

KCDB REPORT TO THE JCRB

September 2018 to March 2019

Introduction

This report summarizes the major progress and evolution of the BIPM Key Comparison Database (KCDB) over the last six months.

The EXCEL files used as a basis for the CMC statistics are available on the [access-restricted JCRB CMC website](#) (on “KCDB statistics”). They are updated successively during the year and the CMCs that have been modified are highlighted in pink according to previous JCRB decisions.

Further information on the KCDB may be found on the BIPM KCDB web pages. Notably, the number of key and supplementary comparisons, as well as the number of CMCs by metrology area and by country, are updated successively during the year and may be consulted on the [KCDB Statistics web page](#)¹.

The status of the database concerning **Calibration and Measurement Capabilities** are given in Section 1. In Section 2, recent information concerning **comparisons** carried out within the frame of the CIPM MRA is summarized. Section 3 highlights the status of **Associates** of the BIPM, and a short summary on progress made on the **revision of the KCDB**, in the context of the Review in the CIPM MRA, is presented in Section 4.

1. CIPM MRA Appendix C : Calibration and Measurement Capabilities

1.1. Status of the KCDB CMC database

End of February 2019, the KCDB included a total of 25 268 CMCs:

- 18 856 in Physics,
- 6 412 in Chemistry.

Additional CMCs are continuously published but the number of CMCs is now quasi stationary as other CMCs are deleted or greyed out. During the last period 144 CMCs were revised. The evolution of the number of CMCs since 2008 is depicted in Figure 1. The number of CMCs presently published in the KCDB by state/economy and metrology area is continuously available on [KCDB Statistics](#).

¹ On request, the KCDB Office may provide an EXCEL file listing information on the present contents of the CIPM MRA Appendix B.

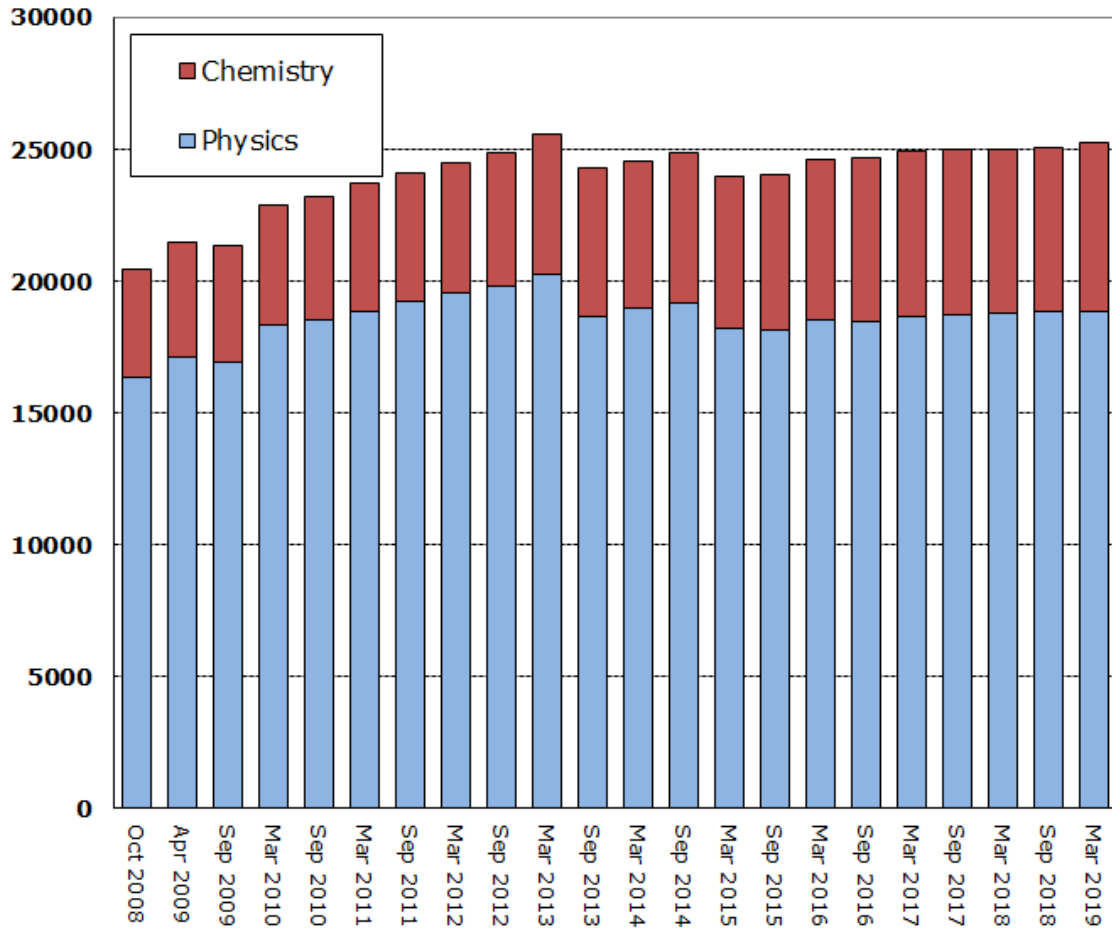


Figure 1. Number of CMCs registered in the KCDB since October 2008.

