Information from the KCDB Office

reporting May 2021 –May 2023

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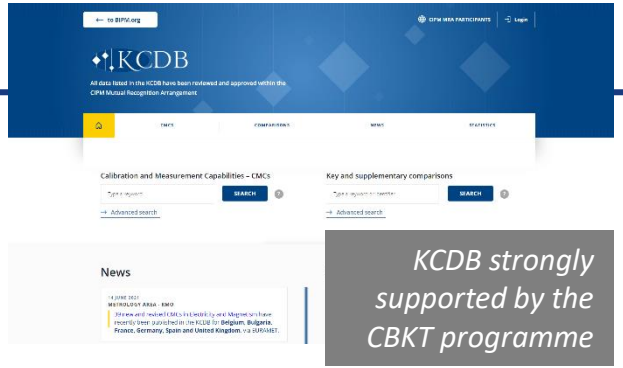
Bureau International des Poids et Mesures

CCM Meeting May 2023

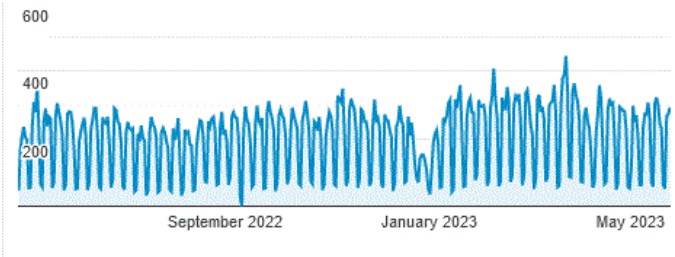
KCDB present status



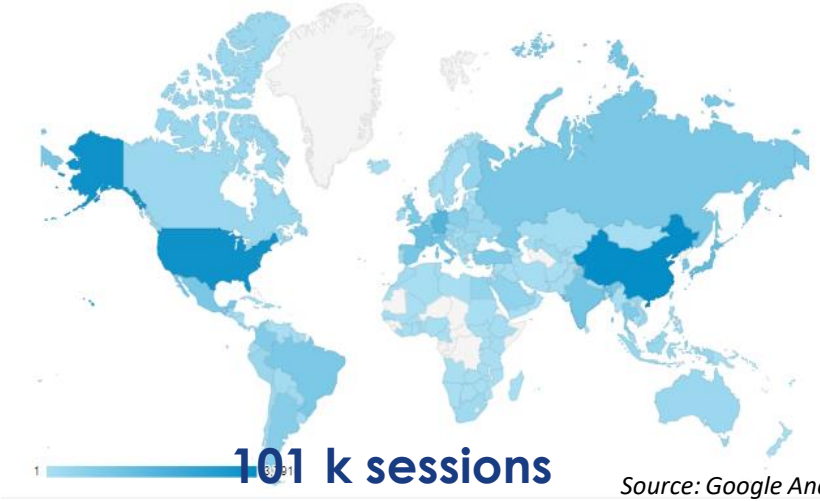
KCDB strongly supported by the CBKT programme

- Platform used daily as review support by all metrology areas
- Some 1635 individual user accounts
- Some 25 863 published CMCs and 1 825 comparisons available

May 2022 to May 2023



41 k users



101 k sessions

Source: Google Analytics

KCDB 2.0 impact

- Improved data integrity by avoiding copy/pasting and instead work on common data directly registered in the database
- Less CMC draft errors by possibility to select from an already applied vocabulary
- Reduced averaged review time as CMCs causing problems no longer hamper publication of a set of CMCs
- Reduced time for publication
- Direct access to up-to-date statistics on CMCs and comparisons for state and economies, RMOs
- New structure enables digitalization

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Table 8 JCRB review durations in days for CMCs at different times.

	2004 – 2019	45th JCRB'	Sep. 2022''	Mar. 2023	KCDB 2.0*
minimum	*not computed*	24	6	43	0
median	140	75	61	147	67
mean	188	85	95	126	98

'Computed for CMCs published from 9/2021 to 3/2022

'' Computed for CMCs published from 3/2022 to 9/2022

*Computed from the KCDB 2.0 menu 'Statistics on review performance' for the whole period since 2020-01-01

