

KCDB REPORT TO THE 23rd JCRB MEETING

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 (up-dated in real-time), and PDF files showing the participation in key and supplementary comparisons (up-dated every six months, as the time of a 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. It makes it possible to carry out statistical analysis using EXCEL functions or customized macro-functions. The file is built up by the BIPM, using an SQL request named "Angela". The delivery time is about two working days.

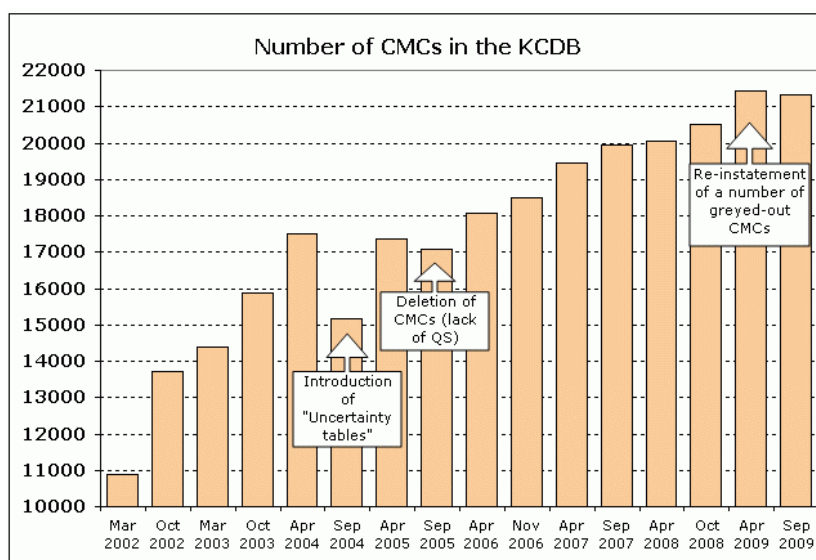
The following report gives the highlights of the work at the KCDB Office since the 22nd JCRB meeting held on 17 and 18 March 2009.

1. The CMC database

1.1. Content of the CMC database

On 01 September 2009, 21 339 CMCs were published in the KCDB:

- 13 152 in General Physics,
- 3 790 in Ionizing Radiation, and
- 4 397 in Chemistry.



Number of CMCs registered in the KCDB since March 2002

Over the last six-month period, 15 newly approved sets of CMCs were published (see Section 1.2 below) and one observed some movement linked to 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 22nd JCRB meeting) – see also “[CMCs News](#)”

Over the last six-month period, the following sets of CMCs were published in the KCDB:

- 16 March 2009: COOMET.QM.14.2008 (RU Cat 04); no changes in number of CMCs.
- 23 March 2009: EUROMET.PR.8.2008 (DE, FR, NL, FI); +8 CMCs.
- 24 March 2009: EUROMET.M.10.2008 (CH); -1 CMC.
- 24 March 2009: APMP.L.8.2009 (JP); +2 CMCs.
- 27 March 2009: SIM.TF.3.2007 (MX); +9 CMCs.
- 09 April 2009: EURAMET.EM.5.2009 (FI); -3 CMCs.
- 16 April 2009: APMP.L.7.2008 (JP); +4 CMCs.
- 08 June 2009: APMP.L.9.2009 (HK); +3 CMCs.
- 05 July 2009: EUROMET.M.9.2008 (DE); +8 CMCs.
- 23 July 2009: APMP.M.18.2008 (ID); +24 CMCs.
- 10 August 2009: AFRIMETS.QM.7.2009 (ZA Cat 11 and 15^{*}); +2 CMCs.
- 12 August 2009: APMP.QM.14.2009 (CN Cat 01, 02 and 15^{*}; HK Cat 11 and 13); +14 CMCs.
- 26 August 2009: APMP.AUV.5.2009 (HK); +15 CMCs.
- 27 August 2009: EURAMET.M.12.2009 (EG); +12 CMCs.
- 28 August 2009: EURAMET.QM.17.2009 (CH Cat 04; DE Cat 01, 03, 10, 11, 13 and 15^{*}; DK Cat 06; EU Cat 02, 05, 10, 11, 12 and 13; FI Cat 04; GB Cat 01, 04, 05, 09, 10 and 12; IT Cat 04 and 07; NL Cat 04; and SK Cat 04); +75 CMCs

In addition, the KCDB Office dealt with numerous corrections: editorial changes, deletion of services that are no more available, and changes of laboratory names and acronyms.

