

# Minutes of CCT-TG-Dig meeting on 7 December 2023

12:00 – 13:00 UTC, online via Zoom

*Final version*

## Attending:

- Jovan Bojkovski (MIRS/UL-FE/LMK, Slovenia) [“JB”]
- Christof Gaiser (PTB, Germany) [“CG”]
- Graham Machin (NPL, UK) [“GM”]
- Patrick Rourke (TG Chairperson, NRC, Canada) [“PR”]
- Mohamed Sadli (LNE-Cnam, France) [“MS”]
- Peter Saunders (MSL, New Zealand) [“PS”]
- Shahin Tabandeh (MIKES, Finland) [“ST”]
- Inseok Yang (KRISS, South Korea) [“IY”]

## Not attending:

- Roberto Gavioso (INRiM, Italy) [“RG”]
- Yasuki Kawamura (AIST/NMIJ, Japan) [“YK”]
- Ingmar Muller (PTB, Germany) [“IM”]
- Bethany Rodman (NIST, USA) [“BR”]
- Jintao Zhang (NIM, China) [“JZ”]

## Action Items

1. PR to make a draft version of a CCT-TG-Dig recommendation to the CCT about an indexing and archiving approach for CCT documents, and circulate this draft to the TG members. The draft will be based on the discussion and decisions in sections 1) and 2) below.

### 1) Archiving approach for CCT documents

PR introduced the current lack of CCT document archiving in context of a *Guide to the Realization of the ITS-90, Part 5 – Platinum resistance thermometry* example. This is an important document, and we want all SPRT users to use it. It has changed every few years (2016, 2018, 2021), sometimes affecting uncertainty budget guidance. How can users know what has changed from one version to next? Also, only the latest 2021 version is available, stranding references to previous versions in scientific literature.

PR proposal: for each document, add a link to separate page containing past versions and changelog. Whoever changes a CCT document would write a changelog entry. Not retroactive, only added for CCT document changes from proposal adoption onwards. Previous document versions should have red text inserted at top of first page indicating they are archival and no longer represent current CCT guidance.

PR: Link text saying “Past versions” is probably most understandable.

GM: It should be up to individual Working Groups to decide which documents need a “Past versions” page.

JB: We should put all archival versions up, even if we only implement changelog entries for new versions going forward.

The TG agreed with the archiving proposal, and considered this to be long needed for CCT documents.

## 2) Indexing issues for CCT documents

### *2.1 BIPM website usability & internal search*

PR noted that important CCT documents like *ITS-90 Guide* or temperature scale definition documents are buried deep in the BIPM web and are hard to find. BIPM web internal search gives hundreds of results, all mixed together. PR asked: should these documents be featured more prominently? How?

CG, MS, JB: Agree that BIPM web usability is poor. If we want users to see something, need to make it as easy to access as possible.

JB: Rather than using BIPM internal search, he instead uses Google searches (limited to BIPM domain).

CG: Couldn't find new  $T$ - $T_{90}$  document on BIPM web, so instead resorted to a general Google search.

JB: Suggestion of which CCT documents should be available at the highest level: Guides, temperature scales. Links should feature on main CCT website, at top of page or panel at side.

GM: *MeP*-K and its annexes should also be featured there.

The TG agreed with these suggestions.

### *2.2 External search engine optimization (SEO)*

PR noted that the first regular Google “ $t$ - $t_{90}$  estimates” search result now correctly points to the new CCT  $T$ - $T_{90}$  document, following discovery & feedback by CG. But a new top “featured snippet” points to a 2011 NIST-hosted document of the old  $T$ - $T_{90}$  consensus estimate. PR would like BIPM staff to do more search engine optimization (SEO) to ensure that official CCT documents are consistently promoted.

JB: That NIST document is probably featured because it has been used a lot. When the new version gets used more and more over time, it should rise in the rankings.

JB: BIPM should do SEO. But also look into paying for advertising. Probably no one else is targeting advertising at “ $t$ - $t_{90}$ ” searches, so should be cheap and effective for BIPM to do it.

### ***2.3 How can users find out a document has been updated?***

PR again discussed the *Guide to the Realization of the ITS-90, Part 5 – Platinum resistance thermometry* example. How would users know when guidance has changed? PR proposed an RSS feed for public CCT documents.

MS: Probably not many people use RSS technology anymore.

JB: A mailing list is better. It could be disseminated at a first level through CCT channels. Second level would be to members of BIPM. Third level would be to outside organizations (accreditation bodies, etc.). Just technical documents, not a general newsletter. This way, JB would feel comfortable sharing it with clients, etc., who need to know about technical document updates.

