

KCDB REPORT TO THE 24th JCRB MEETING

At the occasion of each JCRB meeting the KCDB Office prepares a report on the status of the KCDB. Each report describes the work of the KCDB Office during the previous six-month period, and the compilation of these reports to the JCRB thus provides a complete record of the evolution of the KCDB.

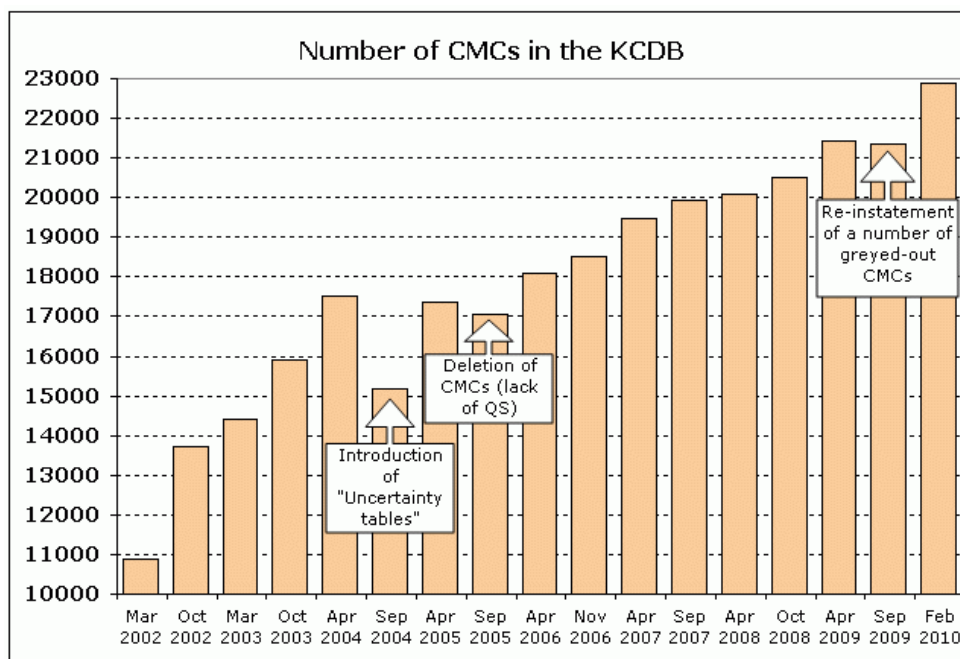
The previous report (JCRB-23/06) was presented at the 23rd meeting of the JCRB, held on 23 and 24 September 2009 in Kazan (Republic of Tatarstan, Russian Federation), and reflected the situation as at 01 September 2009. The present report covers the six-month period from 01 September 2009 to 01 March 2010.

1. The CMC database

1.1. Content of the CMC database

As of 01 March 2010, the KCDB included a total of 22 878 CMCs:

- 14 337 in General Physics,
- 3 983 in Ionizing Radiation, and
- 4 558 in Chemistry.



Number of CMCs registered in the KCDB since March 2002

Over the period covered by this Report, 35 newly approved sets of CMCs were published (see Section 1.2 below), corresponding to an additional 1 300 CMCs. This is the largest jump observed since 2004. There were also some movements related to Quality System (QS) approval (temporary removal and re-instatement of CMCs, see Section 1.3 below).

Details on the number of CMCs currently published in the KCDB, per country and per metrology area, are available in real-time from the [Statistics page of the KCDB](#) (PDF file).

1.2. New CMCs publication (since 01 September 2009) – see also [“CMCs News”](#)

Since 01 September 2009, the following sets of CMCs have been published in the KCDB:

- 08 September 2009; APMP.PR.6.2009 (CN, KR); + 20 CMCs.
- 09 September 2009; EURAMET.M.16.2009 (BG); +1 CMC.
- 10 September 2009; COOMET.QM.15.2009 (RU Cat 2, RU Cat 4, UA Cat 6); +6 CMCs;
- 17 September 2009; SIM.TF.5.2009 (CA); +7 CMCs.
- 18 September 2009; COOMET.AUV.5.2009 (RU); +4 CMCs.
- 05 October 2009; COOMET.M.10.2009 (UA); +3 CMCs.
- 09 October 2009; SIM.L.5.2009 (CL); +1 CMC.
- 12 October 2009; APMP.M.20.2009 (IN); +11 CMCs.
- 12 October 2009; EURAMET.RI.10.2009 (GR Dosimetry); +35 CMCs.
- 20 October 2009; SIM.TF.4.2008 (BR); +13 CMCs.
- 21 October 2009; EURAMET.M.14.2009 (EG); +5 CMCs.
- 23 October 2009; EURAMET.M.13.2009 (EG); +4 CMCs.
- 24 October 2009; EURAMET.M.15.2009 (ES); +2 CMCs.
- 24 October 2009; APMP.AUV.6.2009 (IN); +23 CMCs.
- 21 November 2009; EURAMET.L.7.2009 (CZ, DE, FI, HR, PT); +13 CMCs.
- 24 November 2009; APMP.TF.7.2008 (TH, JP, TW, CN, KR); +51 CMCs.
- 25 November 2009; EURAMET.TF.6.2009 (RO, SK, LT, BG, SE); +59 CMCs.
- 25 November 2009; SIM.T.5.2009 (CA); +3 CMCs.
- 26 November 2009; AFRIMETS.T.3.2009 (ZA); +6 CMCs.
- 28 November 2009; APMP.T.4.2009 (TW, KR, NZ, TH, JP); +15 CMCs.
- 10 December 2009; EURAMET.T.6.2009 (AT, BG, HR, CZ, DK, FI, FR, DE, GR, HU, IE, IT, LT, NL, NO, PL, PT, RO, RS, SK, SI, ES, SE, CH, TR, GB); **+533** CMCs.
- 11 December 2009; COOMET.T.5.2009 (RU, BY); +15 CMCs.
- 11 December 2009; APMP.QM.15.2009 (TH Cat 6, CN Cat 11); +5 CMCs.
- 12 December 2009; COOMET.QM.16.2009 (RU Cat 8); +7 CMCs.
- 14 December 2009; EURAMET.QM.18.2009 (GB Cat 01, GB Cat 03, DE Cat 13, FR Cat 13); +8 CMCs.
- 15 December 2009; COOMET.TF.4.2009 (UA); +17 CMCs.
- 16 December 2009; APMP.L.11.2009 (JP); update; 0 CMC.
- 20 January 2009; EURAMET.RI.9.2009 (DE Radioactivity); **+158** CMCs.
- 28 January 2010; SIM.QM.11.2009 (AR Cat 2, CL Cat 2, AR Cat 3, BR Cat 4, MX Cat 4, AR Cat 5, CA Cat 5, BR Cat 6, US Cat 10, AR Cat 13, CA Cat 13, MX Cat 3, US Cat 3, MX Cat 6, MX Cat 13); **+134** CMCs.
- 03 February 2010; APMP.L.10.2009 (CN); +5 CMCs.
- 03 February 2010; APMP.L.12.2009 (NZ); +18 CMCs.
- 03 February 2010; APMP.L.13.2009 (JP); +3 CMCs.
- 05 February 2010; EURAMET.T.7.2010 (AT, BE, HR, CZ, DK, FI, FR, GR, HU, IE, LT, NO, PL, PT, RO, RS, SK, SI, ES, SE, CH, TR, UK); **+96** CMCs.
- 11 February 2010; APMP.M.23.2009 (JP); +3 CMCs.
- 12 February 2010; SIM.M.11.2009 (AR); +10 CMCs.

In addition, the KCDB Office dealt with numerous corrections:

- editorial changes,
- deletion of services that are no longer available (see Section 1.4), and
- changes in laboratory names and acronyms (affecting most of the Danish laboratories for the period covered by this report).

1.3. CMCs and Quality Systems

The situation regarding deletion and re-instatement of CMCs linked to approval of appropriate Quality Systems is available from page 5 of the [Statistics section of the KCDB](#) (PDF file).

Since 01 September 2009, the following actions have been taken:

- 20 September 2009; ZA (PR); greying-out; -5 CMCs.
- 16 October 2009; MX (QM Cat 2); greying-out; -6 CMCs.
- 02 November 2009; AR (AUV); greying-out; -4 CMCs.
- 06 November 2009; MX (EM); reinstatement; +14 CMCs.
- 06 November 2009; MX (QM Cat 5); reinstatement; +7 CMCs.
- 10 November 2009; BR (M); reinstatement; +87 CMCs.
- 10 November 2009; BR (EM); reinstatement; +149 CMCs.
- 08 November 2009; US (L); greying-out; -49 CMCs.
- 08 November 2009; US (T); greying-out; -63 CMCs.
- 08 November 2009; US (M); greying-out; -102 CMCs.
- 25 November 2009; US (T); greying-out; -10 CMCs¹
- 15 December 2009; US (L); reinstatement; +49 CMCs.
- 15 December 2009; US (T); reinstatement; +73 CMCs.
- 15 December 2009; US (M); reinstatement; +102 CMCs.