1.2. CMC publications (excluding revisions)

During the last 6 months Zambia declared their very first CMCs and Indonesia declared their first CMCs in Chemistry and Biology. China declared CMCs for a new category in Chemistry and Biology.

CMCs treated by the BIPM KCDB Office from 1 September 2018 to 1 March 2019 are listed in Table 1².

Table 1. Published CMCs from 1 September 2018 to 1 March 2019 (revised CMCs not included)

	RMO / economy	Field	CMCs
October 2018	KE	AUV	6
	NL	RI	-57
	BR	M	-3
	APMP : AU, CN, HK, ID, JP, KR, SG,	QM	205
	TH		
	PT	M	1
	MX	EM	8
November 2018	ZM	T	11
	EURAMET : CH, CZ, DE, FR, SI	M	2
	ES	RI	-2
	DE	RI	-3
December 2018	SE	EM	-2
	IT	EM	-4
	EURAMET: BG, CH, FR, HU	PR	8
	APMP: ID, KR	T	3
	DK	T	-1
	EURAMET: BA, FR, IE	T	9
	US	RI	2
January 2019	APMP : AU, JP	L	13
	GB	L	2
	GB	L	-2
February 2018	BA	M	2

² Published CMCs are announced in "[CMCs News](#)".

1.3. Deleted CMCs, Greying out and Re-instatements

Greying-outs, deletion and reinstatements of CMCs are coordinated by the JCRB Executive Secretary, and carried out by the KCDB Office. Table 2 lists the CMCs concerned during the last six months.

The present situation regarding temporary removal (“greying-out”) of CMCs is available on-line of the [Statistics page of the KCDB](#) at the JCRB restricted web, summarized in Table 3. In total 435 CMCs are presently greyed out. The number of greyed out CMCs has hardly changed during the last 6 months.

The dates of the greying-out of CMCs are listed in the spreadsheet “Dates of CMCs greying-out” of the EXCEL file “CMCsNumber_2019, available from the [access-restricted JCRB CMC website](#) (see “KCDB statistics”).

Table 2. Deleted, greyed-out or reinstated CMCs from 1 September 2018 to 1 March 2019

Date	State/ economy	Field	Action
5 October	NL	RI	57 CMC is radioactivity were deleted
8 October	BR	M	3 greyed out CMCs
15 October	KR	QM	2 CMCs greyed out in Gas
23 October	MX	EM	8 CMCs reinstated
27 November	ES	RI	2 CMCs greyed out
27 November	DE	RI	3 CMCs greyed out
5 December	SE	EM	2 CMCs greyed out
10 December	IT	EM	4 CMCs greyed out
20 December	DK	T	1 CMC greyed out
28 January	IAEA	RI	1 greyed out CMC was deleted
28 January	FR	EM	3 greyed out CMCs were deleted
31 January	US	RI	1 greyed out CMC was deleted

Table 3. Number of CMCs temporary removed (“greyed-out”) from the KCDB, by country and by metrology area, as at 1 March 2019.

AFRIMETS

ZA		4								4
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Total AFRIMETS: 4

APMP

AU				27						27
CN							1			1
IN							3			3
JP							3			3
KR								6		6
TH						3	1			4

Total APMP: 44

COOMET

KZ										0
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Total COOMET: 0

EURAMET

AL		7								7
BE				24					0	24
DE						3		12		15
DK					1					1
ES						2				2
FR				0						0
IAEA						0				0
IT		31		19			1	3		54
JRC						110		82		192
LV				30						30
PT							1			1
SE				2						2
SK	6						2			8

Total EURAMET: 336

SIM

MX			22	0	0			1	0	23
AR							0			0
US		3	0	8		0				11
BR		3						14		17

Total SIM: 51

TOTAL: 435

1.4. CMC statistics of RMOs

(Follow-up of Action 17/1 from the 17th JCRB meeting)

Table 4 summarizes the repartition of CMCs on the different RMOs and international signatories of the CIPM MRA.

Table 4. Information on CMC statistics per RMO

Entity	Total number of CMCs March 2019
AFRIMETS	634
APMP	6244
COOMET	2521
EURAMET	11216
GULFMET ³	0
SIM	4624
ESA	0
IAEA	26
JRC ⁴	0
WMO	3

2. CIPM MRA Appendix B : Key and supplementary comparisons

2.1. Present status

On the 1 March 2019 the KCDB covered **1588 published comparisons** distributed as listed in Table 5; 1022 key comparisons and 566 supplementary comparisons. In fact, 70 of the 95 BIPM key comparisons are all part of the BIPM.RI(II)-K1 (SIR equivalent activity). On the other side, 21 continuous BIPM comparisons cover each tens of completed bi-lateral comparisons carried out between the BIPM and different metrology institutes.

