	COOMET Recommendation	
	PROCEDURE of organization and publishing the data about calibration and measuring services of COOMET national metrological institute on COOMET web resources	**COOMET R/GM/23:2014**
Approved at the 24th COOMET Committee Meeting (Yekaterinburg, Russia, 16–17 April 2014)		

The present procedure regulates the general requirements to the activities on organization, conduction of examination and publishing the data about calibration and measuring services, provided by laboratories of national metrological institutes of the member states on web-site of Euro-Asian Cooperation of National Metrological Institutions (COOMET).

1. Terms and definitions

In this recommendation, the following terms and definitions are applied:

Mutual Recognition Arrangement for national measurement standards and for calibration and measurement certificates issued by NMIs (CIPM MRA) – technical agreement, signed under the aegis of the International Committee for Weights and Measures (CIPM) by the directors of the national metrological institutes with purpose to establish the level of equivalence of the national measurement standards and provide the mutual recognition of calibration and measurement certificates. The agreement is intended to provide governments and other bodies a solid technical base for the planning and implementation of agreements in the field of scientific and technical cooperation, international trade, business and activities related to the development of regulatory documents.

National Metrological Institute (NMI) – metrological institute, designated to be responsible for the creation, storage and application of the national measuring standards by its government (or other body of state authority).

Calibration and measurement capabilities - CMC) - the highest level of calibration or measurement, usually offered to the customers, expressed in the values of confidence level of 95%. CMC data are published in the database on the website of the International Bureau of Weights and Measures (BIPM) in the Annex C to the CIPM MRA Agreement.

Calibration and measurement services (CMS) services offered to the customers of COOMET NMI's laboratories, services of calibration of measuring instruments and measurement values at the highest level of accuracy achieved by these laboratories, including the CMC data, published in the Annex C of the CIPM MRA Agreement on the website of the International Bureau of Weights and Measures.

Metrological Traceability – the feature of measurement result, which helps to correlate the result to an internationally recognized measuring standard through the documentarily maintained continuous calibration chain, defining the uncertainty in measurement.

2. General provisions

2.1. Data on the calibration and measurement services (CMS) provided by the laboratories of COOMET NMI's and complying with the requirements set out in this Recommendation is to be published on the COOMET web resources.

2.2. If the organization-applicant has several laboratories conducting calibration and measurements in the same field the data of the laboratory reaching the highest level of accuracy in calibration and/or measurement is to be published on COOMET web resources.

2.3. National metrological institutes are obliged to provide the appropriate technical condition and working efficiency of the standards in use and other equipment, including the activities for the maintaining of their efficiency (timely international and regional comparisons and/or, calibrations, etc.), which are regulated by the statutory and exploitative documents.

2.4. NMI's declaring their CMS via COOMET web resources should implement a Quality Management System (QMS), meeting the requirements of ISO 17025 and covering the activities of laboratories offering the appropriate calibration and measurement services.

3. Order of CMS data organizing

3.1. The head of the National Metrological Institute sends to the respective COOMET Secretariat of his country the CMS data, subject to publishing on COOMET web-site in the form of Annex 1, information about technical and methodical maintenance of CMS according to Annex 2, and information about the implementation of the Quality Management System according to Annex 3 with Explanatory note (the note is to be made only by laboratories without CMS published in the database of BIPM). All data is to be presented in both paper and digital (on a CD) forms.

3.2. Explanatory note, containing the information about implementation of Quality management system (QMS) according to ISO 17025, includes:

- Information about the activities implementing and maintaining the QMS in the NMI laboratories (appointment of a person in charge of the QMS, acceptance of the plan to ensure its operation and improvement, training and staff development, etc.)
- List of the working procedures on: calibrating and measuring methods in action which are certified and registered in the set order (accounting the measurement uncertainty); on accounting and registration of measuring instruments and measured objects coming in for calibration; on maintaining and registration indoor conditions for metrological activities; on accounting of seals and stickers and etc.;
- Registration data of the metrological equipment used in the procedure, and the abidance of regulated timings of its calibration and verification;
- Information about documents acknowledging the accreditation of competence of the laboratories declaring their CMS;
- List of calibration and measurement certificates issued during the last year specifying their registry numbers, dates of issue, as well as a copy of issued certificates (one copy in each field of measurement);
- Information about conducted and planned comparisons of the applied standards and their results;
- The results of internal and external audits of QMS, specifying dates, main problems and actions for their elimination.