1.3. CMCs and Quality Systems

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

Following the EURAMET Report to the 22nd JCRB, the following actions were undertaken on 10 March 2009:

- Reinstatement of 374 CMCs declared by MKEH, Hungary; M, 60 CMCs; PR, 57 CMCs; T, 11 CMCs; L, 19 CMCs; AUV, 6 CMCs; TF, 5 CMCs; EM, 85 CMCs; RI, 104 CMCs; and QM, 27 CMCs (These CMCs had been deleted on 28 March 2008).
- Reinstatement of 143 CMCs declared by RMTCL, Latvia, in RI (These CMCs had been deleted on 01 October 2008).
- Temporary removal (“greying-out”) of 59 CMCs declared by LNMC, Latvia; L, 6 CMCs; M, 7 CMCs; and EM, 46 CMCs.

Then 3 CMCs from France (Pressure) were greyed-out on 24 April 2009, and 1 CMC from Bulgaria (Length) on 29 June 2009.

Following the APMP Report to the 22nd JCRB, all greyed-out CMCs from the APMP region were definitively deleted from the database: AU, EM, 2 CMCs; and IN, EM, 11 CMCs on 10 March 2009; then CN, EM, 21 CMCs on 27 March 2009.

* First CMCs published in Chemistry Category 15 “Surfaces, films and engineered nanomaterials”. This is a new Chemical Category that was approved by the CCQM at its 15th meeting (2009).

Following mail exchange with SIM after the 22nd JCRB meeting, a number of greyed-out CMCs from the SIM region were definitively deleted from the database on 27 March 2009. Then 33 CMCs from Mexico were greyed-out on 14 May 2009 (QM, 8 CMC; M, 11 CMCs; and EM, 14 CMCs) piling-up with those already greyed-out previously; and 236 CMCs from Brazil were greyed-out on 29 May 2009 (M, 87 CMCs; and EM, 149 CMCs).

On 01 September 2009, 491 CMCs were greyed-out from the KCDB because not covered by an approved QS. They were distributed as follows:

	M	PR	EM	T	RI	L	AUV	QM	TF	Total
EURAMET										
BG						1				1
FR	3									3
GR	4						8			12
LV	7		46			6				59
Total EURAMET: 75										
SIM										
MX	17	2	51		1			8		79
BR	87		149							236
AR					71					71
CA		30								30
Total SIM: 416										
Total: 491 CMCs deleted										

*Distribution of CMCs deleted from the KCDB
due to lack of approved Quality Systems as on 01 September 2009*

2. Key and supplementary comparisons database

2.1. Content of the database

On 01 September 2009, the database covered 664 key comparisons (81 from the BIPM, 329 from the CCs, 1 from AFRIMETS, 88 from APMP, 29 from COOMET, 105 from EURAMET, and 31 from SIM), and 218 supplementary comparisons.

