

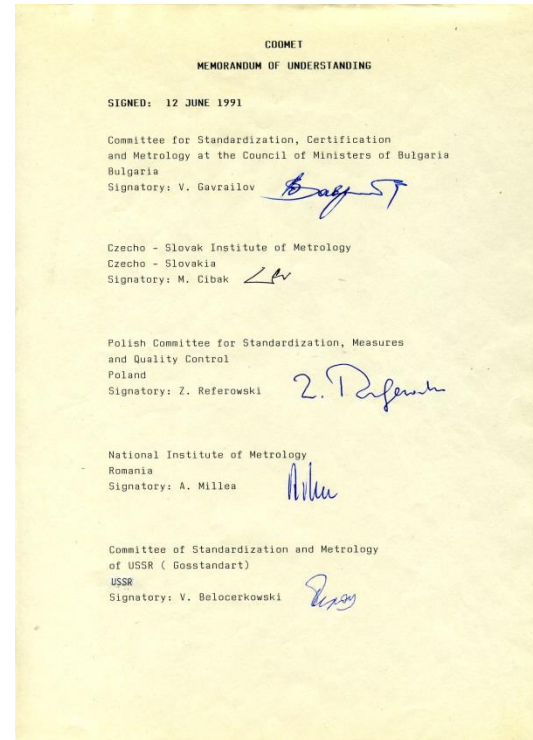
COOMET Report to the SIM General Assembly meeting

Dr. Valery HUREVICH,
COOMET President

12 November 2021, ONLINE

Date of COOMET's establishment:

On 12 June 1991 in Warsaw representatives of national metrology organizations of five countries: **Bulgaria, Poland, Romania, the USSR and Czechoslovakia** signed the COOMET Memorandum of Understanding.



Mission of COOMET

Raising the level of metrology development, support and expansion of an integrated measurement infrastructure for countries in the Euro-Asian region and other interested countries that makes it possible for every national metrological institute to promote innovation, competitiveness, trade, consumer safety, sustainability and ensuring international recognition.



Vision of COOMET

Efficient, representative, competent regional metrology organization, recognized by the international community.

Fundamental COOMET Documents:

COOMET D1 «Memorandum of Understanding»

COOMET D2 «Rules of Procedure»



STRATEGIC TASKS

- A.** Facilitation of international recognition of national measurement standards
- B.** Facilitation of recognition of QMS of NMI/DIs of COOMET member countries
- C.** Support of COOMET member countries in gaining the status of membership in the Metre Convention
- D.** Facilitation of international practice in legal metrology
- E.** Facilitation of advanced training and knowledge transfer in COOMET member countries
- F.** Organization of innovative scientific research in the field of metrology
- G.** COOMET internal development and external representation





COOMET President:

Dr. Valery HUREVICH

Director of Belarussian State Institute of Metrology (BelGIM)



Contacts:

E-mail: coomet@belgim.by, hurevich@belgim.by

COOMET President manages the general coordination of COOMET activity, as well as the coordination of cooperation between COOMET and international metrology organizations

JCRB Representative



COOMET Secretariat:

Belarussian State Institute of Metrology (BelGIM)

Address: 93, Starovilensky trakt, Minsk, 220053, Belarus

Head: Ms. Nadezhda LIAKHOVA

E-mail: coomet@belgim.by



Vice-President
Mr. Evgeny Lazarenko
(Rosstandart, Russia)

Cooperation in the field of measurement standards and joint scientific research



Vice-President
Dr. Frank LIENESCH
(PTB, Germany)

Cooperation in the field of legal metrology



Vice-President
Ms. Nino MIKANADZE
(GeoSTM, Georgia)

Cooperation in the field of development and peer review of Quality management systems



Vice-President
Prof. Pavel NEYEZHMAKOV
(NSC “IM”, Ukraine)

Cooperation with regional metrology organizations. Information and knowledge transfer