3.3. If the NMI generates data concerning CMC to be presented at a regional examination in accordance with the Agreement CIPM MRA, then in the column 9 "Note" of Annex 1 this fact must be written in the appropriate line on the calibration and measurement services (CMS) as well as the planned date of sending the data for analysis.

If some data concerning NMI's CMC undergoes inter-regional or regional (in COOMET framework) examination, "inter-regional expertise" or "regional expertise" is to be written in brackets in the column 9 "Note" of Annex 1 (specifying date of submitting data to the examination).

3.4. The NMI having data about its calibration and measurement capabilities posted on the BIPM website has to dispose them in accordance with the Annex 1 form, in a distinct section named "Calibration and measurement capabilities (CMC)". Also, additionally to the CIPM code, in the column 2 must be written the registration number of the table row published on the BIPM website.

4. Order of expert evaluation and publishing of CMS data

4.1. At receipt in the National Secretariat of COOMET of the NMIs documents listed in paragraph 3.1, the Secretariat within two weeks verifies the completeness and correctness of the submitted data.

4.2. In justified cases, the National Secretariat of COOMET may decide on the need for technical expertise of the submitted documents by competent expert metrologists from other NMIs. In this case, the total period of the examination shall not exceed six weeks.

4.3. If there are any significant objections to the content of documents concerning CMS, including data on the effectiveness of the QMS, the Secretariat prepares a negative conclusion about the checks and sends it by e-mail to the NMI in order to resolve issues. A negative conclusion is necessarily accompanied by an explanation of its reasons. The CMS data adjusted in accordance with the observations of the National Secretariat of COOMET must be re-sent to the secretariat by the NMI.

4.4. If there is no objections about the data submitted by the NMI concerning CMS, the National Secretariat of COOMET places the data on the page of its country in the section "Information about the NMI calibration and measurement services".

4.5. The CMS data published on the COOMET's web-resource may be published on other official COOMET's editions with permission of the NMI.

4.6. When completing the table "Information about calibration and measurement services" (Annex № 1) the following information must be mentioned:

1. Type of service (calibration and/or measurement)

2. Classification code of the International Committee for Weights and Measures (CIPM) (see "classification of services in the various fields" on the BIPM website www.bipm.org/en/cipm-mra/documents/):

AUV – acoustics, ultrasound and vibration;
EM – electricity and magnetism;
L – length;
PR – photometry and radiometry;
RI – radioactivity and ionizing radiation;
M – mass and related quantities;
QM – the amount of matter (chemistry);
T – temperature measurement;
TF – time and frequency.

3. Measured units.

4. Object of calibration and/or measurement (e.g., list of measuring instruments which can be calibrated in this laboratory, or the name of the measured parameter).

5. Measurement technique and/or method of measurement - title or brief description of the measurement method.

6. Range or level of measurements (min…max) - limit measured values indicating the units of measurement.

7. Uncertainty values (one should follow the generally accepted rules of evaluation and expression of uncertainty regulated by ISO guide to the expression of uncertainty in measurement).

8. Conditions of measurement (one should give information about specific conditions of measurements, e.g. "Normal conditions of measurement according to GOST 8.395".

9. Notes.

Annex № 1

Table 1

Information data for calibration and measurement services (CMS) _____

_____(name of the laboratory and the NMI)

Type of service	CIPM code	Metrological service			Range or level of measurement (min…max)	Uncertainty values (k = 2).	Conditions of measurement		Notes
		Measured unit	Object of calibration and/or measurement	Measurement technique and/or method			Parameter	Values	
1	2	3	4	5	6	7	8		9

For “Chemistry” (“QM” according to CIPM) the table given above has the peculiarity concerning column 4 (see Table 1A).

