

Activity Report of COOMET TC 1.6 “Mass and Related Quantities”

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Chair of COOMET TC 1.6

17th meeting of the CCM
16–17 May, 2019



Identifier	Description	Status
MASS		
COOMET.M.M-S5	Comparison of mass standards 50 mg, 50 g, 1 kg, 2 kg	In progress
COOMET.M.M-S3	Comparison of mass standards 100 mg, 20 g, 1 kg, 10 kg	Report in progress
COOMET.M.M-S2	Supplementary bilateral comparison 200 mg, 1g, 50 g, 200 g, 1 kg	Report in progress
COOMET.M.M-S4	Comparison of mass standards 5 kg, 500 g, 20 g, 2 g and 100 mg	Completed

Identifier	Description	Status
PRESSURE		
COOMET.M.P-S3	Comparison of pressure standards in the range of 250 MPa to 1500 MPa	Planned
COOMET.M.P-S2	Pressure measurements (absolute mode) 0.03 Pa, 0.09 Pa, 0.3 Pa, 0.9 Pa, 3 Pa, 9 Pa, 13 Pa	Measurement completed
COOMET.M.P-K15	Pressure measurements (absolute mode) 0.3 mPa, 0.9 mPa, 0.003 Pa, 0.009 Pa, 0.03 Pa, 0.09 Pa, 0.3 Pa, 0.9 Pa	Measurement completed
COOMET.M.P-S1	Comparison of standards of gauge pressure 1 MPa to 10 MPa	In progress

Identifier	Description	Status
HARDNESS		
COOMET.M.H-S2	Bilateral comparison of national reference instruments for nanoindentation	Measurement completed
COOMET.M.H-S3	Comparison of national hardness standards of Superficial-Rockwell scales	Measurement completed
COOMET.M.H-K3	Key comparison of national hardness standards of Rockwell scales	Report in progress, Draft B
COOMET.M.H-S4	Brinell Hardness	Report in progress, Draft B
FORCE		
COOMET.M.F-S1	Comparison of force standards 20 kN, 50 kN, 100 kN, 250 kN, 500 kN, 1000 kN and 2000 kN	Report in progress, Draft B

Identifier	Description	Status
DENSITY		
COOMET.M.D-S1	Density of liquids	Protocol completed
STATIC VOLUME		
COOMET.M.FF-S6	Comparison of the determination of static volume of reference metallic tanks	In progress
COOMET.M.FF-S8	Liquid volume Volume at 0.5 μL to 10 μL ; 10 μL to 100 μL ; 100 μL to 1000 μL ; 50 mL	Report in progress
COOMET.M.FF-S8	Liquid volume Volume at 10 μL and 1000 μL	Planned

NMI	Sub-field	Identifier	Status
AzMI (Azerbaijan)	Mass		Under intra-regional review
AzMI (Azerbaijan)	Pressure	COOMET.M.32.2018	Under inter-regional review
AzMI (Azerbaijan)	Viscosity	COOMET.M.31.2018	Published
VNIIM (Russia)	Pressure	COOMET.M.30.2018	Published
KazInMetr (Kazakhstan)	Viscosity	COOMET.M.29.2018	Published
UkrMetrTestStandard (Ukraine)	Force	COOMET.M.26.2015	Published
NSC IM (Ukraine)	Gravity	COOMET.M.14.2013	Published
UNIIM (Russia)	Torque	COOMET.M.28.2017	Published

- **Guideline on the calibration of mass standards**
(contains requirements to calibration certificate & interactive form for calculating value of mass and its uncertainty)
Working Group: GeoSTM, Georgia, NIM, Moldova, NSC IM, Ukraine
- **Guideline on the calibration of pipettes and dispensers**
Working Group: GeoSTM, Georgia, VNIIM, Russia, NSC IM, Ukraine
- **Guideline on the report of comparison**
Working Group: VNIIM, Russia, NSC IM, Ukraine

Training course on the volumes “piston pipettes” and “multidispensers” (within PTB-COOMET project)

**17 participants
from
12 COOMET NMIs**

March, 2018



25th International Conference on Vacuum Technique and Technology 2018

More than
200 participants

June, 2018

More than 90 papers

Organizers:



VNIIM

**COOMET
TC-M 1.6**



ETU "LETI"
SAINT PETERSBURG ELECTROTECHNICAL UNIVERSITY



**Russian
Vacuum
Society**



POLYTECH
Peter the Great
St. Petersburg Polytechnic
University

22nd Meeting of COOMET TC-M 10 – 11, October, 2017, Minsk, Belarus



23rd Meeting of COOMET TC-M

28 – 30, August, 2018,
Sarajevo,
Bosnia and Herzegovina



MoU between COOMET and EURAMET



Memorandum of Understanding

Between

The European Association of National Metrology Institutes, EURAMET e.V., (in the following referred to as "EURAMET"), represented by the EURAMET Chairperson,

and

The Euro-Asian Cooperation of National Metrology Institutions (in the following referred to as "COOMET"), represented by the COOMET President,