As at 01 March 2010, 249 CMCs were temporarily removed (“greyed-out”) from the KCDB, compared with 491 as at 01 September 2009.

There remain, however, a number of instances corresponding to CMCs deleted in July 2005 by decision of the 15th JCRB, and for which the situation is not yet clarified.

	M	PR	EM	T	RI	L	AUV	QM	TF	Total
AFRIMETS										
ZA		5								5
Total AFRIMETS: 5										
EURAMET										
BG						1				1
FR	3									3
GR	4						8			12
LV	7		46			6				59
Total EURAMET: 75										
SIM										
MX	17	2	37		1			7		64
AR					71		4			75
CA		30								30
Total SIM: 169										
Total: 249 CMCs deleted										

*Distribution of CMCs that are temporarily removed from the KCDB
Status as at 01 March 2010*

1.4. Definitive deletion of CMCs

The KCDB Office receives very few requests for definitive deletion of CMCs, and the numbers of CMCs involved is always very small.

¹ These CMCs belong to the set SIM.T.5.2009 and were greyed-out immediately after approval.

Since 01 September 2009, the following CMCs have been definitively deleted (“pinked-out”) from the KCDB, as they correspond to services that are no longer available:

- 20 October 2009; DK (EM); pinked-out; -2 CMCs.
- 12 January 2010; ES (EM); pinked-out; -1 CMC.
- 03 February 2010; DE (L); pinked-out; -7 CMCs.
- 03 February 2010; GB (L); pinked-out; -1 CMCs.
- 03 February 2010; IT (L); pinked-out; -1 CMCs.
- 03 February 2010; NO (L); pinked-out; -2 CMCs.

2. Key and supplementary comparisons database

2.1. Content of the database

As of 01 March 2010, the database covered 680 key comparisons (82 from the BIPM, 332 from the CCs, 1 from AFRIMETS, 91 from APMP, 29 from COOMET, 111 from EURAMET, and 34 from SIM), and 231 supplementary comparisons.

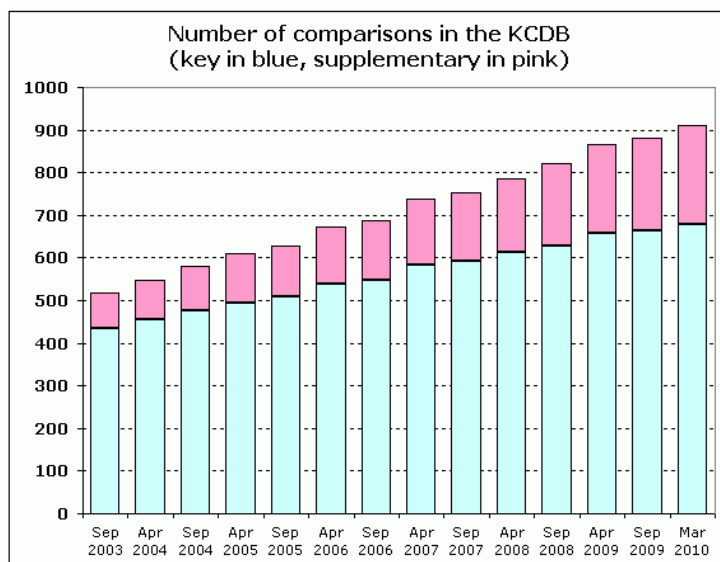
One new BIPM key comparison was registered during the last six-month period: [BIPM.RI\(I\)-K7](#) (air kerma in mammography beams), corresponding to novel work undertaken by the BIPM Ionizing Radiation Section.

