



***GULF ASSOCIATION  
FOR  
METROLOGY  
(GULFMET)***

**أجراء تسجيل المقارنات البينية**

***Registration Procedure  
For  
GULFMET Comparisons***

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## 1- OBJECTIVE AND SCOPE

### 1.1 Objective

The objective of this procedure is to establish the steps required to register comparisons carried out by members of the Gulf Association for Metrology (GULFMET) in the database maintained for this purpose by GULFMET and, if applicable, the corresponding BIPM database.

### 1.2 Scope

This procedure applies to past, present and planned multilateral or bilateral, key or Supplementary comparisons or pilot studies that have been initiated, organized and reviewed by a GULFMET technical committee (TC) or Working Group. (WG)

## 2-DEFINITIONS AND ACRONYMS

### 2.1 Definitions

**BIPM Key comparison database:** The database maintained by the BIPM, which contains the appendices, A, B, C and D of the CIPM MRA.

**Comparison:** Measurement by two or more NMIs of an artifact, reference material or quantity generated according to a previously established and agreed upon protocol, whose main purpose is to assess the comparability or proficiency of the participants. In this procedure, a “comparison” may refer to a key or supplementary comparison or a pilot study.

**Key comparison:** One of the set of comparisons selected by a Consultative Committee to test the principal techniques and methods in the field (note that key comparisons may include comparisons of representations of multiples and sub-multiples of SI base and derived units and comparisons of artifacts). Key comparisons may be organized by the Consultative Committees (CIPM KC) or by the Regional Metrology Organizations (RMO KC).

**Member:** The institution or organization of each GULFMET member state responsible for the custody and maintenance of its National Measurement Standards or, in its absence, the organization responsible for the National Weights and Measure System.

**Pilot study:** Measurement by two or more NMIs of an artifact, common sample or quantity generated according to a previously established and agreed upon protocol, whose main

purpose is to provide information to help the participants improve their proficiency and plan future comparisons.

**Notes:** - The actual names of the participants may or may not appear in the final report.  
- Any participant may withdraw its data from the final report.

**GULFMET Comparison Database:** The database maintained by GULFMET with the purpose of documenting calibration and measurement capabilities (CMCs) of the Members, as well as results of comparisons and pilot studies, for the purpose of promoting confidence in the capabilities of the NMIs in the GULFMET member States

**Supplementary Comparison:** Comparison carried out by the Consultative Committees, the RMOs or the BIPM to meet specific needs not covered by key comparisons, including comparisons to support confidence in calibration and measurement certificates.

**Note:** According to the BIPM KC rules, after the comparison (Key or Supplementary) was initiated, the participants may change or withdraw their data only with the agreement of all the participants and on the basis of a clear failure of the traveling standard or some other phenomenon that renders the comparison or part of it invalid.

## 2.2 Acronyms

<b>BIPM</b>	International Bureau of Weights and Measures
<b>CC</b>	Consultative Committee of the CIPM
<b>CIPM</b>	International Committee of Weights and Measures
<b>CIPM MRA</b>	Mutual Recognition Arrangement promoted by the CIPM
<b>KC</b>	Key Comparison
<b>KCDB</b>	Key Comparison Data Base
<b>JCRB</b>	Joint Committee of the Regional Metrology Organizations and the BIPM
<b>NMI</b>	National Metrology Institute
<b>TC</b>	Technical Committee

## 3 - PROCEDURE

### 3.1 Registration of a comparison or pilot study in the GULFMET Data Base

Any GULFMET NMI, or group of NMIs, wishing to have a comparison or pilot study (past, current or planned) registered in GULFMET, whether it was organized by the GULFMET TC or not, may present it for consideration to the appropriate GULFMET TC. This includes regional comparisons or pilot studies, with the participation of laboratories from other RMOs. The rules for this registration are described in 3.1.1 and 3.1.2.

#### 3.1.1 Registration of a past comparison or pilot study

The decision to register a past comparison or pilot study shall be taken by the corresponding TC, when the following conditions are met:

- a) The results are useful as supporting evidence to assess the participants current calibration and measurement capabilities
- b) A formal report is available and agreed upon by all participants
- c) If the comparison or pilot study was not conducted according to the Technical Supplement to the CIPM MRA, the corresponding TC will report any relevant deviations from current procedures, assuring that transparency and objectivity were not compromised.

If these conditions are met, the Chair of the corresponding TC shall send the final report, preferably in electronic form, to the GULFMET Secretary for registration in the GULFMET database.

### **3.1.2 Registration of planned comparison or pilot study in the GULFMET Database.**

All planned GULFMET comparisons and pilot studies shall be registered by the TCs in the GULFMET Database

All planned GULFMET key or supplementary comparisons shall be carried out in accordance with the Technical Supplement to the CIPM MRA.