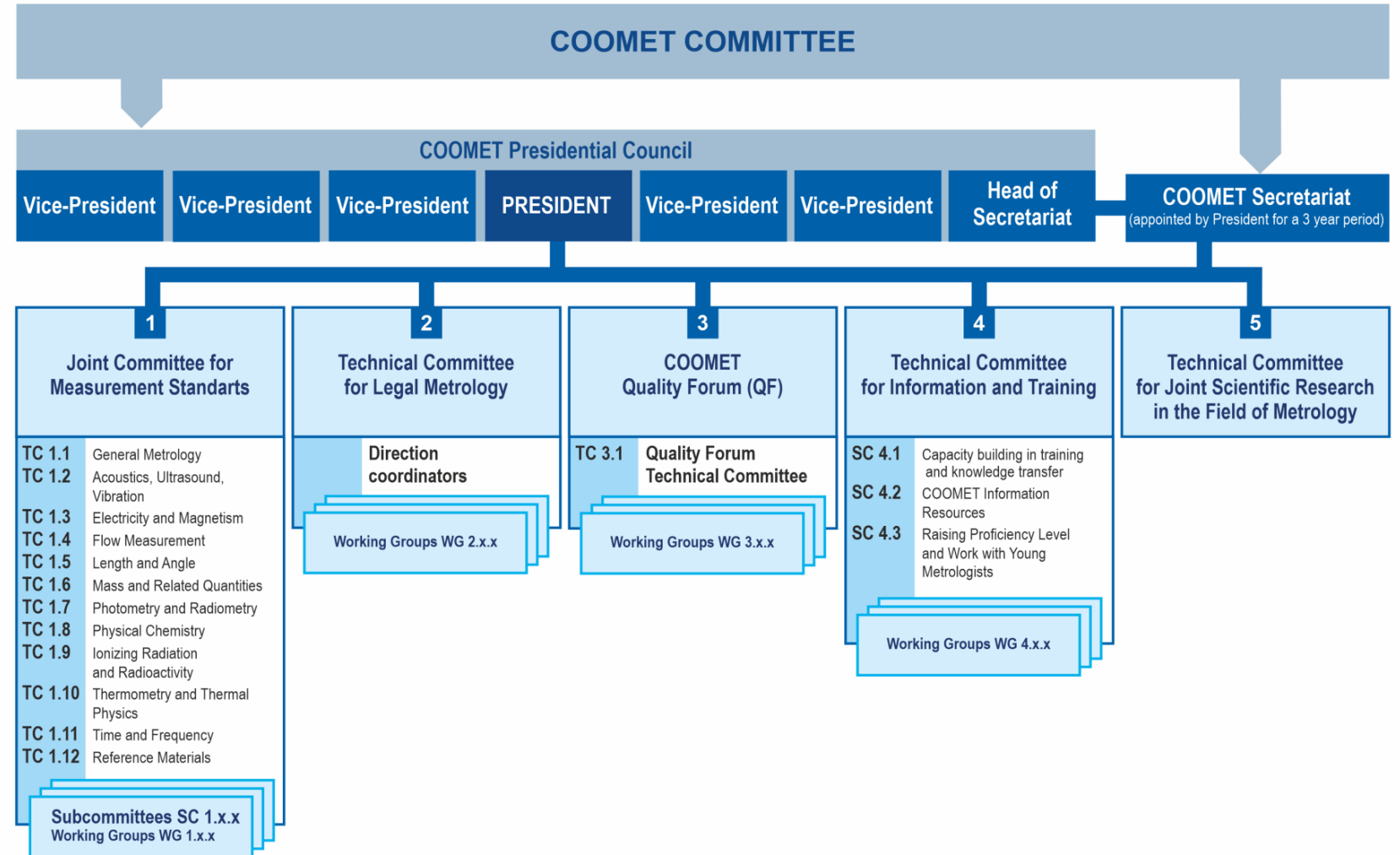
Vice-President
Mr. Zhanat BEGAIDAROV
(KazStandard, Kazakhstan)

Cooperation with countries with emerging metrology systems



COOMET member-countries cooperate in the following areas:

- ❖ MEASUREMENT STANDARDS OF PHYSICAL QUANTITIES
- ❖ LEGAL METROLOGY
- ❖ QUALITY MANAGEMENT SYSTEMS
- ❖ INFORMATION AND TRAINING
- ❖ JOINT RESEARCH IN METROLOGY

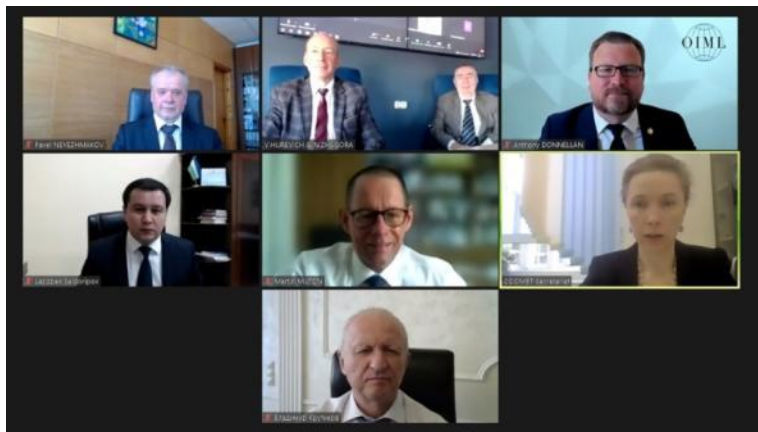




Seminar "30 years to COOMET" 15 June 2021, ONLINE

Date of COOMET's establishment:

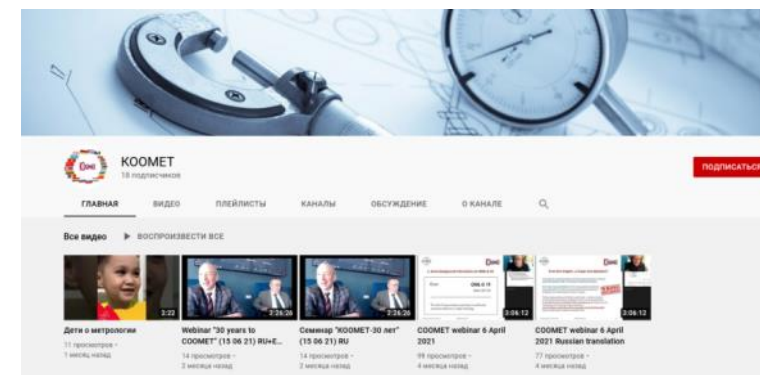
On **12 June 1991** in Warsaw representatives of national metrology organizations of five countries: **Bulgaria, Poland, Romania, the USSR and Czechoslovakia** signed the COOMET Memorandum of Understanding.



The recording of the webinar "30 years to COOMET" (15 June 2021) is available on the official **YouTube channel of COOMET**.

https://www.youtube.com/channel/UCyqRp_86A8lQZXMNond11g

80 specialists from 15 countries (Azerbaijan, Armenia, Belarus, Germany, Georgia, Kazakhstan, China, Kyrgyzstan, Lithuania, Moldova, Russia, Slovakia, Tajikistan, Uzbekistan, Ukraine) took part in the webinar, as well as representatives of the EURAMET and EASC



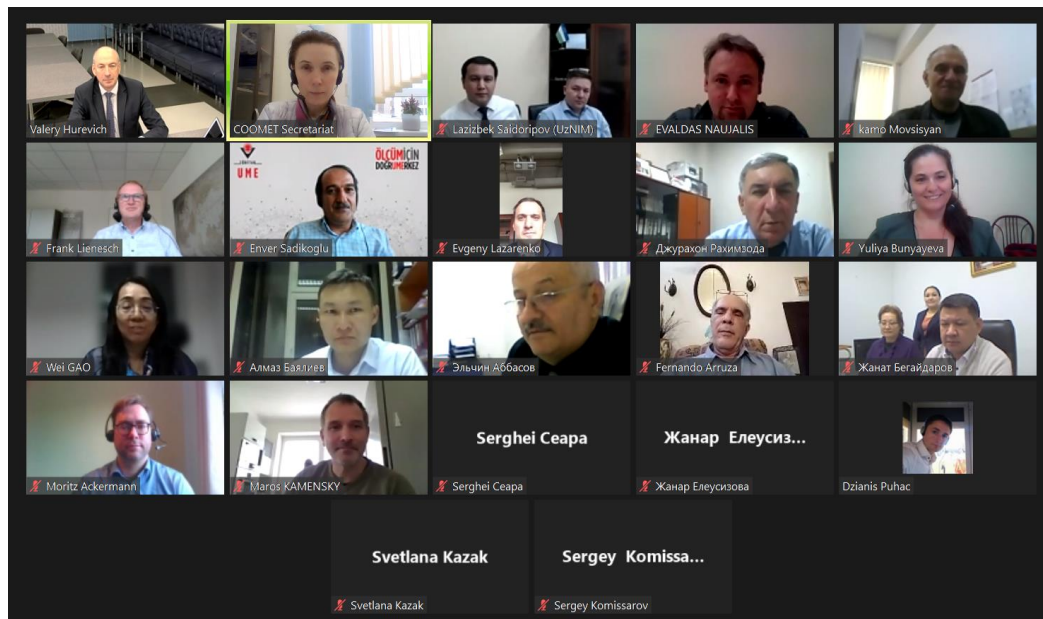
31st COOMET Committee meeting 15-17 June 2021, ONLINE



