

KCDB REPORT TO THE 15th JCRB MEETING

Information registered in the KCDB

1. Appendix B

Appendix B of the database now covers 633 key and supplementary comparisons conducted under the auspices of the CIPM or of RMOs. There include 508 key comparisons, 180 of which have had their results published onto the KCDB by 6 September 2005.

The ongoing BIPM key comparisons in Electricity are regularly updated with the results of new bilateral comparisons carried out between the BIPM and some National Metrology Institutes. Since October 2002, results have been approved and published for 56 of the 59 ongoing BIPM key comparisons on radionuclide activity conducted within the framework of the International System of Reference (SIR). We have also registered a new BIPM key comparison, BIPM.L-K11, of primary wavelength standards

The results of 29 RMO key comparisons (10 conducted by APMP and 19 by EUROMET) are linked to those of the corresponding CC key comparisons; the full sets of degrees of equivalence are published in the KCDB. The same type of linkage has also been carried out for 14 CC key comparisons, among which nine are key comparisons of radionuclide activity conducted under the auspices of Section II of the CCRI, and linked to the corresponding ongoing BIPM SIR Key comparisons. The five others are bilateral key comparisons subsequent to full-scale CC key comparisons; their results were added on the appropriate graphs of equivalence. A detailed analysis of the methods used to derive the key comparison reference value and to compute linkage was carried out starting from those results that are effectively published in Appendix B. This is published in [Rapport BIPM-2005/06](#).

New results approved by CCs are still communicated to the BIPM for publication via the KCDB at an average rate of about one per week.

2. Appendix C

Appendix C contained some 17 500 Calibration and Measurement Capabilities (CMCs) at the beginning of June 2005, covering all fields of metrology. Following the decision of the JCRB at its 14th meeting, held in Minsk in May 2005, CMCs that were not covered by an approved Quality System were deleted from the KCDB in July 2005. This procedure applied to 723 CMCs (79 from APMP, zero from COOMET, five from EUROMET, 94 from SADC MET, and 545 from SIM) (see Table 1 for details). Note that these CMCs are maintained in the EXCEL files, where they are highlighted in grey, and thus can be re-entered into the KCDB as soon as an appropriate Quality System is in place.

Since then, small sets of CMCs, especially in the fields of Ionizing Radiation and Time and Frequency, have been approved and published. On 06 September 2005, the KCDB Appendix C contained exactly 17069 CMCs (among which 3183 covered the field of Chemistry). The total number of uncertainty values that are displayed is around 35 000, thanks to the presentation under the form of tables.

In addition to publication of newly approved data, we undertake a daily update to respond to small corrections (mainly editorial), minor changes (increase of uncertainty values, reduction of the measurement ranges, etc.), and deletion of some CMCs (services that are no longer offered to clients).

Table 1. Distribution of CMCs deleted from the KCDB due to lack of approved Quality Systems.

	M	PR	EM	T	RI	L	Total by country
APMP							
AU			10				10
CN			21				21
IN			15				15
KR		33					33
	Total APMP: 79						
COOMET							
	Total COOMET: 0						
EUROMET							
GR	4						4
FR		1					1
	Total EUROMET: 5						
SADCMET							
ZA		60	34				94
	Total SADCMET: 94						
SIM							
MX	6	17	66				89
CL	33			4			37
BR	3						3
AR					104		104
UY	4						4
CA		30	245	14	15	4	308
	Total SIM: 545						
Total/ Met Area	50	108	345	18	119	4	
Grand Total	723						

The KCDB and the BIPM Quality System

The work of the KCDB is detailed in nine procedures that successfully passed the BIPM Quality System internal review on 31 May 2005 for the second consecutive year. Seven of these procedures describe the technical aspects of the entry of information into the databases of the KCDB; they are kept in restricted access for certain BIPM members only, and are saved on CDs placed in individual offices. The two additional procedures deal with the formal authorization processes needed before publishing data on the web; they are initially available on the BIPM intranet but may eventually be made available publicly.

Visits to the KCDB web site and publicizing the KCDB

The number of external connections to the KCDB web site has increased by 35 % over the period August 2004 – March 2005, reaching 8 600 visits in March 2005. This trend is equally shared between Appendix B and Appendix C.

We try to publicize the KCDB as often as we can through, for example, the distribution of copies of the KCDB leaflet, and the presentation of the KCDB web site at workshops and congresses.

The first issue of the KCDB Newsletter was sent to about 1000 e-mail addresses on 16 June 2004 and made available from the KCDB website, with the firm intention of issuing such Newsletters twice a year, in June and in December. Indeed, issues 2 and 3 were launched on 07 December 2004 and 14 June 2005, respectively. The KCDB Newsletter provides an ideal place for the communication of matters relevant to the CIPM MRA, the JCRB, and any other news concerning the content of Appendices B and C.

Future plans

A study group composed of three BIPM staff, the Webmaster, the IT Manager and the KCDB Coordinator, are currently studying the advantages of implementing a semantic search facility, able to interpret a text-based inquiry, on the main BIPM web site and on the KCDB web site. Several such search engines, all commercially available, are being compared. A prototype has been realized with one of them, and applied to the part of the KCDB Appendix C that covers Physics: the direct access to information appears to be largely facilitated, especially for users who have no knowledge of our traditional classifications of services.

Publications

- C. Thomas, "The BIPM key comparison database (KCDB): linkage of key comparison results," NMIJ-BIPM Workshop on the Impact of Information Technology in Metrology, May 2005, [Rapport BIPM-2005/06](#).
- C. Thomas, "The BIPM key comparison database (KCDB): technical aspects and data management," NMIJ-BIPM Workshop on the Impact of Information Technology in Metrology, May 2005, [Rapport BIPM-2005/07](#).
- C. Thomas, "The BIPM key comparison database," 12th International Metrology Congress, June 2005, published on CDs.