



## ANNUAL REPORT

### on the activity of the Joint Committee on Measurement Standards COOMET in the year 2019

In the first part of the report the summary on JCMS activity in 2019 is given. The detailed information is given in the reports of the technical committees TC1.1-TC1.12 chairs

#### 1. Meetings of TC 1.1 -1.12

TC	Time and venue
TC 1.1	01 July 2019, Saint-Petersburg, Russia
TC 1.2	27-29 August 2019, Moscow, Russia
TC 1.3	22-24 October 2019r, Chisinau, Republic Of Moldova
TC 1.4	3 September 2019, Kazan, Russia
TC 1.5	17 – 20 September 2019, Tbilisi, Georgia
TC 1.6	01-02 October 2019, Saint-Petersburg, Russia
TC 1.7	10-12 September 2019, Bratislava, Slovakia
TC 1.8	22–23 May 2019, Saint-Petersburg, Russia
TC 1.9	17-19 September 2019, Kishinev, Moldova
TC 1.10	27-29 August 2019, Irkutsk, Russia
TC 1.11	10-11 October 2019, Gebze, Turkey
TC 1.12	25 September 2019, Minsk, Belarus

#### 2. COOMET projects completed in 2019

No	COOMET project KCDB ID	Name	Pilot	Participants
1	755/RU-a/18	Pilot comparisons in the field of measurements of porosity (pore size, specific pore volume) of aluminium oxide using mercury intrusion	UNIIM	UNIIM (Russia); BAM (Germany) other COOMET member - countries
2	754/RU-a/18	Pilot comparisons in the field of measurements of porosity and permeability of rock	UNIIM	UNIIM MNREGB of "SPC for Geology" Ecogeosprom TNNC, Tyumen Kogalymneftegaz

No	COOMET project KCDB ID	Name	Pilot	Participants
3	<b>646/RU/14</b>	Pilot comparisons of calibrations of water particle oscillation velocity receivers in the frequency range 5 Hz to 4,0 kHz	HAARI	VNIIFTRI HAARI
4	<b>793/RU/19</b>	Organization and conduct of the 24th meeting of COOMET Technical Committee 1.12 "REFERENCE MATERIALS" (TC 1.12 "RMs")	UNIIM	BelGIM UNIIM other COOMET member - countries
5	<b>583/RU/12</b>	Pilot comparison: determination of dissolved oxygen in water concentration at the wide range	VNIIFTRI	VNIIFTRI VNIIM BelGIM
6	<b>710/RU-a/16 COOMET.EM-S23</b>	Carrying out supplementary bilateral comparison of pulse voltage	VNIIFTRI	BelGIM VNIIFTRI
7	<b>709/RU-a/16 COOMET.EM-S24</b>	Carrying out supplementary bilateral comparison for the standard of the harmonic coefficient	VNIIFTRI	BelGIM VNIIFTRI
8	<b>722/AZ/17</b>	Bilateral supplementary comparison using reference standards with nominal values of 100 mg, 2 g, 20 g, 500 g, 5 kg of E2 accuracy class.	CMI	AzMI CMI
9	<b>658/BY-a/15</b>	Comparisons of national measurement standards for deviations from linearity and flatness; the measurement range for deviations from linearity is 0 to 50 $\mu\text{m}$ , the surface length is 0.4 to 5 m.	BelGIM	BelGIM KazInMetr
10	<b>634/UA-a/14</b>	Comparison of measurement standards of gravitational acceleration unit in the range of 9.77 m/s <sup>2</sup> to 9.85 m/s <sup>2</sup>	NSC "Institute of Metrology"	INRIM NSC "Institute of Metrology"
11	<b>668/RU/15</b>	Revision of Development of COOMET R/GM/11:2010 "REGULATIONS for comparison of measurement standards from the national metrological institutes of COOMET"	VNIIM	VNIIM COOMET (Interested members)
12	<b>568/UA-a/12</b>	Comparisons of reference measuring instruments of surface parameters	NSC "Institute of Metrology"	NSC "Institute of Metrology" VNIIMS
13	<b>625/RU/13</b>	Pilot study (comparison) of time scales of NTP-servers via INTERNET	VNIIFTRI	VNIIFTRI NSC IM VMT/FTMC
14	<b>598/RU-a/13</b>	Pilot comparisons of national standards in the measurement of specific heat of solids The goal of the project preparation of participating laboratories for key	UNIIM	UNIIM NSC "IM"