Main results:

- New members of the COOMET Presidential Council for 2021-2023 were approved.
- Online surveys to assess the effectiveness of work of CSBs among COOMET Committee members and CSB members have been organized (June - October 2021). *Processing of the results are currently in progress.*
- The COOMET criteria for member countries to be classified as CEEMS were adopted:
 - ❖ *lack of the status of the "Member of the Metre Convention" or "CGPM Associate" of the country;*
 - ❖ *lack of published CMC entries;*
 - ❖ *non-participation in key or supplementary comparisons, registered in the KCDB.*
- A survey was initiated among COOMET Committee members to define the positions of COOMET member countries on the issues concerning the possible change of the institutional status and criteria for membership in COOMET, issues of funding of COOMET activities. *Processing of the results are currently in progress.*

32nd extraordinary COOMET Committee meeting 26 October 2021, ONLINE



Discussion on all the issues will continue within the WG for COOMET Strategy.

Main results:

- Results of the Survey to define the positions of COOMET member countries on the issues of membership in COOMET, institutional status and funding of COOMET activities were discussed
- Discussion was held on the issues of:
 - possible changes in the format of membership in COOMET (possibility of concluding an intergovernmental agreement, transition to an association of national metrology institutions etc.);
 - possible further actions to change the institutional status of COOMET (possibility and appropriateness of registration of a legal entity for the needs of COOMET and for the operation of the permanent Secretariat);
 - possible further actions on funding of COOMET activities (including options for building a fee scale for the future COOMET budget and items of the expenditure side of the budget).
- *The fact of termination of the membership of Romania in COOMET was recorded (based on the notification received from the NMI of Romania)*
- *It was decided by a vote to exclude DPR of Korea from COOMET members (owing to absence of feedback during a long time period).*

Full members (14)

Country	Membership in COOMET
Armenia	Member, 2007
Azerbaijan	Member, 2007
Belarus	Member, 1992
Bulgaria	Member, 1991
Georgia	Member, 2006
Kazakhstan	Member, 1998
Kyrgyzstan	Member, 2000
Lithuania	Member, 1995
Moldova	Member, 1997
Russia	Member, 1991
Slovakia	Member, 1993
Tajikistan	Member, 2009
Ukraine	Member, 1992
Uzbekistan	Member, 2004

Associate members (5)

Country	Membership in COOMET
Bosnia and Herzegovina	Associate, 2013
China	Associate, 2016
Cuba	Associate, 1991
Germany	Associate, 1991
Turkey	Associate, 2014



Members of other RMOs (& participants of the CIPM MRA through other RMOs)

*In 2021 the following **changes** in the COOMET membership have taken place:*

26.10.2021 The COOMET Committee made the following decisions:

- ❖ The fact of termination of the membership of Romania in COOMET was recorded (based on the notification received from the NMI of Romania)
- ❖ It was decided by a vote to exclude DPR of Korea from COOMET members (owing to absence of feedback during a long time period).

➔ *Implementation of the Mutual Recognition Arrangement (CIPM MRA)* (as of 31.05.2021)



Currently in the KCDB there are

256

CIPM MRA participants

1103

key comparisons

26026

CMCs

646

supplementary comparisons

2711 – total number of CMCs from NMIs of the countries, which submit them through COOMET
(Azerbaijan, Belarus, Georgia, Kazakhstan, Cuba, Russia, Uzbekistan, Ukraine)

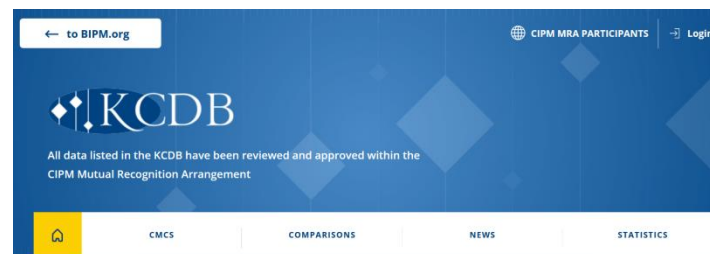
Number of CMCs:

Russia – 1829 (1st place in KCDB)

China – 1802 (2nd place in KCDB)

Germany – 1586 (3rd place in KCDB)

Total: 7513 CMC (for all COOMET member countries)



➡ Implementation of the CIPM MRA

All COOMET comparisons are listed in **COOMET P2/2021** "COOMET Program of comparisons" (approved as of 25.11.2020):