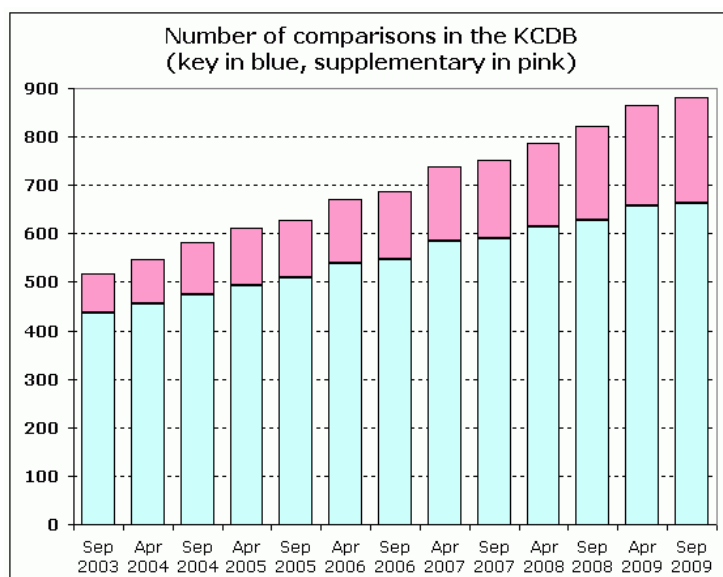
Note that two new BIPM key comparisons were recently registered in the KCDB: [BIPM.RI\(II\)-K1.Cu-64](#) (activity of radionuclide Cu-64) and [BIPM.RI\(I\)-K6](#) (absorbed dose to water in high-energy photons). They correspond to novel work undertaken by the BIPM Ionizing Radiation Section.

The usual graphs showing:

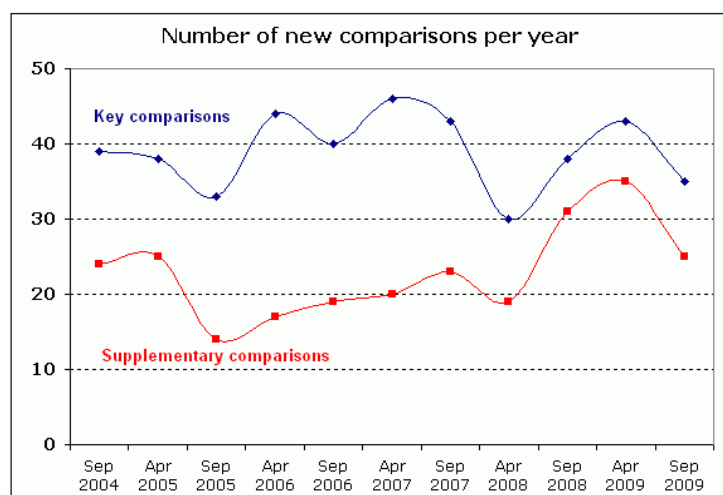
- the evolution since September 2003 of the total number of key comparisons and of supplementary comparisons registered in the KCDB, and
- the number of new key and supplementary comparisons registered in the KCDB over the one-year period ending at the date indicated on the x-axis

are shown below.

It seems that the general trend is a decrease in the number of new exercises declared to the KCDB Office. This may be a temporary phenomenon.



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 02 June 2009.

2.2. Key and supplementary comparisons registered since 22nd JCRB meeting

- 19 February 2009: [BIPM.RI\(II\)-K1.Cu-64](#) and [BIPM.RI\(I\)-K6](#).
- 28 February 2009: [CCAUV.V-K2](#) and [EURAMET.M.D-K1.1](#).
- 02 March 2009: [EURAMET.M.FF-K4.b](#).
- 05 March 2009: [EURAMET.M.G-S1](#).
- 10 March 2009: [COOMET.M.P-K14](#).
- 18 March 2009: [EURAMET.EM-S32](#).

- 26 March 2009: [APMP.M.P-K9](#).
- 30 March 2009: [AFRIMETS.T-S1](#).
- 01 April 2009: [CCQM-K71](#), [CCQM-K72](#), [CCQM-K73](#), [CCQM-K74](#), and [EURAMET.M.FF-K5.a](#).
- 08 April 2009: [COOMET.PR-S4](#).
- 10 April 2009: [CCEM.RF-K23.F](#).
- 27 April 2009: [APMP.AUV.V-K1.2](#) and [SIM.M.D-S1](#).
- 06 May 2009: [COOMET.EM.RF-S1](#).
- 07 May 2009: [APMP.T-S6](#).
- 14 May 2009: [SIM.M.D-K4](#) and [EURAMET.PR-K2.a](#).
- 22 May 2009: [EURAMET.M.P-S8](#).
- 02 June 2009: [SIM.EM.BIPM-K10.b.1](#).
- 04 June 2009: [EURAMET.M.P-K13](#).
- 08 June 2009: [COOMET.EM-S7](#).
- 15 June 2009: [COOMET.AUV.A-S1](#).
- 26 June 2009: [CCM.FF-K5.a.2](#).
- 03 July 2009: [EURAMET.L-K8](#).
- 19 July 2009: [CCRI\(II\)-S7](#), [SIM.M.M-S4](#), and [APMP.PR-K2.b.1](#).
- 20 July 2009: [APMP.PR-K2.a.1](#).
- 21 July 2009: [CCRI\(II\)-S8](#).
- 05 August 2009: [EURAMET.AUV.A-S1](#).
- 10 August 2009: [APMP.M.H-S2](#).
- 26 August 2009: [CCRI\(II\)-K2.Pu-241](#).

