

## **Consultative Committee for Time and Frequency**

**(8 and 9 June 2017)**

### **Report of the CCTF Working Group on the MRA (WGMRA)**

J. Mauricio López-Romero, chairman

#### **1. Introduction**

The Terms of the Reference of the WG on MRA are:

- a. Authorization on a provisional basis for any action needed between meetings of the CCTF as indicated by the MRA, in consultation with the CCTF President;
- b. Perform coordination activities related to MRA between RMOs;
- c. Act as point of contact for BIPM and JCRB on MRA matters;
- d. Report actions to the next CCTF meeting, the CCTF revising the decisions as required;
- e. Identify areas where additional key comparisons and supplementary comparisons are needed, and develop necessary guidelines and procedures;
- f. Provide guidance on the range of CMCs supported by particular key and supplementary comparisons;
- g. Establish and maintain a list of service categories, and where necessary rules for the preparation of CMC entries;
- h. Agree on detailed technical review criteria;
- i. Coordinate the review of existing CMCs in the context of new results of key and supplementary comparisons.

The members are:

- a. Chairman : Dr J. Mauricio López-Romero (CENAM/CINVESTAV)
- b. Secretary: Dr Gianna Panfilo (BIPM)
- c. Chairpersons of the RMO technical committees for time and frequency;
- d. Experts from time laboratories : Dr Bruce Warrington (NMIA), Mr Erik Dierkx (VSL);
- e. Experts from the BIPM: Dr Gianna Panfilo (BIPM)

#### **2. Feedback of the CCTF on the implementation of the CIPM MRA revision and the KCDB 2.0.**

The main activity of the CCTF WG on MRA during this period concerned the implementation of the recommendations made by the “working group on the implementation and operation of the CIPM MRA”. To deal with these recommendations several actions have been undertaken. The work has been organized with the support of a Task Group (TG) which members were nominated for having broader expertise.

The TG members are:

- a) Dr J. Mauricio Lopez-Romero
- b) Mr Chris Matthee
- c) Dr Gianna Panfilo
- d) Dr Joseph Achkar
- e) Mr Erik Dierikx
- f) Dr Marina Gertsvolf
- g) Mr Huang-Tien Lin
- h) Dr Rimantas Miskinis

The following actions are determined by the CCTF for accomplishing the recommendations made by the working group:

- 1) Time and Frequency Supplementary Guide for Appendix B and C of CIPM MRA
- 2) Guideline on the CCTF criteria for obtaining traceability in time and frequency
- 3) A report on the state of the relationship between the List of Services and the CMCs declared.
- 4) Consolidate the relationship between the CCTF WG-MRA and the RMO

### **3. Guidelines and documents proposed to the CCTF**

The Time and Frequency Supplementary Guide for Appendix B and C of CIPM MRA reports detailed instructions for the declaration of the CMCs. In the document it is proposed to include the WG on MRA and the BIPM Time Department in the CMCs revision process.

The Guideline 6 “Rules for the participation to the computation of UTC at the BIPM” and Guideline 8 “Contribution of time laboratories to UTC” are addressed to the institutes requesting to participate to UTC computation. The difference of request from the National Metrology Institutes (NMIs), other Institutes located in a Member State of the BIPM or Associate to the CGPM and International organizations signatories of the CIPM MRA is enhanced.

The Guideline 9 “CCTF criteria for obtaining traceability in time and frequency” provides CCTF criteria for obtaining traceability in time and frequency domain.

### **4. Status of the CMCs for Time and Frequency**

At May 2017, a total of 50 countries were listed in the KCDB as suppliers of calibration services for Time and Frequency divided as follows, according to the service classification (upper level) of WGMRA Guideline 1: Time scale difference 38 countries, Frequency 50 countries, Time Interval 43 countries.

The total of CMCs in Time and Frequency recorded in the KCDB are 761.

The dates of approval of these CMCs range from 2005 to 2016 and there is no information about any periodical review from the RMOs. However, it is a common practice of the RMOs to have a CMCs review with 5 years of periodicity.

### **5. Status of Key Comparisons for Time and Frequency**

Following the decision taken at the CCTF 2012 the CCTF-K001.UTC is published on the KCDB starting from March 2015.

A new supplementary comparison has been declared in KCDB denominated by GULFMET.TF-S1.

### **6. CCTF WG on MRA meetings**

The WG on MRA meets ones in a teleconference meeting hosted by the Paris Observatory on February 17<sup>th</sup>, 2017. During this meeting the Time and Frequency Supplementary Guide for Appendix B and C of CIPM MRA document was discussed and commented. Several suggestions were made to the guidelines 6, 8 and 9.

The WG on MRA meets the 6 June 2017 before the CCTF to discuss the final version of the proposed documents, for the presentation of the new KCDB2.0 and for discussing the new declared supplementary comparison GULFMET.TF-S1.

## **7. Proposed tasks for the 19th CCTF meeting**

According to the duties assigned to the WGMRA and to the activities performed in this term, it is proposed to discuss the following documents:

- a) Guideline 6 – Rules for the participation to the computation of UTC at the BIPM
- b) Guideline 8 – Contribution of time laboratories to UTC
- c) Guideline 9 – CCTF criteria for obtaining traceability in time and frequency
- d) Time and Frequency Supplementary Guide for Appendix B and C of CIPM MRA

## **8 Annexes**

- Feedback of the CCTF on the implementation of the CIPM MRA revision and the KCDB 2.0.
- Guideline 6 – Rules for the participation to the computation of UTC at the BIPM
- Guideline 8 – Contribution of time laboratories to UTC
- Guideline 9 – CCTF criteria for obtaining traceability in time and frequency
- Time and Frequency Supplementary Guide for Appendix B and C of CIPM MRA