ST: It would also be helpful to have a permanent home page link for each document.

MS: The discussion so far at this meeting mirrors issues that are regularly addressed in the context of Quality Management: document version control, communication with clients, etc. All of the CCT / other Working Groups may be interested in these topics. Are their outputs being seen? How are these being handled on BIPM web?

The TG agreed to a mailing list for new and updated CCT technical documents.

### ***2.4 Permanent resource locator links (DOIs)***

PR explained that Digital Object Identifiers (DOIs) are widely-accepted permanent digital links, and superior to current BIPM web links. BIPM has gained ability to issue DOIs, but has been busy doing so for CGPM/CIPM decisions, etc. BIPM will work on issuing DOIs for all current CCT documents in 2024.

PR highlighted integration of DOIs with the archiving proposal (section 1 above): when a document (e.g. *Guide* chapter) is superseded, the DOI should update to point to the archived version and a new DOI should be issued for the new version.

Agreement among the TG that yes, this integration is very important. Each DOI must refer to a particular version of each document and should follow that version as it becomes archived. DOI should not refer to just a general landing page containing many documents (e.g. Guides landing page).

## **3) CIPM Forum on Metrology and Digitalization (Forum-MD)**

PR presented the mission, structure and membership of Forum-MD. The CCT President has asked PR to be the CCT's digitalization representative to Forum-MD, and PR has accepted the role.

MS: Had not heard about this forum, and LNE-Cnam is not listed as a member. He will follow up with his management.

PR listed dates relevant to Forum-MD: Forum-MD kick-off meeting 21 November 2023 (PR attended; others from TG did not), Forum-MD first plenary meeting 7-8 March 2024 (PR will present formal report from CCT; other TG members not attending as part of NMI delegations), and CCT plenary meeting 13-17

May 2024 (PR will report back to CCT from Forum-MD). PR looks forward to input from the TG on the reports to/from Forum-MD.

## 4) Other CCT-TG-Dig items

### 4.1 *MeP-K*

PR reported that TG consensus on new “D” version was reached in October. Once the Rod White JNT paper is published, PR will make the final agreed updates to *MeP-K*.

CG: The JNT paper has been submitted to *Metrologia*.

MS and GM: A new high-temperature fixed points paper has been accepted to the ITS10 conference proceedings. Once this has been published, CCT-WG-NCTh will update the relevant *MeP-K* annex, then this should be reflected in the *MeP-K* “D” version references.

PR: Would like *MeP-K* “D” version to be finalized in time to present to CCT at plenary meeting in May. This may or may not happen, because depends on publication schedules.

GM and CG: Once CCT-TG-Dig has finalized *MeP-K* “D” version, it does not need to pass through CCT-WG-NCTh and CCT-WG-CTh. These WGs already have good representation in CCT-TG-Dig. It can go directly to the CCT for approval.

### 4.2. *Digital data extraction*

PR related that BIPM programmer attention is coming to the data that CCT-TG-Dig extracted in 2022. Digitizer/Checker will be contacts for each document – BIPM will reach out as needed. First for API creation will be the PLTS-2000 definition document (PR/IY). Then the ITS-90 definition document (PS/YK). Then other documents from the 2022 batch. As previously discussed, we will wait to see how this goes before extracting data from further documents.

IY: At a recent APMP meeting, the keynote speaker mentioned that the SI Brochure is now machine readable. Where is this? What is this?

PR: Maybe this is the Digital SI implementation the BIPM is working on? It was mentioned at the Forum-MD kick-off meeting in November 2023, and is in beta testing. Web address: <https://si-digital-framework.org/> or <https://si-digital-framework.org/kcdb-sc/> but they throw security errors for PR at the moment.

### 4.3. *Quantities associated with CCT Service Categories in KCDB*

PR mentioned that BIPM has renewed interest in this. PR will discuss with Janet Miles of BIPM, including the advisory role that the TG previously agreed.

### 4.4 *CCT-WG-SP meeting – 18 January 2024*

PR will report on CCT-TG-Dig at the CCT-WG-SP meeting. PR expects that the TG will have completed its original Terms of Reference by the time of the May 2024 CCT meeting.

#### ***4.5 CCT meeting – 13-17 May 2024***

PR intends to have at least one more TG meeting in March-April 2024 to discuss the future of CCT-TG-Dig with its members. There will also be a TG meeting during the week of 13-17 May 2024. At the May 2024 CCT plenary meeting, PR will bring forward a formal report and recommendations from CCT-TG-Dig to CCT.

PR: CCT-TG-Dig has been and will continue to be affected by the pace of work at BIPM as well as changing BIPM directions in the digital area.

#### **5) Any other business?**

No other business.