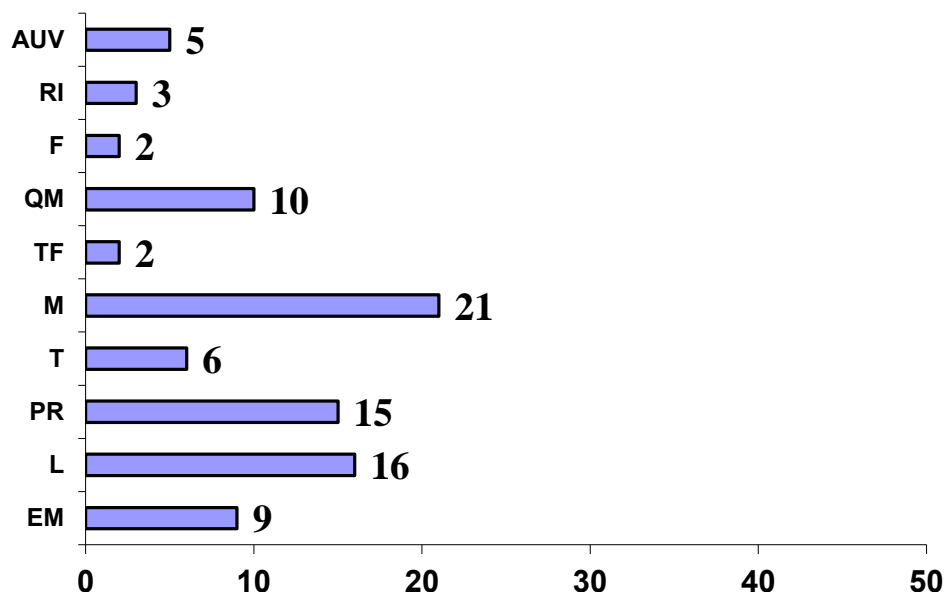
http://www.coomet.org/DB/isapi/cmt_docs/2020/12/SYBLL216.pdf


Besides, the interactive version of the Program is available at the following link

http://www.coomet.org/DB/com/index.htm?EN,PRJ_EN,EN/CMPR

http://www.coomet.org/tc_prj/2021/D9_EN.htm

There are currently **89 actual projects** on comparisons in the COOMET Program (as of 08.11.2021).



	COOMET Program	COOMET P2/2021 as of 08.11.2021
	COOMET PROGRAM OF COMPARISONS	
Approved at the 26th COOMET Presidential Council meeting (25 November 2020)		

Total

100 projects. from 25.11.2020: 5 - proposed; 14 - agreed; 8 - completed; 3 - excluded;

AUV - Acoustics, Ultrasound and Vibrations

5 projects. from 25.11.2020: 1 - proposed; 0 - agreed; 0 - completed; 0 - excluded;

EM - Electricity And Magnetism

11 projects. from 25.11.2020: 0 - proposed; 4 - agreed; 2 - completed; 0 - excluded;

L - Length

16 projects. from 25.11.2020: 0 - proposed; 1 - agreed; 0 - completed; 0 - excluded;

New COOMET comparisons (2020-2021)

824/RU/21	AQ	Pilot comparisons «Determination of sulfur in isooctane»
846/RU/21	AUV	Regional key comparisons in the field of ultrasound power measurement in water
813/RU/20	EM	Supplementary comparison of measuring current transformers (CTs)
821/RU/20	EM	Pilot comparisons of DC high voltage measuring reference instruments in the voltage range $\pm (1...100)$ kV
833/RU-a/21	IR	Supplementary comparisons of the national standards of radioactivity
810/RU-a/20	L	Supplementary comparisons of measurement standards of involute gears using a complex standard
822/GE/20	M	Pilot comparisons in the small volumes
826/MD/21	T	Supplementary comparisons of standards for the relative humidity unit
846/RU/21	AUV	Regional key comparisons in the field of ultrasound power measurement in water
849/RU/21	AQ	Content of metals in blood serum