No	COOMET project KCDB ID	Name	Pilot	Participants
		comparisons in the field of thermophysical quantities		
15	594/RU/13	Organization of the seminar "Calibration of platinum resistance thermometers by the method of direct comparison in thermostats". The goal of the project is the exchange of experience in the field of calibration of reference and industrial resistance thermometers.	VNIIM	State Committee for Standardization, Metrology and Patents of the Republic of Azerbaijan; VNIIM BelGIM KazInMetr NSC "Institute of Metrology" FSUE "National Research Institute for Physical-Technical and Radio Engineering Measurements" GEOSTM NISM CSM of ME KR SMU
16	593/RU/13 COOMET.T-K3.3	Regional key comparisons of national measurement standards of temperature in the range from 0.01 °C to 660.323 °C	VNIIM	BelGIM GEOSTM KazInMetr NSC "Institute of Metrology" VNIIM
17	549/RU-a/12	The pilot thermal conductivity comparison in the range from 0.03 to 0.2 W·m <sup>-1</sup> ·K <sup>-1</sup> at temperature from 10 to 40 °C	VNIIM	BelGIM KazInMetr VNIIM
18	422/RU-a/08	Development of the COOMET recommendation "Calibration techniques. General requirements"	VNIIFTRI	VNIIFTRI VNIIM BelGIM NISM
19	420/RU-a/08	Development of the Recommendation for uncertainty evaluation in calibration	VNIIM	VNIIM VNIIFTRI BelGIM NISM
20	487/RU/10 COOMET.T-S1	Regional comparisons of thermocouples type S in the range from 300 °C to 1100 °C	VNIIM	KazInMetr NSC "Institute of Metrology" VNIIM
21	486/RU/10	Regional comparisons of copper cells for contact thermometry	VNIIM	KazInMetr NSC "Institute of Metrology" VNIIM
22	285/RU/03 COOMET.T-K3	Regional comparisons of national standards of the temperature unit in the temperature range from a triple point of mercury to the solidification temperature of zinc	VNIIM	BelGIM NSC "Institute of Metrology" SMU VNIIM
23	779/MD/19	Arranging and holding of the 16th COOMET Technical Committee	NIM	BelGIM PTB

