



## ANNUAL REPORT of Joint Committee on Measurement Standards COOMET for 2020

In the first part of the report the summary on JCMS activity in 2020 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	October 05, 2020 video conference
TC 1.2	October 13, 2020 video conference
TC 1.3	October 20-21, 2020 video conference
TC 1.4	March 24, 2021 video conference
TC 1.5	October 27, 2020 video conference
TC 1.6	October 06, 2020 video conference
TC 1.7	September 16-17, 2020 video conference
TC 1.8	-
TC 1.9	November 30, 2020 video conference
TC 1.10	October 28, 2020 video conference
TC 1.11	November 27, 2020 video conference
TC 1.12	September 10, 2020 video conference

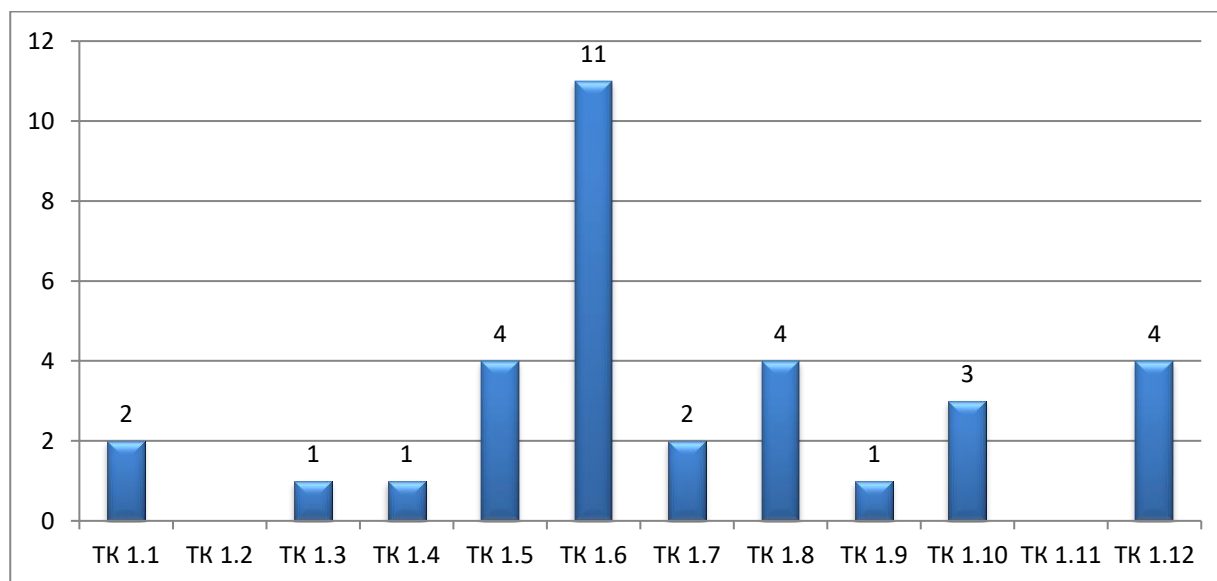
### 2. COOMET projects completed in 2020

No	COOMET project ID	Name	Pilot	Participants
1.	818/RU/20	Development of CRMs for composition of refined silver (set)	JSC "Kraatsvetmet"	Belarus, Germany, Russia, United Kingdom, India, Spain, USA, Switzerland
2.	814/RU/20	Organization and holding of the 25th session of COOMET Technical Committee 1.12 "REFERENCE MATERIALS" (TC 1.12 "RMs")	UNIIM	Azerbaijan, Belarus, Bulgaria, Kazakhstan, Kyrgyzstan, Russia, Slovakia, Turkey and Ukraine
3.	792/RU/19	Preparation for and holding of the seminar on the topic "Redefinition of the International System of Units (SI)" with the participation of COOMET TC Chairs and representatives of COOMET NMIs (3 October 2019, D.I. Mendeleyev Institute for Metrology VNIIM, St.Petersburg, Russia)	VNIIM	Countries-members of COOMET
4.	515/UA-a/11	Bilateral comparison of the force primary standards	PTB	PTB SE "Ukrmetteststandard"
5.	723/AZ/17	Bilateral supplementary comparison in the gauge pressure range from 0 MPa to 34 MPa	AzMI	AzMI CMI
6.	654/RU-a/14	Pilot comparison measurement in the field of human serum (category 10.1): Cholesterol in human serum	VNIIM	VNIIM CSM under ME of KR (Kyrgyz Republic);