The usual graphs showing:

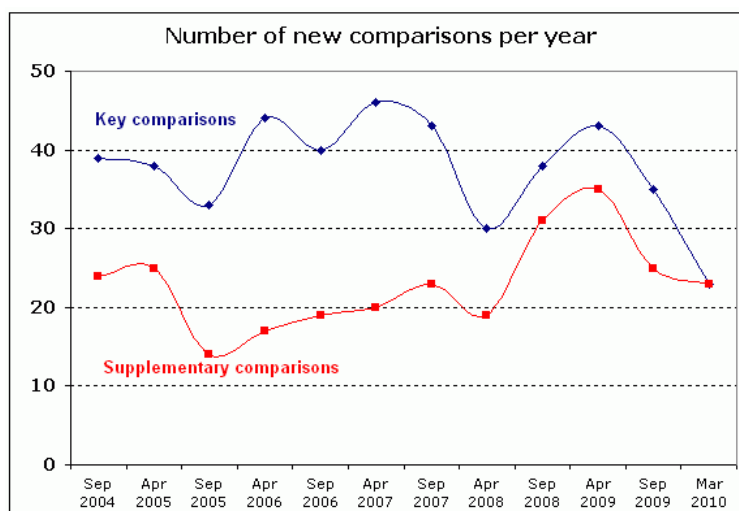
- the evolution since September 2003 of the total number of key comparisons and of supplementary comparisons registered in the KCDB, and
- the number of new key and supplementary comparisons registered in the KCDB over the one-year period ending at the date indicated on the x-axis

are given below.

It seems that the trend over the last 18 months is a slight decrease in the number of new exercises declared to the KCDB Office.



Total number of key comparisons and supplementary comparisons registered in the KCDB: evolution since September 2003



Number of new comparisons registered in the KCDB over the one-year period ending at the date indicated on the x-axis

Updated graphs (PDF files) illustrating the participation in [key](#) and [supplementary](#) comparisons were made available from the [Statistics page of the KCDB](#) on 07 December 2009.

2.2. Key and supplementary comparisons registered since 01 September 2009

Since 01 September 2009, 16 new key comparisons and 13 new supplementary comparisons have been registered in the KCDB:

- 11 September 2009: [CCM.P-K3.1](#).
- 18 September 2009: [SIM.M.M-S5](#) and [SIM.M.M-S6](#).
- 16 October 2009: [APMP.EM.BIPM-K11.3](#).
- 20 October 2009: [APMP.M.H-S3](#) and [BIPM.RI\(I\)-K7](#).
- 23 October 2009: [CCRI\(II\)-S9](#).
- 26 October 2009: [EUROMET.L-K3.1](#).
- 13 November 2009: [SIM.M.M-S7](#).
- 23 November 2010: [EURAMET.M.P-K8](#).
- 24 November 2009: [EURAMET.T-K3.2](#) and [SIM.M.P-S2](#).
- 25 November 2009: [EURAMET.RI\(I\)-S7](#).
- 10 December 2009: [EURAMET.L-K3.2009](#).
- 15 December 2009: [CCT-K3.1](#).
- 16 December 2009: [EURAMET.EM-S33](#), [EURAMET.EM-S34](#) and [CCM.P-K14](#).
- 07 January 2010: [SIM.M.M-K1](#), [SIM.M.M-K5](#) and [SIM.M.D-K3](#).
- 11 January 2010: [SIM.M.D-S2](#) and [APMP.M.M-K1.2](#).
- 26 January 2010: [SIM.M.F-S1](#) and [EURAMET.M.T-S2](#).
- 28 January 2010: [EURAMET.L-K1.2](#).
- 02 February 2010: [APMP.RI\(I\)-K1.1](#).
- 10 February 2010: [COOMET.EM-S8](#).
- 25 February 2010: [EURAMET.M.D-K2](#).

2.3. Published results of key and supplementary comparisons

As of 01 March 2010, among the 680 key comparisons that were registered:

- 87 corresponded to exercises prior to the implementation of the CIPM MRA, and will never have results published in the KCDB (they were “Approved for provisional equivalence”),

- 73 of the 82 ongoing BIPM key comparisons had results published in the KCDB; these are regularly extended as new data become available (15 new results were published since 01 September 2009), and
- another 299 CC and RMO key comparisons had their final reports approved and posted in the KCDB website, and corresponding tables of numbers and graphs entered in the database.

All together, the KCDB currently displays a total of 1 380 graphs of equivalence, including more than 70 new graphs of equivalence published over the last six months.

The results of 114 RMO key comparisons (compared with 104 at the time of the 23rd JCRB meeting) - 39 conducted by APMP, 13 by COOMET, 48 by EUROMET, and 14 by SIM - are published in the KCDB - see "[Comparisons News](#)" for a list of the most recent publications.