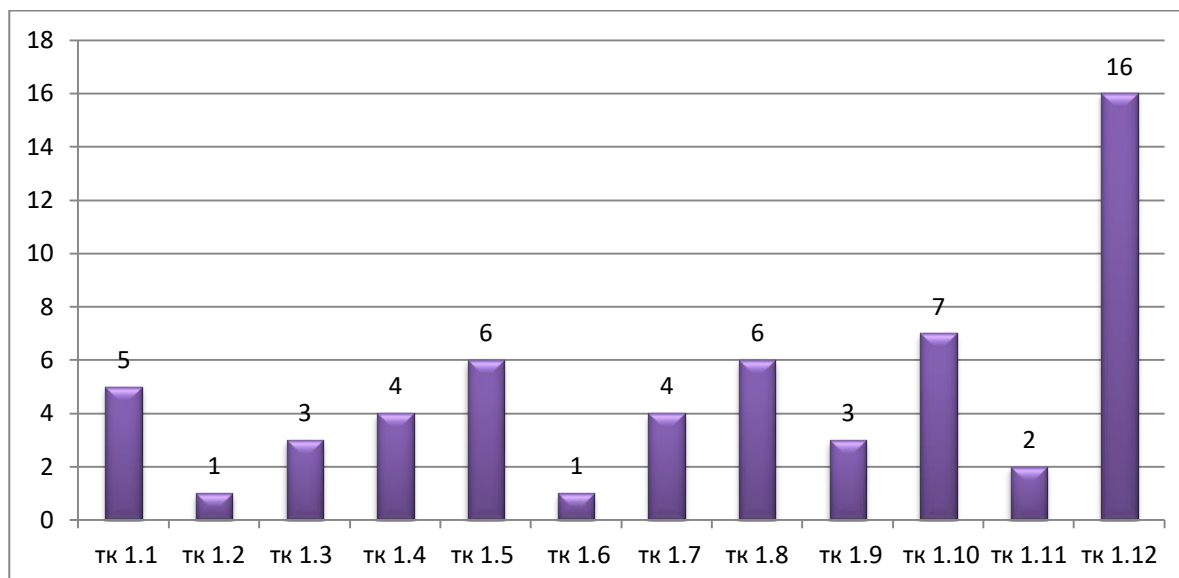
No	COOMET project KCDB ID	Name	Pilot	Participants
		TC 1.9 "Ionizing Radiation and Radioactivity"		GeoSTM NCEC CPHR INM-MD VNIIM VNIIFTRI SMU NSC IM
24	752/CU/18	Arranging and holding of the 16th COOMET Technical Committee TC 1.7 "Photometry and Radiometry" and training course with the subject "Redefinition of the SI units"	INIMET	AzSMS BelGIM IMBIH NIM INIMET GEOSTM PTB KazInMetr INM-MD VNIIOFI SMU NSC RUz NSC "IM" SE Ukrmetrteststandard
25	673/UA-a/15 COOMET.L-S18	Comparison of initial measuring instruments of the parameters of involute gears.	PTB	NSC "Institute of Metrology" VNIIMS
26	570/UA-a/12	Comparisons of standards of flatness	NSC "Institute of Metrology"	BelGIM NSC "Institute of Metrology" VNIIMS
27	569/UA-a/12	Comparison of length standards in the range of 0.001 to 1 mm	NSC "Institute of Metrology"	KazInMetr NSC "Institute of Metrology"
28	439/RU-a/08 COOMET.PR-S2	International comparisons of national measurement standards of the unit of an angle of rotation of a plane of polarization	VNIIOFI	GUM INMETRO PTB SE "Ukrmetrteststandard" VNIIOFI
29	438/RU-a/08 COOMET.PR-S3	International comparisons of national measurement standards of the unit of refractive index	VNIIOFI	INRIM KazInMetr NMIJ AIST PTB UkrCSM VNIIOFI
30	732/RU-a/17	Development of CRM for composition of refined gold	JSC "Krastsvetmet"	Kazakhstan, Russia, Switzerland
31	699/RU-a/16	Work on the recognition of CRM for composition of potassium bichromate of the 1st order, included in Appendix C CIPM MRA as COOMET CRM.	UNIIM	Belarus, Kazakhstan, Russia
32	698/RU-a/16	Work on the recognition of CRM for composition of potassium biphthalate of the 1st order, included in Appendix C CIPM	UNIIM	Belarus, Kazakhstan, Russia