No	COOMET project ID	Name	Pilot	Participants
				VNIIOFI
7.	649/RU/14	Pilot comparison "Study in the field of measuring of formed elements of blood: erythrocytes (RBC), leukocytes (WBC)"	VNIIM	VNIIM (Россия), CSM under ME Kyrgyz Republic and other countries-members of COOMET
8.	622/RU/13	Supplementary comparison "Measurement of (C <sub>2</sub> -C <sub>5</sub> ) components content in mixtures of liquefied hydrocarbons"	VNIIM	VNIIM BelGIM KazStandard SE "Ukrmetrteststandard"
9.	555/AZ-a/12	Supplementary comparisons of COOMET in the field of measurements of liquids density.	VNIIM	VNIIM AZSTAND KazStandard NMI (MD) SE "Ukrmetrteststandard"
10.	763/UA/18	Training in the field "The determination of density (volume) of solid body (weights)"	NSC "Institute of Metrology"	NSC "Institute of Metrology" VNIIM
11.	528/KZ/11	Pilot comparisons of submultiply and multiply units of kilogram	RGP "KazInMetr"	A RSE "KazInMetr", Kazakhstan National Center for Metrology under the Committee for Standards, Metrology and Patents, Azerbaijan (currently - Azerbaijan Institute of Metrology) National Metrology Institute, Armenia Standardization and Metrology Center, Kyrgyzstan Tajikstandard, Tajikistan State Institution "Center of National Measurement Standards", Uzbekistan (currently - Uzbek National Institute of Metrology) NSC "Institute of Metrology", Ukraine
12.	440/RU/08	International comparison of stabilized He-Ne/I <sub>2</sub> lasers at 633 nm	VNIIM	VNIIM BelGIM KazStandard NSC "Institute of Metrology"
13.	777/BY-a/19	Pilot comparisons of standards for relative humidity units	BelGIM	National Institute of Metrology (Republic of Moldova) East - Siberian branch of FSUE "VNIIFTRI" Belarusian State Institute of Metrology (BelGIM) (Republic of Belarus)
14.	782/RU/19	Pilot comparisons in the field of measuring of the mass fraction of moisture and protein in the grain	UNIIM	UNIIM (Russia), BelGIM (Belarus), Ukrmetrteststandart (Ukraine), Odessastandartmetrologiya (Ukraine), Grainproduct (Ukraine), KazInMetr (Kazakhstan) and other COOMET member - states
15.	803/UA/20	he organisation and holding the BIPM-COOMET Workshop on the KCDB 2.0 within the BIPM Capacity Building & Knowledge Transfer Programme (CB&KT)	NSC "Institute of Metrology"	Countries-members of COOMET
16.	563/RU/12	Supplementary comparison of the standards of the unit for roundness measurements	NSC "Institute of Metrology"	NSC "Institute of Metrology" BelGIM VNIIMS
17.	653/RU-a/14	Спектральная плотность энергетической освещенности (СПЭО) в диапазоне длин волн 200-350 нм.	VNIIOFI	VNIIOFI PTB
18.	765/UA-a/18	Spectral Irradiance, from 200 nm to 350 nm	NSC "Institute of Metrology"	NSC "Institute of Metrology" GEOSTM
19.	680/RU-a/16	Supplementary comparisons of national standards in the field of gas flow and volume, gas flow rates from 20 to 6500 m <sup>3</sup> /h	VNIIM	VNIIM BelGIM LABSAGAS LEI

No	COOMET project ID	Name	Pilot	Participants
				PTB SE "Ivano-Frankivskstandard metrologia" VNIIR
20.	779/MD/19	Arranging and holding of the 16th COOMET Technical Committee TC 1.9 "Ionizing Radiation and Radioactivity"	NIM	Countries-members of COOMET
21.	767/GE-a/18	Bilateral supplementary comparison in the small volumes	GEOSTM	GEOSTM IPQ
22.	761/RU-a/18	Pilot comparisons of reference systems for reproduction and measuring AC high voltage (above 1 kV) of power frequency (50 Hz) with extended frequency range from 15 Hz to 2.5 kHz and with composite harmonic signal from 0,3 to 50 order	VNIIMS	VNIIMS, Universita di Bologna - UNIBO, Italy (traceability to I.N.R.I.M. (Istituto Nazionale di Ricerca Metrologica) - The National Institute of Metrological Research), interested participants of cooperation
23.	768/GE/18	Comparison of the relative humidity measuring instruments in the range of relative humidity (30 ÷ 90) % at the temperature of 23 °C	NPL	NPL GEOSTM
24.	719/GE/17	Bilateral supplementary comparison in the Small Volumes range from 10µL to 100µL	GEOSTM	CMI (Czech Republic), GeoSTM(Georgia)
25.	718/GE/17	Bilateral supplementary comparison in the absolute pressure range from 0 MPa to 7 MPa and gauge pressure range from 0 MPa to 2 MPa	GEOSTM	GEOSTM CMI
26.	697/RU/16	Revision of COOMET Recommendation R/RM/22:2013 "Form and contents of COOMET certificate for reference materials for composition and properties of substances and materials"	UNIIM	Countries-members of COOMET
27.	676/MD/15	Calibration of gauge blocks by comparison	NMI (MD)	NMI (MD) INM PTB VMC
28.	671/GE/15	Calibration of mass standards (weights)	GEOSTM	GEOSTM (Georgia) NSC IM (Ukraine) INM (Moldova) CSM at ME Kr (Kyrgyzstan)
29.	670/GE/15	Comparison of mass standards with nominal values of 100 mg, 5 g, 50 g and 1 kg	GEOSTM	GEOSTM - Georgia, CSM at ME Kr - Kyrgyzstan, SA "Center of Metrological Services" Agency "Uzstandard" - Uzbekistan, Tajikstandard - Tajikistan
30.	617/RU-a/13	Development of CRM for composition of wolframite hubnerite concentrate (hard-alloy) type KVG(T)	Geochemistry Institute, Siberian Branch of RAS	Countries-members of COOMET
31.	642/MD/14	Comparisons for measurements in the calibration of industrial platinum resistance thermometers	NMI (MD)	NMI (MD) AZSTAND GEOSTM IMBIH KazSta
32.	368/BY-a/06	Comparisons of the units of luminous intensity	BelGIM	BelGIM KazStandard NSC "Institute of Metrology" SMU VNIIOFI
33.	341/RU/05	Key comparison of Brinell and Vickers hardness scales	VNIIFTRI	VNIIFTRI BelGIM KazStandard NSC "Institute of Metrology"