Source: KCDB Report , March 2023

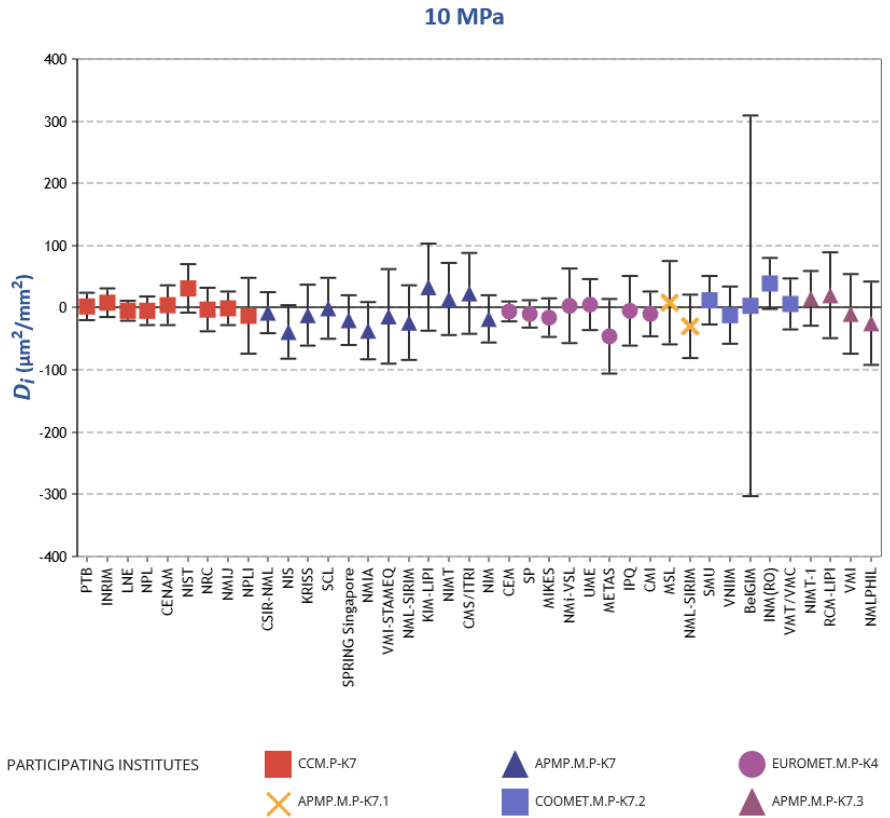
KCDB 2.0 : Key numbers for CCM Publication

- 2979 CMCs in **M** published (2023-05-23)
- 361 CMCs published on the KCDB platform amongst which
  - 158 were drafted, reviewed and approved by JCRB Review.
- 255 **KCs** in **M** published (9 Final reports published and 19 registrations)
- 207 **SCs** in **M** published (18 Final reports published and 19 registrations)

KCDB 2.0 : Publication KC results

Extended graph of equivalence

6 RMOs KCs linked to CCM KCs



KCDB 2.0 - some highlights on recent developments

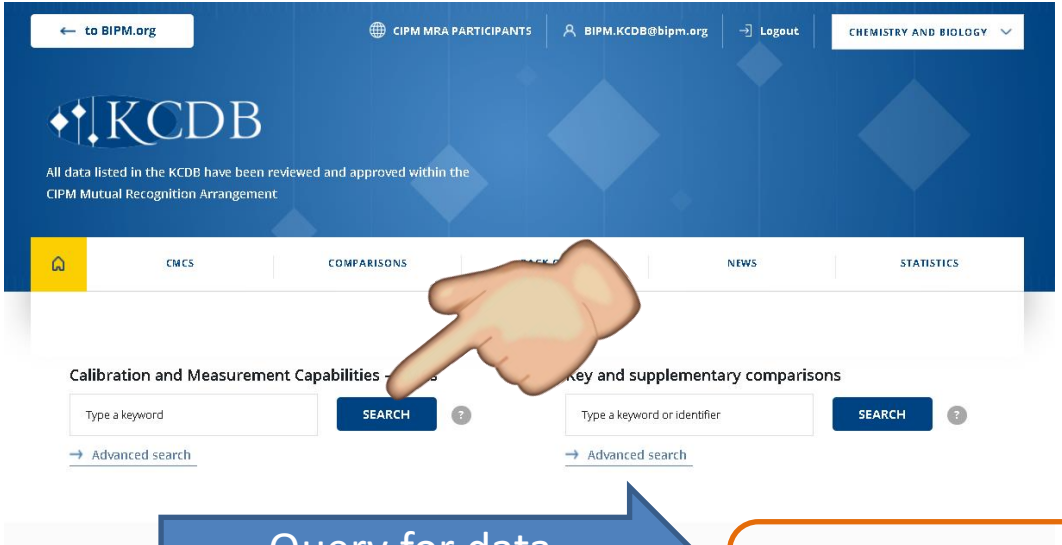
- Continuing improving the web platform based on users' feedbacks and experiences using the platform:

  New NMI Secretary user account – Institute's CMCs Overview

  Fine tuning of notifications

  New functionalities to support the review process

KCDB 2.0 : Digitalization



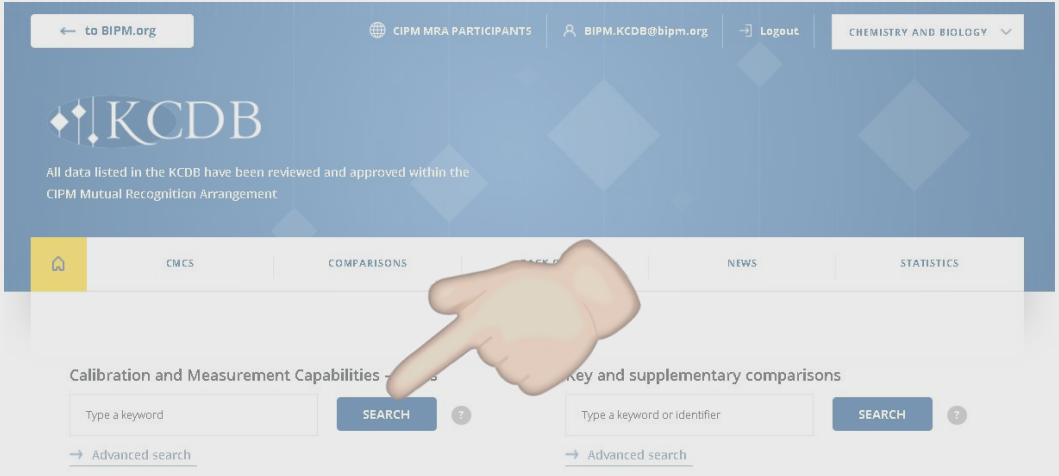
Search "manually" and see the data on the screen.

Query for data

KCDB

BIPM server

KCDB 2.0 : Query using an API



Use an API and collect machine readable data

Program software commands

Query for data

Machine readable data

KCDB

BIPM server

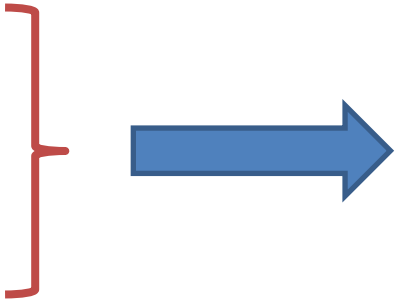
API

KCDB 2.0 : API KCDB Status

*Presently possible to carry out **menu based or key word based search for CMCs** on the KCDB using the API.*

*Targeting to fulfill the **FAIR** principles*

***F**indable*
***A**ccessible*
***I**nteroperable*
***R**eusable*



KCDB should become interoperable:

- be based on the **SI** (already achieved)
- use an accepted **web ontology**
- considering existing **standards**
- use unique **identifiers**

KCDB 2.0 : Towards digital CMCs and interoperability

At the BIPM IN PROGRESS

1) SI Digital Reference Point including:

- SI Units, prefixes
- Kinds of quantity
- Defining constants

2) Digital reference point for the service categories in PHYSICS and RI

KCDB 2.0 : Towards digital CMCs and interoperability

Possible collaboration with CCM experts:

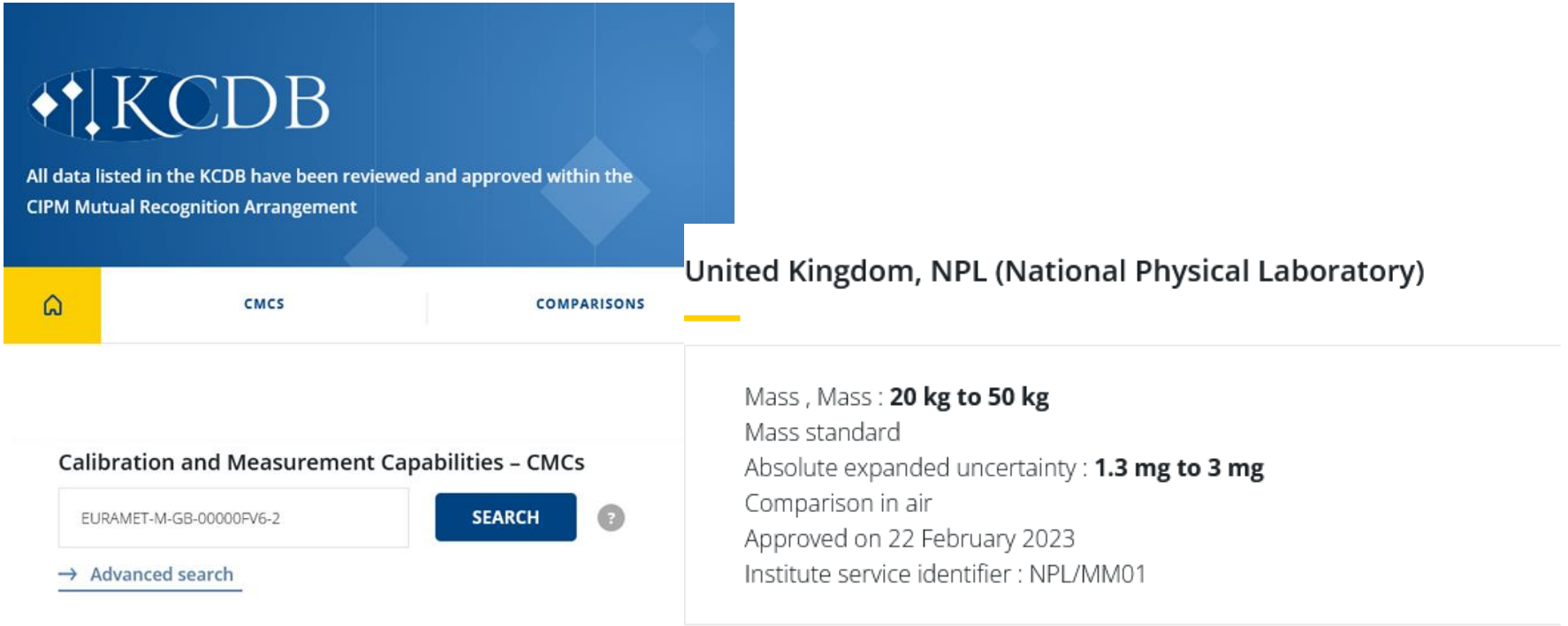
1) Data model to represent the service categories

Anticipate work with the KCDB Office and BIPM Digital Transformation Team to develop this

2) Harmonization of expression of quantities (each CMC to correspond to a kind of quantity)

- need for controlled content

KCDB QUERY – CMC ID



https://www.bipm.org/kcdb/cmc/quick-search?keywords=EURAMET-M-GB-00000FV6-2

KCDB QUERY – CMC ID

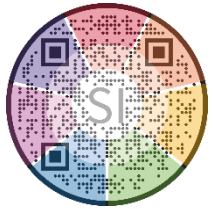
```
curl -X 'POST' \
  'https://www.bipm.org/api/kcdb/cmc/searchData/quickSearch' \
  -H 'accept: application/json' \
  -H 'Content-Type: application/json' \
  -d '{
  "page": 0,
  "pageSize": 20,
  "showTable": false,
  "keywords": "EURAMET-M-GB-00000FV6-2"

}'
```


```
{
  "versionApiKcdb": "1.0.7",
  "pageNumber": 0,
  "pageSize": 20,
  "numberOfElements": 1,
  "totalElements": 1,
  "totalPages": 1,
  "data": [
    {
      "id": 27150,
      "status": "Published",
      "statusDate": "2023-03-20",
      "kcdbCode": "EURAMET-M-GB-00000FV6-2",
      "domainCode": "PHYSICS",
      "metrologyAreaLabel": "M",
      "rmo": "EURAMET",
      "countryValue": "United Kingdom",
      "nmiCode": "NPL",
      "nmiName": "National Physical Laboratory",
      "nmiServiceCode": "NPL/MM01",
      "nmiServiceLink": "",
      "quantityValue": "Mass",
      "cmc": {
        "lowerLimit": 20,
        "upperLimit": 50,
        "unit": "kg"
      },
      "cmcUncertainty": {
```


json response

Other identifiers: CMCs



- Permanent identifier of every CMC exists
- CMC is machine accessible, reusable
- Identifier could be used by NMIs
  (e.g on NMI's homepage, on certificates)

Thank you

Bureau
International des
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