Identifiers including “.1”, “.2” generally indicate subsequent bilateral key comparisons to an existing key comparison.

Since the 22nd JCRB meeting, BIPM.RI(I)-S11 was deleted from the KCDB on 20 March 2009. Key comparisons EUROMET.PR-K2.a.1 and EUROMET.PR-K2.a.1 were also deleted on 14 May 2009, and grouped into a new key comparison [EURAMET.PR-K2.a](#).

2.3. Published results of key and supplementary comparisons

On 01 September 2009, among the 664 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 81 on-going BIPM key comparisons had results published in the KCDB, which are regularly extended when new data becomes available (15 new results were published since 01 April 2009), and
- another 277 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 displayed a total of 1 315 graphs of equivalence, which represents more than 200 new graphs of equivalence published over the last six months.

The results of 104 RMO key comparisons (against 93 at the time of the 22nd JCRB meeting) - 36 conducted by APMP, 10 by COOMET, 45 by EUROMET, and 13 by SIM - are published in the KCDB - see “[Comparisons News](#)” for the list of the most recent publications.

Linkage has also been carried out for 24 bilateral key comparisons subsequent to full-scale CC key comparisons; their results are added on the appropriate graphs of equivalence.

The most complete example of linkage concerns the family of “AUV.A-K1” key comparisons (Pressure sensitivity level of laboratory standard microphones LS1P) in which the results of six RMO key comparisons ([EUROMET.AUV.A-K1](#), [APMP.AUV.A-K1](#), [SIM.AUV.A-K1](#), [APMP.AUV.A-K1.1](#), [COOMET.AUV.A-K1](#), and [COOMET.AUV.A-K1.1](#)) are linked to those of [CCAUV.A-K1](#). The corresponding complete graphs of equivalence are published in the KCDB for frequencies [250 Hz](#) and [1000 Hz](#).

The final reports of 119 among the 218 supplementary comparisons registered in the KCDB were also posted in the KCDB on 01 September 2009.

Note that final reports of key and supplementary comparisons posted in the KCDB are also generally published in the series of [Metrologia Technical Supplements](#).

3. Visits to the KCDB website

A new software analyzing the connections to the KCDB website has been implemented since January 2009. The number of monthly visits since then has oscillated between 7000 and 8000, and this corresponds to a total of about 60 000 pages opened each month. It should, however, be stressed that traces from the visitors using our text-free entry search engine are not recorded in the counts given above.

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 75 % 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 20 %.

It is very difficult to identify our visitors, except National Metrology Institutes which constitute a part of the audience, but numbers show that our site attracts also other communities, and we think that this includes regulators, accreditors, and commercial and industrial companies.

4. Publicity

[Issue 11](#) of the KCDB Newsletter was launched on 15 June 2009.

The 10th anniversary of the CIPM MRA was celebrated on Wednesday 24 June 2009 at the International Congress of Metrology held in Paris ([Metrology'2009](#)), and on Monday 27 July 2009 at the [2009 NCSLI Conference](#) held in San Antonio, Texas, United States

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 September 2009

APMP: 4 447 CMCs

COOMET: 1 606 CMCs

EURAMET: 10 637 CMCs

AFRIMETS: 344 CMCs

SIM: 4 044 CMCs

IAEA: 13 CMCs

IRMM: 248 CMCs

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