	RMO internal identifier		
2. KCDB Identifier: <small>(for KCIs and SCs) (to be attributed by the BIPM)</small>			
3. Type of comparison: Key <input type="checkbox"/> Supplementary <input type="checkbox"/> Pilot study <input type="checkbox"/>	4. Short description:		
5. Measurand and nominal value(s):	Special characters for copying <small>(if required)</small> α β γ δ ε ζ η θ ι κ λ μ		
6. Parameter(s):			
7. Transfer device(s)/sample(s):			
8. Pilot/Coordinating laboratory(ies) <small>(acronyms and countries)</small> :			
9. Participating institutes <small>(acronyms and countries)</small> :			
10. Progress: <small>(please note date and tick appropriate box to indicate current status)</small>			
Date	Status	Pilot	Supplementary
	Planned	<input type="checkbox"/>	<input type="checkbox"/>
	Protocol complete/approved	<input type="checkbox"/>	<input type="checkbox"/>
	In progress	<input type="checkbox"/>	<input type="checkbox"/>
	Measurement completed	<input type="checkbox"/>	<input type="checkbox"/>
	Report in progress	<input type="checkbox"/>	Draft A <input type="checkbox"/> Draft B <input type="checkbox"/>
	Report submitted to	<input type="checkbox"/>	<input type="checkbox"/>
	Results approved	<input type="checkbox"/>	<input type="checkbox"/>
	Approved for equivalence	<input type="checkbox"/>	<input type="checkbox"/>
	Abandoned	<input type="checkbox"/>	<input type="checkbox"/>
V Comments:	Publication reference:		



Information into database to allow search on progress.

Alerts to pilots with request for update.



**BETTER SEARCH  
FACILITIES**

**USERFRIENDLY  
WEB SUPPORT**

**WEB BASED CMC  
SUBMISSION  
AND REVIEW**

**TRACK  
COMPARISONS IN  
REAL TIME**

Make data numerically available

Improve thesaurus

**Slovenia, MIRS/SIQ/Metrology (MIRS/Slovenian Institute of Quality and Metrology/Metrology)**

[Complete CMCs in Electricity and Magnetism for Slovenia \(.PDF file\)](#)

DC current sources: high values. Current generator, multifunction calibrator, **100 A to 500 A**  
 Relative expanded uncertainty ( $k = 2$ , level of confidence 95%) in  $\mu\text{A/A}$ : **30**  
 Zero flux method  
 Approved on 06 August 2013  
 Internal NMI service identifier: MIRS/SIQ/Metrology/72 (235)

**Sweden, SP (Technical Research Institute of Sweden)**

[Complete CMCs in Electricity and Magnetism for Sweden \(.PDF file\)](#)

High DC current: sources. Measurement setup, **0.1 kA to 6 kA**  
 Relative expanded uncertainty ( $k = 2$ , level of confidence 95%) in  $\mu\text{A/A}$ : **10**  
 Comparison with reference setup  
 Approved on 07 April 2016  
 Internal NMI service identifier: SP/513.1

**Switzerland, METAS (Federal Institute of Metrology)**

[Complete CMCs in Electricity and Magnetism for Switzerland \(.PDF file\)](#)

High DC current: sources. Current generator, **0.1 kA to 10 kA**  
 Relative expanded uncertainty ( $k = 2$ , level of confidence 95%) in  $\mu\text{A/A}$ : **8 to 25**  
 DC current comparator  
 Approved on 06 August 2013  
 Internal NMI service identifier: METAS/212.36.1  
[Uncertainty table](#)

BIPM KCDB Appendix C - Uncertainty table - Mozilla Firefox

kcdb.bipm.org/appendixC/cmInformation.asp?cmc=453169700&Branch=EM/HV&Service=EM

**Switzerland, METAS (Federal Institute of Metrology)**

High DC current: sources. Current generator, **0.1 kA to 10 kA**

- Relative expanded uncertainty ( $k = 2$ , level of confidence 95%) in  $\mu\text{A/A}$ : **8 to 25**
- DC current comparator
- Approved on 06 August 2013
- Internal NMI service identifier: METAS/212.36.1

	Expanded uncertainty / ( $\mu\text{A/A}$ )
100 A to 300 A	8
300 A to 3 kA	13
3 kA to 10 kA	25

Print

TODAY: Impossible to search on value of measurand nor uncertainty

TOMORROW: Possibility to search on **value of measurand and uncertainty within a range ?**

- To search on a value, we need to transform data to accessible values
- Give information on range...

## TODAY...

	U value	U unit
Constant	25.2	K
Range	3.5 to 48.1	mSv
Equation	Q[0.4, 0.6E-02L], L in mm, values range from...	μm
Matrix	3.0 to 8.0	μV

## ... TOMORROW ?

U(min)	U(max)	U unit	Representation	Function
25.2	25.2	K	Constant	NO
48.1	3.5	mSv	Range	NO
0.400	0.406	μm	Equation	Q[0.4,0.6E-02L]
3.0	8.0	μV	Matrix	YES



	CMCs	Eq	Mtx
AUV	1160	3	0
EM	4480	<b>50</b>	<b>1310*</b>
L	1620	850	0
M	2760	300	0
PR	1270	20	0
T	2550	40	5
TF	760	50	0
RI	4100	0	0
QM	6230	20	0

\* Supporting 1750 CMCs

## Issues for the CCEM

1. Revision corresponding to 50 equations will be requested
2. Limited modifications of units requested
3. Support for thesaurus requested
4. No particular impact on matrices is expected
5. Role of WG-RMO Chair will be considered
6. Find slot without CMC publication to go from KCDB 1.0 to 2.0
7. Carry out revision of #8 and #9 when KCDB 2.0 available

Thank you

**B**ureau  
International des  
Poids et  
Mesures



[www.bipm.org](http://www.bipm.org)