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20 April 2005

KCDB REPORT TO THE 14th JCRB MEETING

The BIPM key comparison database Website is available at <http://www.bipm.org/kcdb>. We describe here the evolution of the KCDB since the 13th JCRB meeting.

1. Appendix C

Appendix C content

On 20 April 2005 the Appendix C of the KCDB contained a total of 17186 CMCs distributed as follows:

- 3115 CMCs in the field of Ionizing Radiation,
- 11067 CMCs in the fields of Acoustics, Ultrasound and Vibration, Electricity and Magnetism, Length, Mass and related quantities, Photometry and Radiometry, and Thermometry, and
- 3004 in the field of Chemistry.

Since the 13th JCRB meeting, it has been enriched by the publication of some 1800 CMCs in Ionizing Radiation from APMP, SIM, and EUROMET, and also more than 300 CMCs in Chemistry covering Cycles IV and V. Published CMCs are also regularly updated.

The effective number of uncertainty values published via the Appendix C is estimated to be over 32000, as a consequence of the implementation of “uncertainty tables”, which may be used to describe the range of uncertainty values that characterizes one given CMC. This facility, which makes it possible to deliver much more precise information, is largely used in the field of Electricity. In addition, it is now recognized that it makes easier the review process.

The number of CMCs published in General Physics remained constant when compared to the number (11171) given in our report to the 13th JCRB, though new submissions are continuously getting formal approval. Indeed, when drawing up their Quality Systems, laboratories spontaneously deleted CMCs that could not be covered. They have somehow anticipated the movement that should have normally taken place after the 14th JCRB meeting.

There are not yet any CMCs in Time and Frequency included in the Appendix C database, but the EUROMET ones are currently in the approval phase. The question related to the fact that CMC declarations in Time and Frequency do not include the uncertainty component due to the device under calibration should be fixed up. In the meantime, the KCDB Office proposes to add appropriate comments to the CMCs concerned when they are approved.

Recent progress in the development of the Appendix C system

The main improvements recently introduced into the Appendix C system are two-fold:

- modification of the search engine for the Ionizing Radiation part of the database, and
- attribution of definitive and absolute URL addresses to the html pages resulting from a selection among the items proposed by the Appendix C search.

Both developments, which revealed to be much more complicated than what we thought at the beginning, were carried out in close collaboration with the outside company working with us on the maintenance of the KCDB system.

A small committee composed of three members of the BIPM staff, the BIPM Webmaster (J. Miles), the BIPM IT Manager (L. Le Mée), and the KCDB Coordinator (C. Thomas), has been set up informally since December 2004 to study the global implementation of a commercial semantic “Google-type” search engine on most of the BIPM Web applications. The first step consists in upsizing the search engine that the BIPM already owns (Verity Ultraseek). Further implementation in the Appendix C Website will necessitate that thesaurus of scientific words used in the CMCs be drawn up in collaboration with experts in each field, and also the development of an appropriate programming for the Web return.

2. Appendix B

Appendix B content

The number of CIPM and RMO key and supplementary comparisons recorded in the Appendix B database still increases continuously: on 20 April 2005, the Appendix B contained a total of 612 CIPM and RMO key and supplementary comparisons (to be compared with 580, 533, and 516 at the time of the 13th, 12th, and 11th JCRB meetings respectively), among which 494 are key comparisons.

88 key comparisons correspond to exercises prior to the implementation of the CIPM MRA, and were chosen as “Approved for provisional equivalence”. They can be archived as soon as other exercises carried out following the guidelines for key comparisons are available; we observe that this is currently not the case for any of them.

Appendix B is now displaying the results of 171 key comparisons. BIPM key comparisons have their results continuously updated with new measurements. Linkage is published for 15 EUROMET key comparisons, 9 APMP key comparisons, 4 CC bilateral key comparisons, and 9 radioactivity CCRI key comparisons (linked to the corresponding BIPM ones carried out in the framework of the SIR). All together, 29 “families” of results are available from Appendix B: 23 duos, 3 trios, 3 quartets.

Because key comparisons often encompass several values of the measurand or of an influence parameter, Appendix B currently displays about 350 graphs of equivalence, among which 47 are extended with linked results.

Appendix B design

No further change in the design of the Appendix B (database and Web system) has taken place since the launch onto the Web of our new Website on 04 March 2003.

3. Visits, publicity

Visits to the KCDB

The number of external connections to the KCDB Web site has increased by 35 % over the period August 2004 – March 2005, reaching 8600 visits in March 2005. This trend is equally shared between the Appendix B and the Appendix C.

Appendix B is actively searched. Users consult the results of key comparisons directly from the html pages of the KCDB Web site and also from the “summary results” proposed as .PDF files. The Final Reports of key and supplementary comparisons are also largely downloaded. Appendix B is made by the NMIs for the NMIs, and we think that people in NMIs are now comfortable with the Appendix B search engine.

Users access the information on CMCs by downloading the .PDF files giving the full list of services declared by countries. Only a few of them (about 10 %) are familiar with the proposed search engines that are based on Classification of Services. This is the reason why we are thinking of implementing a direct hand-typed search (see section 1) on Appendix C. We could, however, trace 280 different persons who actually went along a navigation path from the search engine to the detailed CMC information over March 2005, a performance which in itself is not so bad.

The KCDB visitors come from National Measurement Institutes, other ministry and governmental bodies, universities, and also industries. It was possible to identify some companies, and one accreditation body, having visited the KCDB Web site (see the list in Appendix). Some of the companies had already been traced over the period April 2004 – July 2004.

Publicising the KCDB

No action aiming to publicising the KCDB has been undertaken by the BIPM since last JCRB meeting.

KCDB Newsletter

We issued the 1st issue of the KCDB Newsletter on 16 June 2004, and the 2nd issue on 07 December 2004. We are currently preparing next issue for launch on 14 June 2005. The successive issues of the KCDB Newsletter are sent to about 1000 e-mail addresses and are made available from the KCDB Website. We got very little feedback, and we have very few new subscribers.

Appendix: List of industrial companies and accreditation bodies identified among the visitors of the KCDB from August 2004 to March 2005

American Honda Motor
Agilent Technologies
Boeing Company
Chevron Corporation
Exxon Mobil Corporation
F.Hoffmann-La Roche AG
Gas Natural SDG
General Electric
IBM Corporation
Micro Tel Technologies
National Instrument
Petroleos Mexicanos
Philip Morris
Volvo Information Technology AB

United Kingdom Accreditation Service