No	COOMET project KCDB ID	Name	Pilot	Participants
		MRA as COOMET CRM.		
33	648/RU-a/14	Development of CRM of mass fraction of metals in slag of copper smelting production (SHM)	UNIIM	Belarus Bulgaria Kazakhstan Russia Turkey Ukraine
34	636/UA/14	Comparisons of luminous flux national standards	NSC "Institute of Metrology"	NSC "Institute of Metrology" VNIIOFI
35	572/UA/12	Development Certified Reference Material of confidor (imidacloprid)	NSC "Institute of Metrology"	Ukraine, Belarus, Russia, all COOMET member-countries
36	526/UA/11	Development Certified Reference Material of High Alloyed High Manganese Steel for Spectral Analysis	NSC "Institute of Metrology"	Ukraine, Belarus, Russia, all COOMET member-countries
37	525/UA/11	Development of Certified Reference Material Steel 09Г2С for chemical analysis and analyzers of burning	NSC "Institute of Metrology"	Ukraine, Kazakhstan, Russia, all COOMET member-countries
38	252/UA/02	Development of RMs of special carbon steels.	NSC "Institute of Metrology"	Ukraine, Russia, Republic of Belarus, Bulgaria, all COOMET participating countries
39	679/RU/16	Comparisons of national standards in the field of gas flow rate and volume, gas flow rates from 1 to 100 m3/h	VNIIR	VNIIR" National Institute of Metrology (NIM), China PTB
40	734/RU/17	Preparation for and holding the international seminar "Mathematics, statistics and computation to support measurement quality" May 28- June 1, 2018, St.Petersburg, Russia	VNIIM	VNIIM (Russia), COOMET (Interested members)
41	606/RU/13	Arranging and holding of the 8th COOMET Technical Committee TC 1.11 "Time and Frequency"	VNIIFTRI	All interested COOMET members
42	522/RU/11	Organization and conducting the 16th meeting of COOMET Technical Committee 1.12 "CERTIFIED REFERENCE MATERIALS" (TC 1.12 "CRMs"	UNIIM	Armenia Belarus Germany Kazakhstan Russia Ukraine
43	498/RU/10	Development of publication "COOMET Recommendation. The content and procedure of works on CRM comparisons within COOMET".	UNIIM	Armenia Belarus Bulgaria Germany Kazakhstan Russia Ukraine

No	COOMET project KCDB ID	Name	Pilot	Participants
44	<b>452/SK-a/09</b> <b>COOMET.M.FF-S4</b>	Comparison of cold water flow calibration laboratories in a range of flow rates (3 - 20) m <sup>3</sup> /h	SMU	CENAM INIMET SMU UkrCSM VMT/LEI
45	<b>412/UA/07</b> <b>COOMET.M.FF-S3</b>	Realization of reference gas flow meter's test rigs comparisons in flow range: (4-160) m <sup>3</sup> /h.	SE	SE SMU VMT/LEI VNIIR
46	<b>414/UA/08</b>	Revision of COOMET Document R/RM/5:2002 "COOMET Recommendation. Contents and rules for drawing up documentation on reference materials developed within COOMET"	NSC "Institute of Metrology"	Belarus, Germany, Kazakhstan, Moldova, Slovakia, Russia, Uzbekistan
47	<b>728/RU-a/17</b>	Organization and conducting the 22nd meeting of COOMET Technical Committee 1.12 "REFERENCE MATERIALS" (TC 1.12 "RMs")	UNIIM	Belarus Germany Kazakhstan Moldova Russia Slovakia Ukraine
48	<b>702/RU/16</b>	Organization and conducting the 21th meeting of COOMET Technical Committee 1.12 "REFERENCE MATERIALS" (TC 1.12 "RMs")	UNIIM	Belarus, Germany, Kazakhstan, Moldova, Russia, Ukraine, Uzbekistan.
49	<b>663/RU/15</b>	Organization and conducting the 20th meeting of COOMET Technical Committee 1.12 "REFERENCE MATERIALS" (TC 1.12 "RMs")	UNIIM	Belarus, Germany, Kazakhstan, Moldova, Russia, Uzbekistan.
50	<b>647/RU/14</b>	Организация и проведение 19-го заседания Технического Комитета 1.12 КООМЕТ "СТАНДАРТНЫЕ ОБРАЗЦЫ" (ТК 1.12 "СО")	UNIIM	Belarus, Germany, Kazakhstan, Russia.
51	<b>616/UA/13</b>	Arranging and holding of the COOMET Technical Committee TC 1.4 "Flow measurement" meeting	NSC IM	Armenia, Belarus, Germany, Kazakhstan, Lithuania, Moldova, Russia, Slovakia, Ukraine, as well Czech Republic
52	<b>304/UA/04</b>	Arranging and holding of IV International Scientific & Technical Conference "Metrology and Measurement technique" (Metrology-2004)	National Scientific Center "Institute of Metrology"	All the countries members of COOMET
53	<b>753/RU/18</b>	Arranging and holding of the 15th COOMET Technical Committee TC 1.9 "Ionizing Radiation and Radioactivity"	VNIIM	BelGIM PTB CENTIS, CPHR AF JSC "National expertise and

