KCDB REPORT TO THE 18th JCRB MEETING

Visits to the KCDB web site

The total number of monthly external connections to the KCDB website has increased from 10 300 to 18 200 between February 2006 and March 2007. Details on the number of visits are given for the two main parts of the website (key and supplementary comparisons, and CMCs) in Figure 1 below.

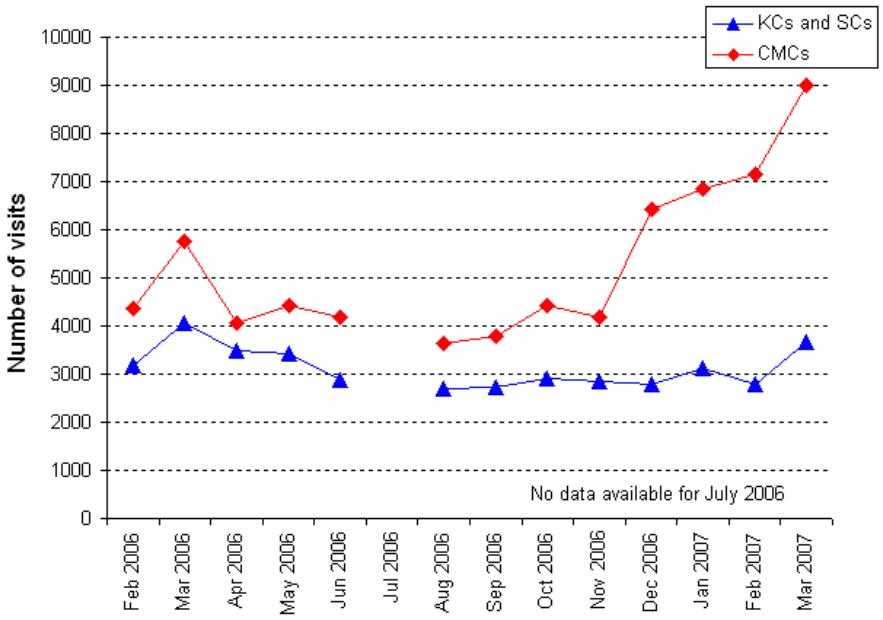

Figure 1. Number of visits to the KCDB website.

As already noticed, the database collecting information on key and supplementary comparisons is basically made "by the NMIs for the NMIs", and it seems that we have now attracted this audience: the number of visits remains stable.

The number of visits to information on CMCs has continuously increased since the creation of the KCDB. It reached an average level of one visit every five minutes in March 2007.

Redesign of the KCDB website and launch of a new search facility

The graph shown above seems to indicate that the process put in place by the launch of the CIPM MRA has become of interest to other users than our traditional audience,

mainly composed of metrologists in the NMIs. We have positive feedback that the communities of regulators and accreditors have found an interest in the KCDB website since a few years, and that this interest is growing up. In addition, it seems that more recently it has attracted the attention of commercial and industrial companies who wish to take advantage of the mutual recognition of calibration and measurement certificates issued by NMIs for establishing their traceability.

We think, however, that a large majority of our new users are not acquainted to the CIPM MRA wording and experience difficulties in this regard. For instance, the expression "key comparison database" and the acronym "KCDB" are generic terms, used to cover a complete and complex web application. The terms "Appendix A", "Appendix B" and "Appendix C", if well suited to a text with a main body, such as the text of the CIPM MRA itself, are not so easy to understand for a website.

Some users have also commented that searching information on CMCs is sometimes difficult: one has first to select a metrology area, and then items presented under the format chosen for the Classification of Services drawn up for this metrology area. These items may be instruments, such as in dimensional metrology, or quantities, such as in electricity. This can be confusing and leads the visitor to simply download one or another global PDF file from among those proposed, without using the search engine that would have delivered a well-targeted answer.

A number of actions have thus been recently taken, which led to a new design for the KCDB website, including the access to a new text-based search engine. This was made publicly available on the Internet on 6 March 2007.

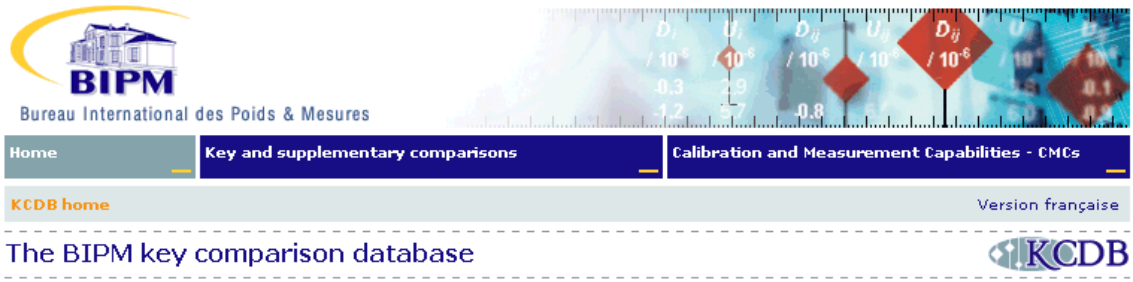

Figure 2. The current BIPM KCDB home page.

