

**CCT comments on CIPM MRA-G-11 v1.2**

December 2021

- **Comment on KC Working Group:**

It would be good to have some mention of the possibility of having the KC protocol and report reviewed by a KC Working Group, such as that established by the CCT. If the document does not mention this, the pilots will be unaware of that opportunity to avert problems.

In section 4 Technical Protocol, it is mentioned that “in those Consultative Committees having permanent working groups or sections responsible for specific areas of activity, the draft shall be sent to the Chair of the relevant working group or section...”, but it looks more as the goal is to inform the Chair and not to have the protocol reviewed.

- **Comment on hybrid comparisons:**

Recently hybrid comparisons were introduced and some comparisons of this new type have already been conducted. Maybe the document should mention hybrid comparisons and clarify the limits of applicability of such type of comparison (only for SCs and not for KCs?).

- **Comments on traceability of the participating institute facilities:**

Before starting a comparison, the traceability route of all the participating institute facilities should be clearly established and recorded. This should include establishing at the outset that all significant aspects of the realization are traceable directly to an NMI, as required by the MRA.

In addition, the participant’s travelling standard should not itself be the participant’s top level reference instrument (realization).

- **Comment on check-lists for pilots:**

Within the CCT we developed check-lists to be used by pilots when preparing comparison protocols and reports. We believe these check-lists can help improving the quality of protocols and reports, particularly in the case of unexperienced pilots. We attach these check-lists in case they are found useful also for the other CCs.

- **Comment on dark uncertainty:**

The document mentions the need to consider taking into account dark uncertainties to ensure mutual consistency of measurement results. While a statement is made that the dark uncertainties should be included in evaluating the DoEs, there is no guidance given on the acceptance of a participant's reported uncertainty when claiming CMCs. That is, if a dark uncertainty is required to be added for mutual consistency, then at least one of the participant's uncertainties must be too low and thus should not be used as a basis for a CMC claim. Should all submitted uncertainties be increased to include the dark uncertainty component?

- **Comment on section 3.1 Initiation of comparisons (page 8/29):**

In the last paragraph of this section, it is stated that “all key comparisons shall be approved in advance by the corresponding Consultative Committee.”  
In the same section (previous sentence), it is stated that “RMO key comparisons may be initiated by individual RMOs”.

Although strictly these two statements are not contradicting each other, they could generate some confusion as, at least in our CC, RMO key comparisons are both initiated and approved at RMO level, without involving the CCT.

Moreover, in Section 5 (first sentence), it is stated that “registration of comparisons shall be made through the KCDB after having been approved to be carried out by the Consultative Committee or RMO,” thus allowing a key comparison to be approved by the corresponding RMO.
- **Comment on Section 3.2 Points for consideration (page 8/29):**

The section starts with “The organization of a CIPM key comparison is the responsibility of the pilot institute...”. Does this mean that the points for consideration listed in this section are valid only for CIPM key comparisons? What about RMO key comparisons and supplementary comparisons?
- **Comment on Section 4 Technical Protocol (page 10/29):**

In the first paragraph, it is stated that “an RMO key comparison should follow the same protocol as the preceding CIPM key comparison.” In the past years, the CCT WG-KC noticed the tendency for obsolete measurement practices to be frozen into place because of the perceived need to be consistent with earlier/parent comparisons. Maybe a clarification on which aspects of the protocol need to be frozen is necessary. In our view, not all the aspects of the protocol need to be frozen.