No	COOMET project KCDB ID	Name	Pilot	Participants
				certification center" INM VNIIM VNIIFTRI NIM
54	720/CU/17	Arranging and holding of the 14th COOMET Technical Committee TC 1.9 "Ionizing Radiation and Radioactivity"	CENTIS	BelGIM PTB CPHR CENTIS NISM NSC IM VNIIM VNIIFTRI
55	691/RU-a/16	Pilot comparison "Determination of polychlorinated dibenzo-p-dioxins and dibenzofurans in fatty matrixes (pork fat)"	VNIIM	VNIIM (Russia), Ukrmetrteststandart (Ukraine), UNIIM (Russia) other countries-members of COOMET
56	573/RU/12	Pilot comparisons in the field on measurement of number concentration of air ions The subject of research is number concentration of light air ions with positive and negative polarity in the range from 102 to 106 cm-3 (the normalized number concentration range of light air ions in working zone).	VNIIFTRI	VNIIFTRI VNIIM KazInMetr
57	695/UA-a/16 COOMET.EM-K5	Key comparison of power	SE "Ukrmetrteststandard"	BelGIM EMI GEOSTM KazInMetr MASM NIM NIS SASO-NMCC SE "Ukrmetrteststandard" SMU UME VNIIM
58	645/RU/14	Pilot comparisons in the field of measuring the mass fraction of copper and impurities in the oxygen-free copper wire rod KMB M001b brand for determination of copper purity	UNIIM	UNIIM VNIIOFI BelGIM Ukrmetrteststandard TÜBİTAK UME

The distribution of completed project by TCs is given on the graph. The results are given on the base of the information from coomet.org web-site database for the year 2019. The projects with presented final reports were taken into account.



