

1. General Aspects

The EURAMET Mass and Related Quantities Technical Committee, TC-M, is characterized by the mass and a number of related quantities and by the diversity of techniques employed in the realization of the corresponding units. Nevertheless, nowadays there are two dominant issues, one is the redefinition of the kilogram, which has definitely determined the activities of some NMIs and is reflected in EURAMET projects, and the other one is the EMRP, where many institutes are collaborating very actively.

2. Projects

For the period under review (May 2014 – May 2015) the number of proposed, agreed and completed projects in the various categories in TC Mass are shown in the table below. The previous year's numbers are shown in brackets.

	Comparison	Research	Traceability	Total
Proposed	15 (12)	2 (2)	0(0)	17 (14)
Agreed	20 (19)	5 (5)	3 (3)	28 (27)
Completed	56 (54)	40 (40)	7 (7)	103 (101)
Total	91 (85)	47 (47)	10 (10)	158 (142)

3. Comparisons

There are 38 registered European key comparisons in the area of Mass and Related Quantities (4 more than last year). There are also 36 supplementary comparisons (1 more than last year). At the moment several key comparisons under the CCM are being prepared, when these comparisons are finished the correspondent EURAMET comparison will have to be initiated.

4. CMCs

Concerning EURAMET submissions, the following is an update since May 2014.

Submission	NMI	Field	CMCs	State
EURAMET.M.37.2014	PTB, Germany	bending stiffness	new	published
EURAMET.M.38.2014	CMI, Czech Republic	pressure	reviewed	published
EURAMET.M.39.2015	CEM, Spain	mass	reviewed	published
EURAMET.M.40.2015	DPM, Albania	mass	reviewed	under review
EURAMET.M.41.2015	IMBiH, Bosnia-Herzegovina	mass	reviewed	under review

It is remarkable to notice that PTB is the only institute in the whole world who has CMCs for bending stiffness.

5. Participation EMRP

TC Mass members were actively involved in EMRP call 2010 (area Industry), taking part in the following projects:

Number	Short name	Full Name
IND03	HIGHpress	High Pressure Metrology for Industrial Applications
IND09	Dynamic	Traceable Dynamic Measurement of Mechanical Quantities
IND12	Vacuum	Vacuum metrology for production environments

These projects started in the last term of 2011 and were finished in 2014.

TC Mass members are actively involved in EMRP call 2011 (area SI Broader Scope taking part in the following projects:

Number	Short name	Full Name
SIB03	KNOW	Realisation of the awaited definition of the kilogram - resolving the discrepancies
SIB05	NewKILO	Developing a practical means of disseminating the new kilogram

These new projects will provide very important results for the “new definition of the kilogram” and its practical realization. These projects started in the last term of 2012 and have just finished.

For EMRP call 2012 (area SI Broader Scope) the following JRP has been selected:

Number	Short name	Full Name
SIB63	Force	Force traceability within the meganewton range

Our participation in EMPIR has been very successful too.

Two projects were chosen for the industry call:

Number	Short name	Full Name
14IND06	Pres2Vac	Industrial standards in the intermediate pressure-to-vacuum range
14IND14	NMm Torque	Torque measurement in the MN·m range

One project was chosen for the research potential call:

Number	Short name	Full Name
14RPT02	Weighing	Traceable calibration of dynamic weighing instruments

And two projects were chosen for the SIP call:

Number	Short name	Full Name
14SIP01	SIP-IND12	IND12 Vacuum
14SIP08	SIP-IND09	Dynamic

6. Meetings

The 2015 Mass and related quantities TC Contact Persons meeting was held in Sarajevo, Bosnia and Herzegovina on the 17th April and, as usual, was preceded by technical meetings for the various subfields to review progress in projects and discussion of technical issues in mass, force and torque, pressure, density and viscosity. During this meeting we enjoyed the following invited talks:

1. "Presentation of IMBiH"(Sejla Alisic, IMBiH)
2. "Redefinition of the kilogram"(Horst Bettin, CCM WG Rkg)
3. "Extraordinary Calibrations at BIPM"(Michael Stock, BIPM)
4. "New GUM"(Lars Nielsen)
5. "Need for a Subgroup on Gravimetry" (Alessandro Germak)

Apart from representatives of the BIPM it has become usual to have representatives from GULFMET in our meeting.



We had also meetings related to two EMRP projects in progress (SIB05“NewKILO” and SIB63 “Force Metrology”) and specific meetings for EURAMET projects (1205 “Review of EURAMET cg 18”). We also had a meeting of the CCM Working Group Force.

Specifically from the project EMRPSIB05“NewKILO” we had a very interesting workshop to present the results of the project where representatives not only from the national metrology institutes but also from the industry attended.

In total around 90 people attended the EURAMET TC Mass meeting itself and/or the other sessions in Sarajevo this year.

7. Issues

7.1 EURAMET Calibration Guide 18

The EURAMET Calibration Guide 18 “Guidelines on the Calibration of Non-Automatic Weighing Instruments” is under revision. This work is under EURAMET project 1205.

A special meeting about this project was held in Sarajevo, Bosnia and Herzegovina on 13th-14th April.

In these meetings there were participants not only from NMIs but also from the industry which manufactures non automatic weighing instruments. They all have been very successful and it is expected that the new version of the guide will be finally published in 2015.

7.2 EURAMET Calibration Guide 17

The EURAMET Calibration Guide 17 “Guidelines on the Calibration of Electromechanical Manometers” is under revision. It is expected that the new version of the guide will be finally published in 2015.

8. Outlook for 2015/2016

Next year’s activity will be largely dominated by the work on the kilogram redefinition, especially concerning its *mise en pratique*, and by the related work of the projects EMRP-EMPIR.