Preamble

EURAMET is the European Association of National Metrology Institutes. It coordinates the cooperation of National Metrology Institutes (NMI) of Europe in fields like Research in metrology; Traceability of measurements to the SI units; Knowledge exchange & infrastructural support in Metrology; International recognition of national measurement standards and of the Calibration and Measurement Capabilities (CMC) of its members. Among these tasks, EURAMET is responsible for the elaboration and execution of European Metrology Research Programmes.

COOMET is an organisation for the Euro-Asian cooperation of National Metrology Institutions (from the countries of Central and Eastern Europe, Asia and nearby countries) and is open to the National Metrology Institutions of countries from other regions to join it. The principal fields of cooperation within COOMET include: Realisation of the CIPM MRA; Establishment and maintenance of the national primary measurement standards of SI units; Solution of problems on general metrology, including problems of the theory of measurement and uncertainties, system of units, terminology; Creation and use of reference materials of composition and properties of substances and materials; Coordination of issues on legal metrology between member countries; Creation and implementation of Quality Management Systems in NMIs; Support in developing basic metrological infrastructure of COOMET member countries; Raising proficiency level and work with young metrologists.

Whereas:

- COOMET and EURAMET are two Regional Metrology Organisations within the Joint Committee of Regional Metrology Organisations of the Metre Convention (JCRB).
- Both organisations fully recognise each other's objectives and realise the complementarity of their activities.

- COOMET and EURAMET have commonalities in terms of members and strategic interests.
- Both organisations realise the necessity of joint efforts for better visibility and recognition of metrology in their regions.

All the above being stated, COOMET and EURAMET have reached the following understanding:

Article I. Scope

- (1) In order to continue the existing cooperation and to provide a mechanism for current and future activities, EURAMET and COOMET hereby agree to pursue cooperation in accordance with this Memorandum of Understanding.
- (2) Forms of cooperation may include, but are not limited to areas of mutual interest as:
 - research in metrology
 - traceability of measurements to the SI units,
 - inter-laboratory comparisons,
 - knowledge exchange,
 - joint publications.

Article II. Cooperative Activities

- (1) Joint activities under this Memorandum of Understanding are subject to the applicable rules of each Party, as well as the funds and personnel available to the Parties or their members respectively.
- (2) Delegations of EURAMET and COOMET will meet on an annual basis. e. g. aside the JCRB meeting, to discuss actual matters and strategic orientation of the cooperation.
- (3) EURAMET and COOMET will mutually invite their TC-Chairs to the annual meetings of the TC in their organisation, this applies to the meetings of the Technical Committees for Quality, Information and Training and Interdisciplinary Metrology particularly.
- (4) EURAMET and COOMET will cooperate in the field of Capacity Building, e. g. by
 - mutual invitation to, or joint organisation of Capacity Building events, where appropriate,
 - exploring opportunities to hold joint workshops within the BIPM Capacity Building and Knowledge Transfer Programme (CBKT).
- (5) EURAMET and COOMET may arrange joint promotional, educational, technical, or scientific initiatives, such as conferences, seminars, workshops, training courses, joint publications and other pertinent activities.

- (6) The Parties will each appoint a person responsible for the coordination of the activities.

Article III. Participation in European Metrology Research Programmes

EURAMET and COOMET will facilitate the participation of COOMET members in the European Metrology Research Programmes, with measures such as

- workshop, explaining possibilities, procedures and logistics to COOMET NMIs and DIs for participation in the European Metrology Programme for Innovation and Research (EMPIR),
- invitation to COOMET members to participate in preparation meetings for EMPIR activities, where appropriate,
- preparation of guidance documents for participation in the European Metrology Research Programmes in Russian and English language.

Article IV. Annual activity plan

An activity plan should be established and regularly reviewed and updated at the annual meetings of the delegations.

Article V Amendment

The Parties may agree to modify this Agreement anytime by written amendment signed by their authorised representatives.

Article VI. Duration and termination

This Memorandum of Understanding is made for a period of five years from the date of its entry into force, unless a written notice of termination is given by one of the Parties prior to the expiration of the five-year term. In such a case the termination shall take effect three months after the date of receipt of the written notification to the other Parties.

Done in two copies,

Date: 12.04.2018

EURAMET


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Dr Beat Jeckelmann

Date: 12.04.2018

COOMET


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Dr. Valery Hurevich

Thank you for your attention!

**Next COOMET TC-M Meeting
16 - 20 September, 2019
St.-Petersburg, Russia**