Of the 29 comparisons registered in the KCDB since the last JCRB meeting, 2 comparisons were registered for GULFMET. GULFMET has hence now 20 comparisons registered in the KCDB.

³ The GULFMET was approved as an RMO on a provisional basis by the CIPM in October 2015.

⁴ Earlier IRMM (EC Geel)

GULFMET countries participate in 31 comparisons organized by GULFMET, by other RMOs or Consultative Committees.

Table 5. Key and Supplementary Comparisons on 1 March 2019.

Entity	KC	SC
BIPM	95	1
CC	493	32
AFRIMETS	6	24
APMP	141	113
COOMET	48	96
EURAMET	168	185
GULFMET ⁵	4	16
SIM	67	99

Figure 2 shows the evolution of the total number of key (green) and of supplementary (violet) comparisons registered in the KCDB since September 2003. The annual increase of key comparisons seems to have stabilized to around some +40 taking into account the history since 2004. The annual increase of key- and supplementary comparisons is around 6 %. The ratio of supplementary comparisons, 20 % in 2006, has progressively increased to 35 %. It should be noted that the graph also include repeats of key comparisons.

The number of new key and supplementary comparisons registered in the KCDB over the one-year period ending at the date indicated on the the abscissa is illustrated in Figure 3.

Updated graphs illustrating the participation in key and supplementary comparisons were made available on the Statistics page of the KCDB in February 2019.

⁵ The GULFMET was approved as an RMO on a provisional basis by the CIPM in October 2015.

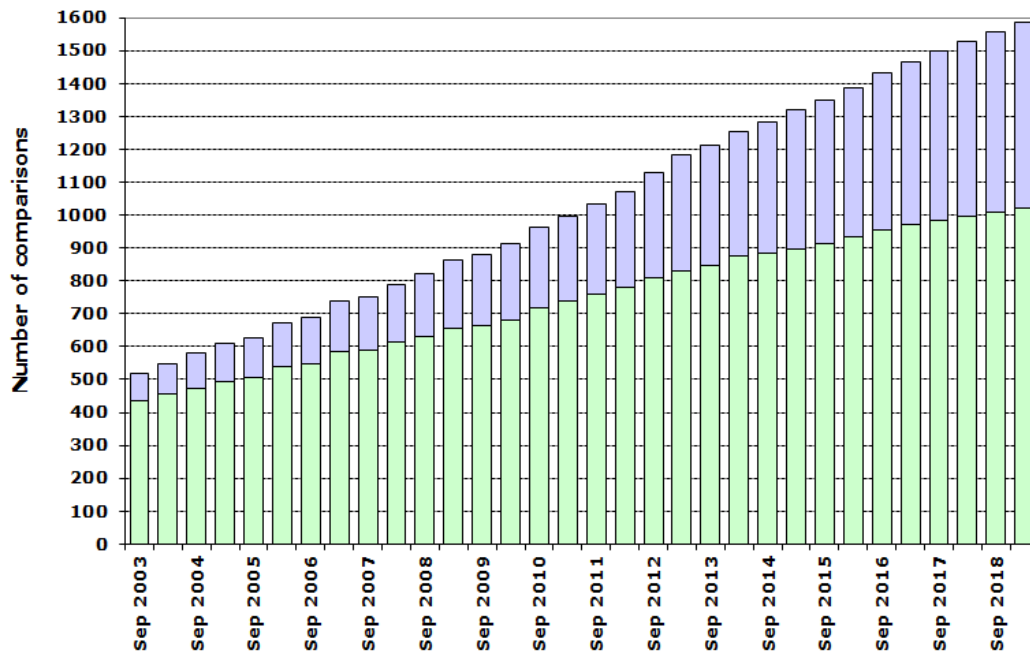


Figure 2. Total number of key comparisons (green) and supplementary comparisons (blue) registered in the KCDB: evolution since September 2003