Linkage has also been carried out for 25 bilateral key comparisons subsequent to full-scale CC key comparisons; their results are included in the appropriate graphs of equivalence.

The most complete example of linkage concerns the family of key comparisons of 1 kg stainless steel standards, in which the results of six RMO key comparisons (APMP.M.M-K1, EUROMET.M.M-K, EUROMET.M.M-K4, EUROMET.M.M-K4.1, APMP.M.M-K6 and COOMET.M.M-K1) are linked to those of CCM.M-K1. The corresponding [graph of equivalence](#) includes 82 data points.

The final reports of 128 of the 231 supplementary comparisons registered in the KCDB were also posted in the KCDB as of 01 March 2010.

The final reports of key and supplementary comparisons posted in the KCDB are also generally published in the [Metrologia Technical Supplement](#).

3. Visits to the KCDB website

As reported previously, new software analysing the connections to the KCDB website was implemented in January 2009.

During 2009, more than 90 000 visitors opened a total of about 821 000 KCDB web pages. The number of monthly visits varied between 5 600 and 10 100, and the number of pages opened each month between 48 800 and 117 500. These counts, however, do not include the additional fraction of visitors arriving at the KCDB via our free-text search engine installed on the main BIPM website.

All pages are equally visited, including the News page, the Statistics page, and the Newsletters; and PDF files of comparison reports and of CMC lists are regularly downloaded.

Visitors come from all over the world, and reach the KCDB website from:

- personal bookmarking, direct URL address typing or using links given in e-mails for about 70 % of them,
- Internet search engines (Google, Yahoo, etc.) for about 5 % of them, and
- links proposed in other websites (especially NMI websites) for the remaining 25 %.

It is difficult to identify our visitors apart from the National Metrology Institutes which obviously constitute a part of the audience; but the numbers indicate that our site also attracts other communities, and we think that those include regulators, accreditors, and commercial and industrial companies.

4. The KCDB system

A number of changes were brought to the KCDB web programming in February 2010. These include re-structuring the box entitled "Related links" provided on the left of each KCDB web page, and also the introduction of a new web page including answers to frequently asked questions ([FAQs](#)).

5. Publicity

[Issue 12](#) of the KCDB Newsletter was published on 15 December 2010.

The [10th anniversary of the CIPM MRA](#) was officially celebrated on 8 and 9 October 2009. The conclusions of the event were reported in these terms: *“Though the last 10 years demonstrate a job well done, there are challenges ahead to ensure that the CIPM MRA stays manageable. For the way forward, the CIPM MRA and its voice, the KCDB, will play an important role in how measurand, measurement equivalence and traceability are defined and disseminated in the emerging and challenging environmental, health and nanotechnology sectors.”*

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

“Future KCDB reports to the JCRB are to include the information on CMC statistics (per RMO) thus avoiding the inclusion of this information in the RMO reports to the JCRB”.

Status as on 01 March 2010

APMP: 4 608 CMCs

COOMET: 1 658 CMCs

EURAMET: 11 514 CMCs

AFRIMETS: 368 CMCs

SIM: 4 459 CMCs

IAEA: 13 CMCs

IRMM: 248 CMCs

All details by metrology area and by country are available by clicking [here](#).

Note from the KCDB Office to the JCRB members:

1. Statistics on the content of the KCDB are prepared by the KCDB Office and are available on-line from the [KCDB Statistics page](#). This includes the number of key and supplementary comparisons (updated in real-time), and PDF files showing the participation in key and supplementary comparisons (updated every six months, as the time of each new *KCDB Newsletter* issue) and the number of CMCs by metrology area and by country (updated in real-time).
2. The EXCEL files that are used to generate the PDF files displayed in the KCDB Statistics page, are available from the [access-restricted JCRB CMC web site](#) (link “[KCDB statistics](#)”). Note that those EXCEL files track the changes and their dates, and thus allow some recollection of the history of the KCDB. In addition, many numbers that are not shown in the PDF files of statistics are given in those EXCEL files.
3. The KCDB Office provides on demand an additional EXCEL file containing the information of Appendix B of the KCDB, as a snapshot of the content of the database valid at a given date. This makes it possible to carry out statistical analysis using EXCEL functions or customized macro-functions. The file is compiled by the BIPM, using an SQL request named “Angela”, and the delivery time is about two working days.