The main features of the new KCDB website are as follows:

- The list of participants ("Appendix A of the CIPM MRA") is made available in the form of searchable html pages kept on the main BIPM website.

- The KCDB home page gives access to two independent websites: the "Key and supplementary comparisons" website ("Appendix B of the CIPM MRA"), and the "Calibration and Measurement Capabilities – CMCs" website ("Appendix C of the CIPM MRA"). The word "Appendix" is mentioned in a very discreet manner, and only in the home page.

- The KCDB home page also gives access to a number of useful links, including statistics, FAQs, a glossary, and the KCDB Newsletters page.

- As reported previously, the BIPM studied the advantages of implementing a search facility that would be able to interpret a text-based inquiry. Several such search engines, all commercially available, were compared, and the BIPM purchased such software in December 2005. Our new search engine was implemented on the KCDB and publicly launched on 6 March 2007. It takes the form of free-text boxes available from the comparisons and the CMCs websites, in which the user types words[1]. The previous directed search facilities are also maintained for sake of continuity, especially the possibility of downloading .pdf files of reports on comparisons or full lists of CMCs declared by a given country and covering a given metrology area.

- The BIPM search engine is a powerful tool with the advantages of full-text searching, and dynamically generated tables of contents based on each search results page, to allow an easy means of refining the search query, as shown on Figure 3. The increase of visits to the CMCs database, which was observed In March 2007 (see Figure 1), may be interpreted as a consequence of its implementation.

[1] The BIPM search engine is also implemented on the main BIPM website. It offers a search across the websites of all institutes participating in the CIPM MRA and a number of databases maintained at the BIPM, promoting the BIPM website as the world's reference portal for metrology.

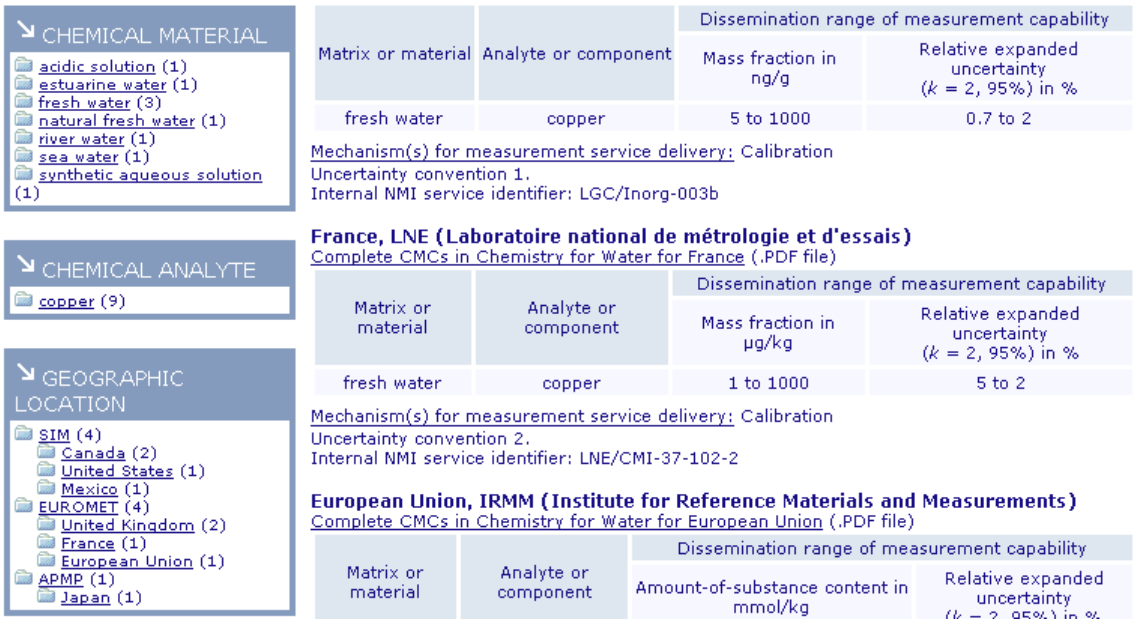

Figure 3. Results of the query "copper in water" entered in the free-text box implemented on the KCDB CMCs website. The right part of the screen displays some of the relevant CMCs. A number of contextual links are provided on the left and can be used to refine the search by geographic location of the declaring NMI, and by chemical material.

Information registered in the KCDB

- Key and supplementary comparisons

The database now covers 567 key comparisons (78 from the BIPM, 288 from the CCs, and 201 from RMOs) and 153 supplementary comparisons, which correspond to 35 new comparisons registered over the last six months.

Among the 567 key comparisons that are registered:

- 89 correspond 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", and
- 254 have their Final Reports approved and posted in the KCDB, providing a total of about 800 graphs of equivalence displayed in the KCDB (on 21 March 2006, this number was 680).