### 3. Participation of the COOMET in the Interregional CMC review:

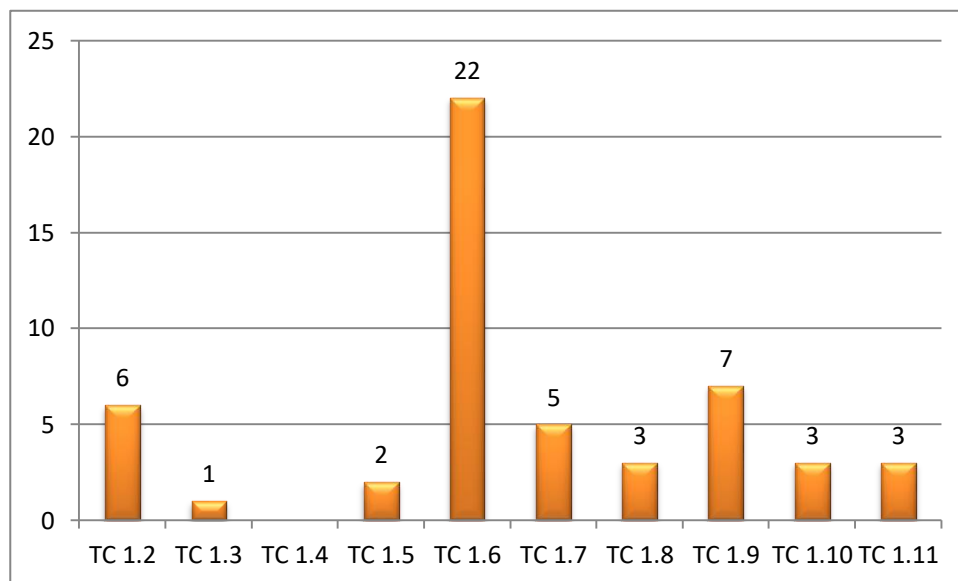
	CMC	Metrology area	RMO	Status	Last update
1	<a href="#">EURAMET.AUV.20.2019</a>	Acoustics, Ultrasound, Vibration	EURAMET	Approved by JCRB	2019-12-13
2	<a href="#">EURAMET.AUV.21.2019</a>	Acoustics, Ultrasound, Vibration	EURAMET	Approved by JCRB	2019-12-11
3	<a href="#">EURAMET.PR.18.2019</a>	Photometry and Radiometry	EURAMET	Review still in progress	2019-11-21
4	<a href="#">EURAMET.RI.31.2019</a>	Ionizing Radiation	EURAMET	Approved by JCRB	2019-11-20
5	<a href="#">EURAMET.RI.33.2019</a>	Ionizing Radiation	EURAMET	Approved by JCRB	2019-11-16
6	<a href="#">APMP.AUV.15.2019</a>	Acoustics, Ultrasound, Vibration	APMP	Review still in progress	2019-11-13
7	<a href="#">EURAMET.PR.17.2019</a>	Photometry and Radiometry	EURAMET	Review still in progress	2019-11-05
8	<a href="#">SIM.QM.25.2019</a>	Amount of Substance	SIM	Approved by JCRB	2019-10-23
9	<a href="#">APMP.QM.31.2019</a>	Amount of Substance	APMP	Approved by JCRB	2019-10-23
10	<a href="#">SIM.M.41.2019</a>	Mass and related quantities	SIM	Approved by JCRB	2019-10-18
11	<a href="#">SIM.AUV.4.2019</a>	Acoustics, Ultrasound, Vibration	SIM	Review still in progress	2019-10-16
12	<a href="#">EURAMET.QM.34.2019</a>	Amount of Substance	EURAMET	Approved by JCRB	2019-10-15
13	<a href="#">APMP.M.51.2019</a>	Mass and related quantities	APMP	Review still in progress	2019-10-09
14	<a href="#">SIM.M.44.2019</a>	Mass and related quantities	SIM	Approved by JCRB	2019-10-09
15	<a href="#">APMP.PR.10.2018</a>	Photometry and Radiometry	APMP	Approved by JCRB	2019-10-05
16	<a href="#">APMP.M.49.2019</a>	Mass and related	APMP	Review still in progress	2019-09-29