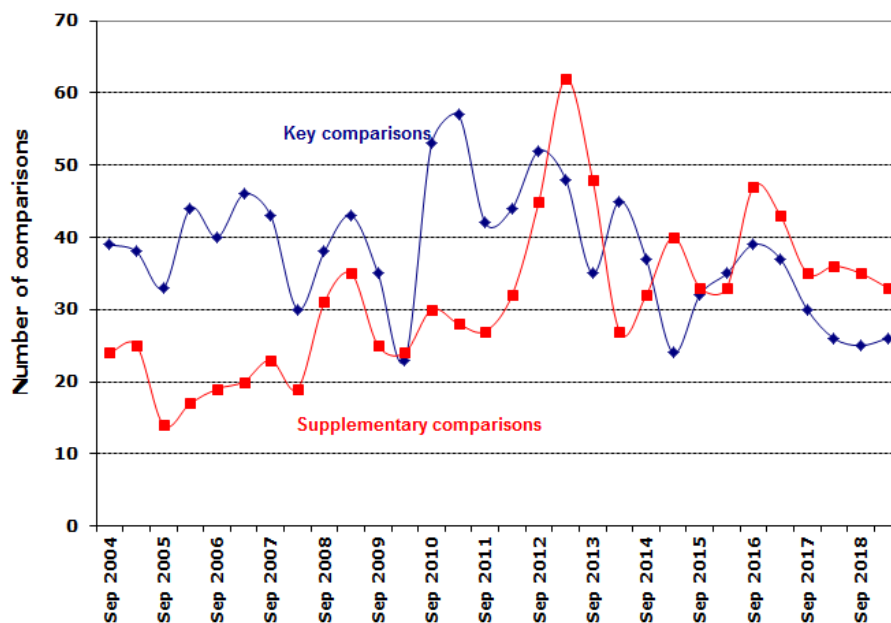


Figure 3. Number of new comparisons registered in the KCDB over the one-year period ending at the date indicated on the abscissa.

2.2. Registrations and modifications of comparisons

From 1 September 2019 the following 30 comparisons were registered as new:

AFRIMETS.AUV.V-K3	CCEM-K5.2017	COOMET.M.FF-S7
AFRIMETS.AUV.V-S2	CCM.F-K2.a.2	COOMET.M.FF-S8
AFRIMETS.L-S4	CCPR-K5.2019	COOMET.PR-K1.a.2018
AFRIMETS.M.F-S2	CCQM-K155	COOMET.T-S3
APMP.EM-S16	CCQM-K19.2018	EURAMET.AUV.V-K2
APMP.L-K5.2014	CCQM-K26.b.2019	EURAMET.QM-S12
APMP.L-S9	CCQM-K34.2016.1	EURAMET.RI(I)-S18
APMP.M.F-K2.a	CCQM-K73.2018	GULFMET.EM-S5
APMP.M.F-K2.b	CCRI(I)-S3	GULFMET.T-S1
APMP.M.H-S7	COOMET.EM-S23	SIM.L-K1.2007.1
APMP.M.M-K2.2	COOMET.EM-S24	SIM.M.M-S18
APMP.M.M-S2		

End of February, 62 abandoned or superseded key and supplementary comparisons were kept in the KCDB archives (included in the presented statistics).

2.3. Published results of key and supplementary comparisons

The following 26 reports were published during the last 6 months:

APMP.M.F-K2.a and b	BIPM.RI(I)-K6 (METAS)	CCQM-K141
AUV.V-K3 Linking	CCEM-K4.2017	CCQM-K34.2016
BIPM.EM-K11.b (NSAI-NML)	CCQM-K109	CCQM-K95.1
BIPM.EM-K12	CCQM-K116	COOMET.AUV.A-S2
BIPM.EM-K12 (NRC)	CCQM-K120	EURAMET.AUV.A-K5
BIPM.EM-K13.a and b (NSAI-NML)	CCQM-K121	EURAMET.M.D-S3
BIPM.QM-K1 (HMI/DHMZ)	CCQM-K128	EURAMET.PR-K4.2
BIPM.RI(I)-K1 (VSL)	CCQM-K131	SIM.PR-S3
BIPM.RI(I)-K4 (VSL)	CCQM-K138	

2.4. Follow-up on JCRB Action 33/3

Action 33/3: *The BIPM KCDB office, as part of the KCDB report to the JCRB, to identify Key and Supplementary Comparisons which were started 5 or more years ago and have not reached a conclusion.*

Globally, the number of key comparison older than 5 years decreases, while the number of unfinished supplementary comparisons is constant as illustrated in Figure 4. A list of the comparisons concerned may be found in Appendix.