The results of 57 RMO key comparisons (against 43 at the time of last JCRB meeting) - 22 conducted by APMP, 3 by COOMET, 30 by EUROMET, and 2 by SIM - are published in the KCDB. Linkage has also been carried out for eight bilateral key comparisons subsequent to full-scale CC key comparisons; their results are added on the appropriate graphs of equivalence.

A number of BIPM key comparison results are regularly updated. In addition, new data concerning the computation of Coordinated Universal Time, UTC (key comparison CCTF-K001.UTC)[2], are published every month.

- CMCs

On 16 April 2007, 19 390 CMCs were published in the KCDB:

- 12 132 in General Physics,
- 3 463 in Ionizing Radiation, and
- 3 795 in Chemistry.

This is an additional 900 CMCs compared to the time of last JCRB meeting (see details in the CMCs News). Though Appendix C contains CMCs belonging to all global fields of metrology, some sub-fields, such as Humidity for instance, are not yet covered at all.

Following the decision of the JCRB at its 14th meeting (May 2005), 723 CMCs (79 from APMP, five from EUROMET, 94 from SADCMET, and 545 from SIM) that were not covered by an approved Quality System were deleted from the KCDB in July 2005.

At that time, no CMCs from COOMET were deleted, but the JCRB decided at its 17th meeting (October 2006) that those COOMET CMCs which have not yet formally received "Recognition" from their RMO, could not be considered as covered by an appropriate Quality System. It followed that 118 CMCs from Cuba, Ukraine and Russia were temporarily removed from the KCDB on 8 November 2006. On the same date, it happened also for another 107 CMCs in Chemistry (Water, Biological fluids, and Sediments) declared by Canada.

[2] Key comparison CCTF-K001.UTC was identified as "CCTF-K2001.UTC" until March 2007. The change of identifier is a decision of the CCTF at its 17th meeting held in September 2006.

A total of about 1000 CMCs were thus removed from the KCDB over a 16 month period, among which more than 50 % are now reinstated. The detailed situation concerning deletion and reinstatement of CMCs is summarized in Annex 1. Please note that the CMCs that were published in the KCDB, but that are currently deleted, are distinguished by a grey background in the EXCEL files. These EXCEL files are made available in the part "Get Published CMCs" of the access-restricted JCRB CMCs website.

As already mentioned in previous reports, in addition to publication of newly approved data, we undertake a daily update to respond to small corrections (mainly editorial, including change of laboratory names), 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).

Publicity

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. We will be present at the PTB-BIPM Workshop on the Impact of Information Technology in Metrology, to be held in Berlin (Germany) from 4 to 8 June 2007. The KCDB website and new search engine will also be demonstrated on Wednesday 1st August 2007 in the exhibition hall of the NCSLI Conference (Saint Paul, Minnesota, United States)[3].

Issue 6 of the KCDB Newsletter was launched on 14 December 2007. 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.

Reminder: a new page in the KCDB website

A new page entitled "KCDB Newsletter – KCDB Statistics" is available from the KCDB Home page at http://kcdb.bipm.org/kcdb_statistics.asp

[3] The BIPM is grateful to NRC for hosting the KCDB demonstration on their stand.

It gives access to the successive issues of the KCDB Newsletter and to some statistics corresponding to FAQ answers, especially it displays real-time information on the number of key and supplementary comparisons registered in the Appendix B, and on the number of CMCs published by country and by metrology area in Appendix C.

KCDB actions requested by the 17th JCRB meeting

Action 17/ 1 All COOMET CMCs currently lacking COOMET Recognition are to be removed from the KCDB. Done on 8 November 2006.

Action 17/ 2 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.9.

Status as on 17 April 2007
APMP: 3806 CMCs
COOMET: 1348 CMCs
EUROMET: 9700 CMCs
SADCMET: 334 CMCs
SIM : 3972
IAEA : 13 CMCs
IRMM : 217 CMCs

All details by metrology area and by country are available by clicking here.

Annex 1

Distribution of CMCs deleted from the KCDB Appendix C due to lack of approved Quality Systems
Status as on 17 April 2007

	M	PR	EM	T	RI	L	AUV	QM	Total
APMP									
AU			10 - 1 = 9						9
CN			21						21
IN			15						15
KR		33							33
									Total APMP: 78
COOMET									
CU	12				51				63
UA							6		6
RU			44					5*	49
									Total COOMET: 118
EUROMET									
GR	4 + 3 - 3 = 4						8		12
FR		1							1
									Total EUROMET: 13
SADCMET									
ZA		60 - 60 = 0	34 - 34 = 0						0
									Total SADCMET: 0
SIM									
MX	6	17 - 15 = 2	66 - 9 = 57						65
CL	33 - 33 = 0			4 - 4 = 0					0
BR	3								3
AR					104 - 33 = 71				71
UY	4								4
CA		30	245 - 236 = 9	14 - 5 = 9	16 - 11 = 5	4		107 - 30 = 77	134
									Total SIM: 277

Total: 486 CMCs yet deleted

black: deleted in July 2005, following decision of the 15th JCRB
red: deleted between September 2005 and September 2006
orange: deleted in November 2006
green: reinstated after QS approval
* It corresponds to one multi-component CMC including five different analytes