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 2020. The projects with presented final reports were taken into account



### 3. From 01/01/20 to 01/03/21 444 lines of CMC were published in the KCDB database

Field	Country	NMI	Amount of CMC
EM	BY	BelGIM	8
	GE	GEOSTM	3
	RU	VNIIFTRI	42
	RU	VNIIM	20
	UA	SE "Ukrmetrteststandard"	15
L	BY	BelGIM	10
	GE	GEOSTM	1
	KZ	KazStandard	1
	RU	VNIIM	3
	RU	VNIIMS	1
	UA	NSC "Institute of Metrology"	5
M	AZ	AzMI	6
	GE	GEOSTM	4
	RU	VNIIM	6
	RU	VNIIFTRI	1
PR	RU	VNIIOFI	42
	UA	SE "Ukrmetrteststandard"	4
T	AZ	AzMI	24
	BY	BelGIM	17

	GE	GEOSTM	31
	KZ	KazStandard	8
	RU	VNIIFTRI	3
	UA	NSC "Institute of Metrology"	10
QM	BY	BelGIM	17
	KZ	KazStandard	6
	RU	VNIIM	133
	RU	VNIIFTRI	4
	UA	SE "Ukrmetrteststandard"	19
		<b>Total</b>	<b>444</b>

#### 4. Projects related to the activities of the JCMS

**825/BY/21**

##### **Development of a COOMET concept for digitalization in metrology**

According to the item 97 (Ind-g.3.6) of the COOMET Programm of development 2020-2022 and actual trends of digital transformation it was suggested to develop a Concept of applying digital technologies in the metrology field in the framework of COOMET, that will cover following aspects:

- use of digital calibration certificates;
- use of FAIR data;
- use of digital technologies in COOMET activities;
- use of cloud technologies in the field of metrology in COOMET Member States;
- forming unified approaches to developing and maintaining national informational databases in the field of the ensuring the uniformity of measurements in COOMET Member States.

Other items could be included into the Concept based on discussions.

After forming the Working group it is suggested to hold an on-line meeting to discuss Plan and time schedule of further activities.

**794/RU/19**

##### **Translation and adaptation of a suite of new versions of CIPM MRA documents and also a CIPM document "Recommendations from the Working Group on the Implementation and Operation of the CIPM MRA"**

The translation of the JCRB documents is finished, the publication on coomet.net is in preparation.

Original documents: <https://www.bipm.org/en/cipm-mra/cipm-mra-documents/>

Ther recommendation translation:

[https://www.coomet.net/fileadmin/user\\_files/DOCUMENTS/ORGANIZATION\\_TC/JCMS/General\\_JCMS/Perevod\\_rekomendacija\\_RG\\_po\\_peresmotru\\_CIPM\\_MRA.pdf](https://www.coomet.net/fileadmin/user_files/DOCUMENTS/ORGANIZATION_TC/JCMS/General_JCMS/Perevod_rekomendacija_RG_po_peresmotru_CIPM_MRA.pdf)

**234/BY-a/01**

**Drawing up and update of the lists of COOMET technical experts on CMC review and COOMET technical experts on evaluation of quality management systems of COOMET NMIs/DIs**

The topic is constantly ongoing. The work is ongoing on forming and updating the lists of COOMET technical experts on CMC review and COOMET technical experts on quality management systems of COOMET DIs/NMIs assessment and also publication of materials on COOMET informational web resources, The information was presented on the 30-th COOMET Committee Meeting and later on the 26-th (November 2020) and 27-th (10-11 March 2021) Presidential Councils. The updated lists of COOMET technical experts on quality management systems of COOMET DIs/NMIs assessment are discussed on the TC 1.2-TC 1.12 Meetings and sent to the TC 3.1 "Technical Committee of the Quality Forum" and COOMET Secretariat for generalization, and are also posted on TC pages on COOMET web portal.

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