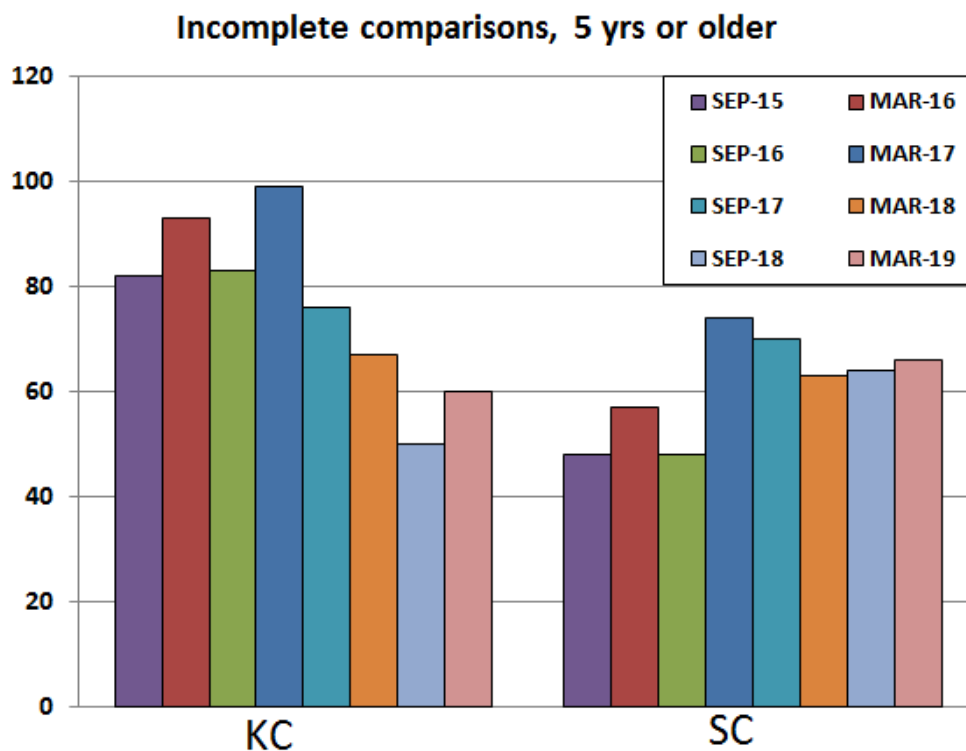


Figure 4. Histogram showing the number of incomplete comparisons that started more than 5 years ago.

3. Participation of Associates of the CGPM in CIPM MRA activities

Table 6 summarizes the participation of the 42 Associates of the CGPM in CIPM MRA activities as at 1 March 2019

Zambia published their first CMCs. The number of CMCs for associates is steady. The repartition of CMCs among Associates is illustrated in Figures 5 and 6.

Table 6. CIPM MRA activity of the NMIs of Associates of the CGPM: important dates, number of published CMCs and participation in key and supplementary comparisons.^{6,7}

Associate of the CGPM	Published CMCs	Greyed-out CMCs	Key comparisons	Supplementary comparisons
Albania	0	7	8	4
Azerbaijan	1	0	1	9
Bangladesh	0	0	1	2
Belarus	248	0	37	43
Bolivia	19	0	6	21
Bosnia and Herzegovina	64	0	13	10
Botswana	0	0	1	4
CARICOM	0	0	0	12
Chinese Taipei	390	0	97	48
Costa Rica	67	0	20	30
Cuba	113	0	6	19
Ecuador	20	0	4	19
Estonia	16	0	8	12
Ethiopia	0	0	0	2
Georgia	30	0	7	14
Ghana	0	0	2	6
Hong Kong, China	259	0	83	25
Jamaica	22	0	6	9
Kuwait (State of)	0	0	2	3
Latvia	29	30	13	8
Luxembourg	0	0	3	1
Macedonia (fmr Yugoslav Rep. of)	23	0	8	9
Malta	0	0	4	3
Mauritius	0	0	2	2
Moldova, Republic of	43	0	4	15
Mongolia	0	0	4	4
Namibia	7	0	0	3
Oman	0	0	1	2
Panama	37	0	8	18
Paraguay	24	0	2	17
Peru	113	0	25	32
Philippines	31	0	13	8
Qatar	0	0	3	1
Seychelles	0	0	0	3
Sri Lanka	0	0	6	2
Sudan	0	0	0	1
Syrian Arab Republic	0	0	12	3
Tanzania	0	0	0	0
Uzbekistan	0	0	0	0
Viet Nam	31	0	33	9
Zambia	11	0	2	7
Zimbabwe	13	0	1	7
	1598	37	445	440

⁶ These numbers take into account all comparisons registered in the KCDB, disregarding status, for which at least one