In order to register a comparison or pilot study in the GULFMET Data Base, the Chair of the corresponding TC shall send a protocol to the GULFMET Secretary that includes, at least, the following information:

- a) Metrology area (quantity)
- b) Artifacts or samples to be circulated or standards involved
- c) Measurement points or interval
- d) Type of comparison (key, supplementary or pilot study)
- e) Intended Participants (name of NMI and country)
- f) Directory of contact points for participants
- g) Starting and ending dates
- h) Contact information (name, email address, etc.) within the relevant CC, if it is intended to be a key comparison

The GULFMET Secretary shall verify that the information is complete and that the protocol meets the requirements of this procedure. In such a case, The GULFMET Secretary will include it in the GULFMET Database

The GULFMET Secretary shall verify that the information is complete, assign an identification number and enter it in the GULFMET Data Base

Once the final report is ready, the Chair of the TC shall send an electronic copy to the GULFMET Secretary, requesting its inclusion in the GULFMET Database

TCs may not accept to include the results of pilot studies in the GULFMET Database however; registration of all GULFMET pilot studies shall always be done for recording purposes.

Comparisons or pilot studies organized at a regional level, without the participation of the TC, may be included in the GULFMET Database if the participants wish to do so, as long as they meet the requirements of this procedure. For this purpose, the organizing NMI shall present the protocol for consideration to the corresponding TC. The Chair will then follow the normal submission procedure, described above.

### **3.2 Registration of a GULFMET comparison in the BIPM KCDB**

GULFMET comparisons may be submitted for registration to the BIPM KCDB only after they are registered in the GULFMET Database

Designation of a comparison as a key comparison is approved by the corresponding CC. The GULFMET Secretary will forward all requests for registration of comparisons to the CC. The GULFMET Secretary shall send registration information to the coordinator of the BIPM KCDB with a copy to the Chairs of the relevant TC.

### **4- COMPLETED COMPARISONS**

Once a comparison is completed a report is generated by the pilot laboratory and agreed upon by all participants, according to the Technical Supplement to the CIPM MRA, and then submitted to the relevant TC for examination and approval.

The relevant TC produces an executive summary with recommendations it deems appropriate, including a comment as to whether the participants should modify their CMC claims to remain consistent with the comparison results. The relevant TC must judge if an outlier outcome is overall significant or whether there is other evidence that could support an existing claim.

This information is submitted by the Chair of the relevant TC to the GULFMET Secretary for registration in the GULFMET Database. The GULFMET Secretary shall send this information to the BIPM for inclusion in the KCDB.

### **5- RESULTS**

The expected results of the application of the present procedure are:

- Measurement results from comparisons or pilot studies registered in the GULFMET and, when applicable, the BIPM databases
- A list of past, current and planned comparisons and pilot studies in the GULFMET and, when applicable, the BIPM databases.

## **6- RESPONSIBILITIES**

### **Members of the TC:**

- Analyze the results of the comparisons, approve its final reports and decide on their suitability for inclusion in the GULFMET Database and/or BIPM KCDB
- Approve future comparisons and/or pilot studies.

### **Chairs of TCs:**

- Notify the GULFMET Secretary the decision of the TC to register the results of a past comparison or pilot study in the GULFMET Data Base.
- Submit reports of past comparisons to the GULFMET Secretary
- Notify the the GULFMET Secretary the information specified in numeral 3.1.2 for all current and planned comparisons and pilot studies.
- Request from the GULFMET Secretary acceptance of the results of comparisons organized by its TC in the GULFMET Data Base.
- Submit annually a program of planned comparisons to the GULFMET Secretary, in order to be presented to the Council for possible GULFMET funding.

### **GULFMET Secretary**

- Verify that the protocols of current and planned comparisons comply with the Technical Supplement of the CIPM MRA
- Verify that the reports sent by the Chairs of TCs for inclusion in the GULFMET Data Base. comply with applicable points in this procedure.
- Assure that all TCs proposals for registration of comparisons or pilot studies comply with this procedure Inform the Chairs of the TC, at the latest one month after receiving a proposal for inclusion of a comparison or pilot study in the GULFMET Data Base, any non-compliance with this procedure and recommended corrective actions, if applicable
- Authorize the GULFMET Data Base officer to include comparison information in the GULFMET Data Base., at the latest one month after receiving it from the Chair of the relevant TC.

### **GULFMET Database officer**

- Enter in the GULFMET Data Base the information sent by the Chairs of the relevant TCs and approved by the GULFMET Secretary, concerning GULFMET comparisons

- Request from the corresponding CC acceptance of the results of appropriate past comparisons in the BIPM KCDB,

**Technical Committee:**

- Consider the acceptance or rejection of GULFMET comparison or pilot study, if requested to do so by the GULFMET President.

**REFERENCES**

- SIM Document # 07/ 2002-09-05