Table 1A

Type of service	CIPM code	Metrological service			Range or level of measurement (min…max)	Uncertainty values (k = 2).	Conditions of measurement		Notes
		Measured unit	Object of calibration and/or measurement	Measurement technique and/or method			Parameter	Values	
1	2	3	4	5	6	7	8		9
			Sub-category						
			Environment						
			Component						

Example of table 1 filling

Type of service	CIPM code	Metrological service			Range or level of measurement (min…max)	Uncertainty values (k = 2).	Conditions of measurement		Notes
		Measured unit	Object of calibration and/or measurement	Measurement technique and/or method			Parameter	Values	
1	2	3	4	5	6	7	8		9
Calibration and measurement	EM.3.1.	Range of voltage variation	Meters, multifunctional calibrators	direct method	0,0001…2 A	± 0,03 %	Temperature	20…30 ^{0}C	
							Relative humidity	40…80 %	

Example of table 1.1 filling

Type of service	CIPM code	Metrological service			Range or level of measurement (min…max)	Uncertainty values (k = 2).	Conditions of measurement		Notes
		Measured unit	Object of calibration and/or measurement	Measurement technique and/or method			Parameter	Values	
1	2	3	4	5	6	7	8		9
Measurement	QM.3.2.	Mass concentration	**Sub-category**	Gravimetric preparation, Gas chromate-graphic method (flame- ionizati-on, electron-cap-ture and mass-spectrometer detectors	0,01...1,00 mg/cm3	10...5 %			
			Organic solutions, polychlorinated biphenyls						
			Environment						
			Multicomponent organic solution						
			Components						
			Congeners of polychlorinated biphenyls						

Annex № 2

Information about technical and methodical maintenance of CMS

1. Date of information updating.

2. Name and type of the metrological equipment used in the procedure (abbreviation identifying the standard, plant, device, measure, reference material, etc.).

3. Reference of the standard (serial number, internal, or other…).

4. Producer of the standard.

5. Photographs of the standard in its workplace, with auxiliary measuring instruments and other equipment (the number of photos must be sufficient to get a visual idea of the used standard).

6. Data concerning the latest comparison of the standard, with the date and the result, as well as the print edition which published these results (to be completed for the primary standard).

7. Information on the standard's calibration with copies of the calibration certificate confirming metrological traceability of the measurement results to the internationally recognized standards with reference to the positions of the BIPM database.

8. Name and registration number of calibration and/or measurement techniques.

Annex № 3

Information about implementing and maintaining a quality management system

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(name of the laboratory and the NMI)

№	Name of parameters	Yes/No	Notes
1	Presence of a recognized QSM Person responsible of implementation the QSM		Number and date of issuance of the certificate of recognition of the QMS. First name, last name position, e-mail and telephone number.
2	Implementation of the QSM in the laboratory Having a QSM development plan in the laboratory for the current year		QMS implementation date (the date of the successful inspection on QMS implementation). The main challenges in terms of developing the QMS.
3	Issuance of certificates of calibration and measurement protocols for the last (current) year, including: - with the CIPM MRA logo - without the CIPM MRA logo		Numbers and dates of the certificates: - with the CIPM MRA logo - without the CIPM MRA logo. Numbers and dates of measurement protocols
4	Holding of the last QSM audit: - external (by an external organization) - internal (by an NMI's audit group)		Name of the organization that conducted the audit, and date. Date of the audit.
5	Presence of any comments on the audit: - significant - minor		Specify a list of observations and conducted (planned) measures to eliminate the objections, and their execution dates.

Information data

1. Coordinating organization: VNIIMS, VNIIFTRI.
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2. COOMET Project 404/RU-a/07.

3. Document was approved at the 24th COOMET Committee meeting.

4. Information about application of the document in organizations-members of COOMET.
Is recommended for application in NMIs of COOMET member-countries.