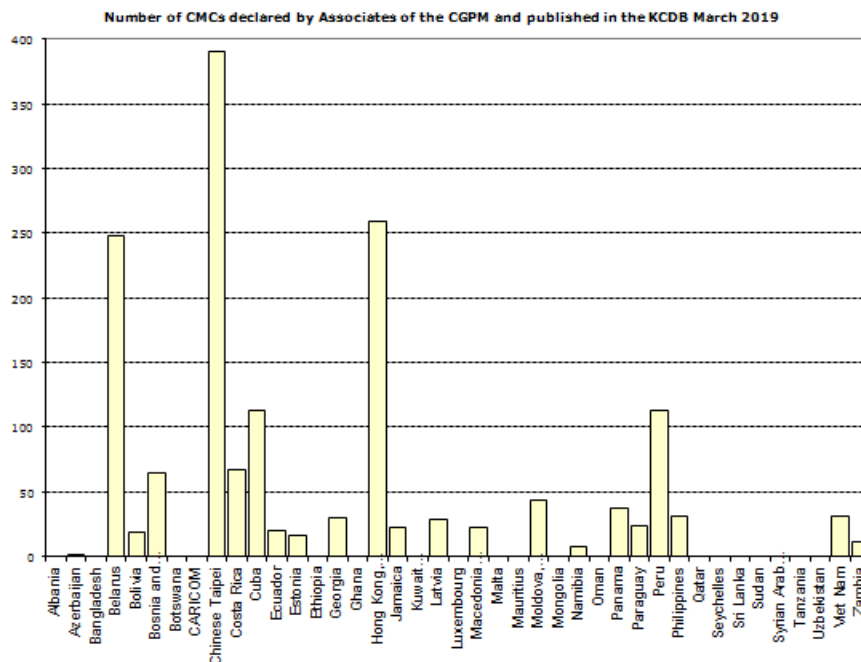


Figure 5. Graph on the number of CMCs declared by Associates of the CGPM

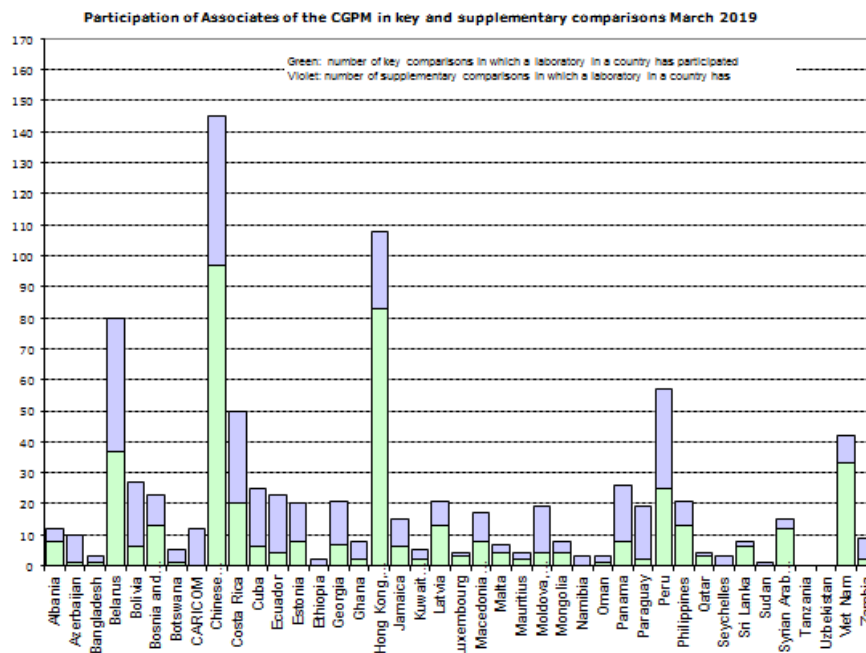


Figure 6. Graph on the participation of Associates of the CGPM in key and supplementary comparisons

laboratory of the Associate is listed in the participants list.

⁷ As the numbers on participation in key and supplementary comparisons change comparatively slowly with time, the corresponding KCDB statistics are updated every six months (in May and November of each year). However, the numbers of CMCs published in the KCDB varies more rapidly and are updated more frequently. The numbers given here show the situation as on 19 September 2018.

4. Revision of the BIPM KCDB

The development of the KCDB 2.0 is divided into 3 main batches: CMCs, Comparisons and Statistics. The project also includes the implementation of a new search engine (Elasticsearch) and to carry out the migration of legacy data from the old to the new database.

The CMC platform and search facilities (except for numerical search) have been delivered by the developers and are presently tested prior to validation. The tests are made on migrated data. The numerical search/filter facility for CMCs is treated separately and the specifications are being prepared.

The functional specifications for Comparisons have been approved by the BIPM and the software is under development.

A preliminary implementation plan for the KCDB 2.0 has been established. Once the software has been validated by the BIPM, tests will be made in collaboration with selected stakeholders.

An important part of the implementation is to inform the stakeholders on the new support. For this purpose, the KCDB Office will demonstrate the software at coming Consultative Committee and associated WG meetings. A user guide is presently being drafted. A set of shorter instructive video clips is also foreseen.

It will be possible to consult the KCDB 1.0 until that the KCDB 2.0 has been launched. However, two or three weeks before that the KCDB 2.0 will go live no more data will be added to the DB to allow migration of legacy data. CMCs that already are within a review cycle will continue the cycle as before – the JCRB restricted web will be maintained until all submitted batches have been treated. The KCDB Office will upload approved data onto the new database with the Excel sheets as basis during the transition period.

The transition towards quantity based equations (instead of numerical equations presently used) will be made after that the KCDB 2.0 has been launched. Support and guidance on this is presently being prepared in collaboration with the JCRB Executive Secretary.

The KCDB 2.0 is planned to be launched in 2019.

Acknowledgement

The development and testing is supported by Sten Bergstrand (JCRB Executive Secretary), Chingis Kuanbayev (BIPM) and the BIPM IT-team - Laurent Le Mée and Thierry Nguyen. Many thanks also to Nikita Zviagin (JCRB Executive Secretary until January 2019) and Robert Sitton for their contributions.