	CMC	Metrology area	RMO	Status	Last update
		quantities			
17	<a href="#">SIM.M.42.2019</a>	Mass and related quantities	SIM	Approved by JCRB	2019-09-29
18	<a href="#">SIM.RI.18.2019</a>	Ionizing Radiation	SIM	Not approved	2019-09-24
19	<a href="#">APMP.M.50.2019</a>	Mass and related quantities	APMP	Review still in progress	2019-09-18
20	<a href="#">APMP.L.29.2019</a>	Length	APMP	Approved by JCRB	2019-09-11
21	<a href="#">EURAMET.M.65.2019</a>	Mass and related quantities	EURAMET	Approved by JCRB	2019-09-11
22	<a href="#">EURAMET.RI.32.2019</a>	Ionizing Radiation	EURAMET	Review still in progress	2019-09-09
23	<a href="#">APMP.T.16.2019</a>	Thermometry	APMP	Approved by JCRB	2019-08-15
24	<a href="#">APMP.RI.11.2019</a>	Ionizing Radiation	APMP	Not approved	2019-08-12
25	<a href="#">APMP.M.46.2018</a>	Mass and related quantities	APMP	Approved by JCRB	2019-08-12
26	<a href="#">EURAMET.TF.11.2018</a>	Time and Frequency	EURAMET	Approved by JCRB	2019-07-26
27	<a href="#">SIM.M.39.2018</a>	Mass and related quantities	SIM	Approved by JCRB	2019-07-25
28	<a href="#">EURAMET.TF.12.2018</a>	Time and Frequency	EURAMET	Published in BIPM KCDB	2019-07-03
29	<a href="#">APMP.M.48.2019</a>	Mass and related quantities	APMP	Published in BIPM KCDB	2019-06-25
30	<a href="#">SIM.M.40.2019</a>	Mass and related quantities	SIM	Published in BIPM KCDB	2019-06-18
31	<a href="#">EURAMET.TF.13.2018</a>	Time and Frequency	EURAMET	Published in BIPM KCDB	2019-06-10
32	<a href="#">EURAMET.M.63.2019</a>	Mass and related quantities	EURAMET	Review still in progress	2019-06-02
33	<a href="#">AFRIMETS.M.7.2019</a>	Mass and related quantities	AFRIMETS	Published in BIPM KCDB	2019-05-29
34	<a href="#">SIM.PR.11.2019</a>	Photometry and Radiometry	SIM	Review still in progress	2019-05-27
35	<a href="#">EURAMET.PR.16.2019</a>	Photometry and Radiometry	EURAMET	Published in BIPM KCDB	2019-05-03
36	<a href="#">SIM.M.43.2019</a>	Mass and related quantities	SIM	Review still in progress	2019-05-02
37	<a href="#">EURAMET.M.66.2019</a>	Mass and related quantities	EURAMET	Review still in progress	2019-05-01
38	<a href="#">APMP.AUV.14.2018</a>	Acoustics, Ultrasound, Vibration	APMP	Published in BIPM KCDB	2019-04-24
39	<a href="#">AFRIMETS.T.7.2019</a>	Thermometry	AFRIMETS	Published in BIPM KCDB	2019-04-12
40	<a href="#">APMP.M.45.2018</a>	Mass and related quantities	APMP	Published in BIPM KCDB	2019-04-11
41	<a href="#">EURAMET.M.64.2019</a>	Mass and related quantities	EURAMET	Review still in progress	2019-04-02
42	<a href="#">EURAMET.AUV.18.2018</a>	Acoustics, Ultrasound, Vibration	EURAMET	Published in BIPM KCDB	2019-03-25

	CMC	Metrology area	RMO	Status	Last update
43	<a href="#">SIM.L.17.2018</a>	Length	SIM	Published in BIPM KCDB	2019-03-20
44	<a href="#">SIM.RI.15.2018</a>	Ionizing Radiation	SIM	Published in BIPM KCDB	2019-03-06
45	<a href="#">APMP.M.47.2018</a>	Mass and related quantities	APMP	Published in BIPM KCDB	2019-02-27
46	<a href="#">SIM.RI.16.2018</a>	Ionizing Radiation	SIM	Published in BIPM KCDB	2019-02-27
47	<a href="#">EURAMET.M.61.2018</a>	Mass and related quantities	EURAMET	Published in BIPM KCDB	2019-02-22
48	<a href="#">EURAMET.T.24.2018</a>	Thermometry	EURAMET	Published in BIPM KCDB	2019-02-20
49	<a href="#">EURAMET.M.62.2018</a>	Mass and related quantities	EURAMET	Published in BIPM KCDB	2019-02-10
50	<a href="#">EURAMET.M.60.2018</a>	Mass and related quantities	EURAMET	Published in BIPM KCDB	2019-02-10
51	<a href="#">EURAMET.EM.15.2018</a>	Electricity and Magnetism	EURAMET	Published in BIPM KCDB	2019-02-08
52	<a href="#">EURAMET.M.58.2018</a>	Mass and related quantities	EURAMET	Published in BIPM KCDB	2019-02-04

The distribution of the number of reviews with COOMET participation by TC. The results are presented on the base of the information from the bipm.org website for the year 2019.



#### 4. Published CMC line

CMC	Metrology area	Country	NMI
<a href="#">COOMET.RI.12.2019</a>	RI	GE	GEOSTM
<a href="#">COOMET.PR.12.2018</a>	PR	RU	VNIIOFI

A. Chunovkina  
JCMS chair