APPENDIX List of uncompleted comparisons older than 5 years
a) Key Comparisons

KC identifier	Status Sep-2018	Indicated year	Pilot
AFRIMETS.M.P-K2	In progress	2012 - 2013	NMISA
APMP.EM.BIPM-K11.2	Report in progress, Draft B	2004	Puslit KIM-LIPI
APMP.EM.BIPM-K11.5	Protocol complete	2013 - 2014	NMIJ AIST
APMP.EM.RF-K8.CL	Measurements completed	2012 - 2013	NMIJ AIST
APMP.EM-K2	In progress	2010 - 2011	KRISS
APMP.EM-K5.1	Report in progress, Draft A	2010 - 2013	NIM
APMP.L-K1.2018	Planned		KRISS
APMP.M.D-K4	Report in progress, Draft A	2007 - 2008	KRISS
APMP.M.F-K3.a	In progress	2011 -	NIM
APMP.M.F-K3.b	In progress	2011 -	NIM
APMP.M.H-K1.b	Report in progress, Draft A	2003 - 2005	NMIJ AIST
APMP.M.H-K1.c	Report in progress, Draft A	2003 - 2005	NMIJ AIST
APMP.M.P-K1.c.2	Report in progress, Draft B	2012	KRISS
APMP.M.P-K15	In progress	2013 - 2014	NMIJ AIST
APMP.M.P-K9	Report in progress, Draft A	2009 -	KRISS
APMP.M.P-K9	Report in progress, Draft A	2009 -	NMIA
APMP.PR-K2.a.1	Measurements completed	2010 - 2012	NMIA
APMP.PR-K2.b.1	In progress	2010 - 2012	NMIA
APMP.PR-K3.a	In progress	2012 - 2014	NMIJ AIST
APMP.PR-K3.a.1	Measurements completed	2006	NIM
APMP.RI(I)-K2.B	Report in progress, Draft A	2007	NMIJ AIST
APMP.RI(I)-K4	Report in progress, Draft A	2009 - 2010	INER
APMP.RI(I)-K5	In progress	2013 - 2014	KRISS
APMP.T-K3.6	Planned	2013 - 2014	NIM
APMP.T-K4.1	Planned	2013 - 2014	NIM
APMP.T-K6.2013	Planned	2013 - 2014	NMC, A*STAR
APMP.T-K8	In progress	2011 - 2013	NMIJ AIST
CCL-K1.2011	In progress	2011 - 2014	CENAM
CCL-K1.2011	In progress	2011 - 2014	NRC
CCM.FF-K2.2011	In progress	2013 -	VSL
CCQM-K110	Postponed	2012	IRMM
CCQM-K110	Postponed	2012	GL
CCQM-K110	Postponed	2012	NIMC
CCRI(II)-K2.Tc-99	In progress	2012 - 2013	NPL
CCRI(III)-K9.AmBe.1	Report in progress, Draft A	2012 - 2013	NPL
CCT-K1.1	Report in progress, Draft A	2006 - 2014	NIST
CCT-K4.1	In progress	2012 - 2014	NMIA
CCT-K6.1	Report in progress, Draft A	2008 - 2010	NPL

(continued...)

KC identifier	Status Sep-2018	Indicated year	Pilot
CCT-K6.1	Report in progress, Draft A	2008 - 2010	NPL
CCT-K9	Measurements completed	2011 - 2012	NIST
COOMET.AUV.V-K1	Report in progress, Draft B	2007 - 2008	VNIIM
COOMET.L-K3	Report in progress, Draft A	2011 - 2012	VNIIM
COOMET.PR-K3.a	Report in progress, Draft A	2009 - 2011	BelGIM
EURAMET.L-K4.2005.1	In progress	2013 - 2014	VSL
EURAMET.L-K4.2005.1	In progress	2013 - 2014	SMD
EURAMET.M.D-K1.1	Report in progress, Draft A	2008 - 2012	PTB
EURAMET.M.M-K2.4	Protocol complete	2013	DFM
EURAMET.M.P-K1.c	In progress	2011 - 2014	FORCE
EURAMET.PR-K2.a	Measurements completed	2010 - 2012	VSL
EURAMET.RI(I)-K1.1	In progress	2013 - 2014	METAS
EURAMET.RI(I)-K4.1	In progress	2013 - 2014	METAS
EURAMET.T-K3.4	Report in progress, Draft A	2010 - 2011	MIRS/UL-FE/LMK
EURAMET.T-K8	Report in progress, Draft A	2008 - 2012	PTB
EUROMET.M.F-K1	Report in progress, Draft B	2002 - 2004	MIKES
EUROMET.M.F-K3	In progress	2005 -	PTB
SIM.M.P-K1	Protocol complete	2008 - 2010	CENAM
SIM.M.P-K6	Report in progress, Draft A	2008 - 2011	CENAM
SIM.M.P-K6.1	Report in progress, Draft B	2011 - 2013	LACOMET
SIM.M.P-K7	Report in progress, Draft B	2001	CENAM
SIM.QM-K1	Report in progress, Draft B	2009	INMETRO

b) Supplementary Comparisons

SC identifier	Status Sep-2018	Indicated year	Pilot
AFRIMETS.M.M-S3	In progress	2013	NIS
AFRIMETS.RI(I)-S1	In progress	2011 - 2013	NMISA
AFRIMETS.T-S2	In progress	2012	NMISA
AFRIMETS.T-S3	In progress	2012	NMISA
AFRIMETS.T-S4	Published	2012 - 2013	MIRS/UL-FE/LMK
APMP.EM-S8	Protocol complete	2011 - 2013	NPLI
APMP.L-S5	In progress	2012	CMS
APMP.L-S5	In progress	2012	NMIJ AIST
APMP.M.G-S1	Report in progress, Draft A	2012	NIM
APMP.M.H-S4	Report in progress, Draft A	2011	KRISS
APMP.M.MM-S1	In progress	2012 - 2013	KRISS
APMP.M.M-S1	Planned	2007	NPSL
APMP.M.P-S1	Measurements completed	2003 - 2005	CMS/ITRI
APMP.M.P-S1	Measurements completed	2003 - 2005	SPRING Singapore
APMP.PR-S1.2	Protocol complete	2008	NMC, A*STAR
APMP.PR-S5	Measurements completed	2008 - 2009	NMIJ AIST
APMP.PR-S6	In progress	2012 - 2013	KRISS
APMP.RI(I)-S1	Report in progress, Draft B	2010 - 2011	OAP
APMP.RI(II)-S3.Cs-134.Cs-137	Report in progress, Draft A	2013	NMIJ AIST
APMP.T-S10	Planned	2013	KRISS
APMP.T-S9	Planned	2013	NMIJ AIST
CCRI(II)-S10	Report in progress, Draft A	2011 - 2012	ENEA-INMRI
CCRI(II)-S6.Co-57	Report in progress, Draft B	2008	IAEA
CCRI(II)-S6.I-131	Report in progress, Draft B	2006	IAEA
CCRI(II)-S9	Report in progress, Draft A	2011	KRISS
CCT-S2	Report in progress, Draft B	2007 - 2010	LNE
CCT-S3	Report in progress, Draft A	2007 - 2008	NMIJ AIST
COOMET.EM.RF-S1	Report in progress, Draft B	2009	VNIIFTRI
COOMET.EM-S10	Report in progress, Draft B	2010 - 2012	VNIIMS
COOMET.EM-S15	Planned	2013	SNIIM
COOMET.EM-S6	Report in progress, Draft B	2007 - 2010	VNIIMS
COOMET.EM-S7	Report in progress, Draft B	2009 - 2011	VNIIMS
COOMET.EM-S9	In progress	2009	VNIIFTRI
COOMET.M.FF-S2	Report in progress, Draft B	2008 - 2009	PTB
COOMET.M.FF-S4	Report in progress, Draft B	2009 - 2010	SMU
COOMET.M.F-S1	Report in progress, Draft B	2008 - 2010	VNIIM
COOMET.M.H-S4	Report in progress, Draft B	2007 - 2010	VNIIFTRI
COOMET.PR-S1	Measurements completed	2012 - 2013	VNIIOFI

(continued...)

SC identifier	Status Sep-2018	Indicated year	Pilot
COOMET.PR-S5	Measurements completed	2008 - 2011	INIMET
EURAMET.EM-S33	In progress	2010 - 2011	LCOE
EURAMET.EM-S34	Protocol complete	2010 - 2011	LCOE
EURAMET.EM-S35	Protocol complete	2012 - 2013	INRIM
EURAMET.EM-S36	Planned	2012 - 2014	SP
EURAMET.EM-S37	In progress	2011 - 2013	CMI
EURAMET.M.F-S2	In progress	2012 - 2013	BEV
EURAMET.M.M-S5	Planned	2012 - 2013	NSAI NML
EURAMET.M.P-S5	Published	2007	PTB
EURAMET.PR-S4	Measurements completed	2012 - 2013	LNE
EURAMET.PR-S5	Measurements completed	2012 - 2013	PTB
EURAMET.RI(I)-S8	Published	2011	IRCL/GAEC-EIM
SIM.M.FF-S4	Report in progress, Draft B	2006	INIMET
SIM.M.F-S2	Planned	2012	IDIC
SIM.M.F-S3	Report in progress, Draft B	2012 - 2013	NIST
SIM.M.F-S4	Protocol complete	2012 - 2013	IDIC
SIM.M.M-S6	Report in progress, Draft B	2009	CESMEC Ltda.
SIM.M.P-S2	In progress	2009 - 2011	INMETRO
SIM.M.P-S3	Protocol complete	2010	LCPN-P
SIM.M.P-S4	Protocol complete	2010	LCPN-P
SIM.M.P-S8	Planned	2012	ENAER
SIM.M.P-S9	Planned	2012	ENAER
SIM.QM-S3	Report in progress, Draft A	2012	NIST
SIM.QM-S4	Report in progress, Draft A	2012	NIST
SIM.T-S3	Report in progress, Draft B	2007 - 2008	CESMEC Ltda.
SIM.T-S3	Report in progress, Draft B	2007 - 2008	INEN
SIM.T-S4	Report in progress, Draft B	2008	PTB
SIM.T-S6	Report in progress, Draft A	2012 - 2014	NIST