Implementation of the CIPM MRA

Status of recognition of QMS of COOMET NMIs/DIs according to ISO/IEC 17025:2017

NMI/DI	Confirmation of recognition	Date of issue	Valid until	Metrological areas
VNIIM (Russia)	QSF-R79	04.03.2021	04.03.2026	AUV, EM, L, RI, T, M, QM
VNIOFI (Russia)	QSF-R76	04.03.2021	04.03.2026	PR, QM
VNIFTRI (Russia)	QSF-R78	04.03.2021	04.03.2026	AUV, EM, RI, T, M, QM, TF
VNIIMS (Russia)	QSF-R75	04.03.2021	04.03.2026	L, EM
BelGIM (Belarus)	QSF-R82	30.09.2021	30.09.2026	AUV, EM, RI, T, M, QM, TF, L, PR
NSC "Institute of Metrology" (Ukraine)	QSF-R86	30.09.2021	30.09.2026	EM, RI, T, M, TF, L, PR
SE "Ukrmetrteststandard" (Ukraine)	QSF-R84	30.09.2021	30.09.2026	AUV, EM, M, L, PR, QM
SE "NDI Systema" (Ukraine)	QSF-R72	20.11.2020	15.02.2022	AUV
INIMET (Cuba)	QSF-R67	20.11.2020	04.10.2023	M, L, QM, T, TF
CENTIS (Cuba)	QSF-R66	20.11.2020	04.10.2023	RI
CPHR (Cuba)	QSF-R65	20.11.2020	04.10.2023	RI
SE "Ivano-Frankivskstsndartmetrologia" (Ukraine)	QSF-R73	20.11.2020	04.10.2023	M
KazStandard (Kazakhstan)	QSF-R81	12.04.2021	12.04.2026 (subject to onsite peer review in 2022-2023)	M, L, QM, T
GEOSTM (Georgia)	QSF-R74	28.01.2021	04.10.2023	EM, M, T, RI, L
AzMI (Azerbaijan)	QSF-R71	20.11.2020	31.01.2023	T, RI, EM, M



Implementation of the CIPM MRA

Status of recognition of QMS of COOMET NMIs/DIs according to ISO 17034:2016

NMI/DI	Confirmation of recognition	Date of issue	Valid until	Metrological areas
VNIIM (Russia)	QSF-R80	04.03.2021	04.03.2026	Gases Organic solutions Inorganic solutions Electrolytic conductivity, High purity chemicals, advanced materials; food products; coatings, films, and nanomaterials.
VNIIOFI (Russia)	QSF-R77	04.03.2021	04.03.2026	Inorganic solutions Metal and metal alloys Biological fluids and materials
BelGIM (Belarus)	QSF-R83	30.09.2021	30.09.2026	Gases pH Electrolytic conductivity
Ukrmetrteststandart (Ukraine)	QSF-R85	30.09.2021	30.09.2026	Gases pH Electrolytic conductivity
KazStandard (Kazakhstan)	QSF-R60	02.10.2019	15.02.2022	Gases pH

COOMET Recommendation "Temporary rules and procedure for peer reviews of quality management systems of National metrology institutes/Designated institutes (QMS of NMIs/DIs) during the COVID-19 pandemic" was approved at the COOMET Committee meeting (on 15-17 June 2021) as [COOMET R/AQ/34:2021](#) .



Important projects of the Joint Committee for Measurement Standards

(along with coordination of activities of TCs by the types of measurements)



- ❖ realization of Program COOMET P6/2021 “Roadmap for the Implementation of Decisions Related to the Redefinition of the Basic Units of the International System of Units (SI) for 2020-2025” (in view of the resolutions adopted at the 26th meeting of the CGPM);
- ❖ drawing up and implementation of a Plan for preparation of COOMET Recommendations, containing requirements for calibration of various groups of measuring instruments;
- ❖ preparation of a COOMET Recommendation on providing the traceability of measurement results/measurement standards in COOMET (project 812/RU/20, coordinator – VNIIM, Russia) etc.

➡ Important project - Digitalization in metrology

An innovative project **825/BY/21 "Development of a COOMET concept for digitalization in metrology"** was launched. In the implementation of this project it is suggested that a **concept** should be developed **for application of digital technologies in metrology within COOMET**, which covers the following aspects:

- ❖ use of digital calibration certificates;
- ❖ use of FAIR data;
- ❖ application of digital technologies in COOMET activities;
- ❖ use of cloud technologies in metrology in COOMET member countries;
- ❖ development of common approaches to the creation and maintenance of national information funds in the field of ensuring the uniformity of measurements in COOMET member countries.

Digitalization in metrology



Chair of WG "Digitalization in metrology": Mr. Andrey Pankov
All-Russian Scientific Research Institute for Metrological Service (VNIIMS)
Address: 46 Ozernaya Str., 119361 Moscow, Russia
Phone: +7 495 781 24 50
Email: [apankov\(at\)vniims.ru](mailto:apankov@vniims.ru)

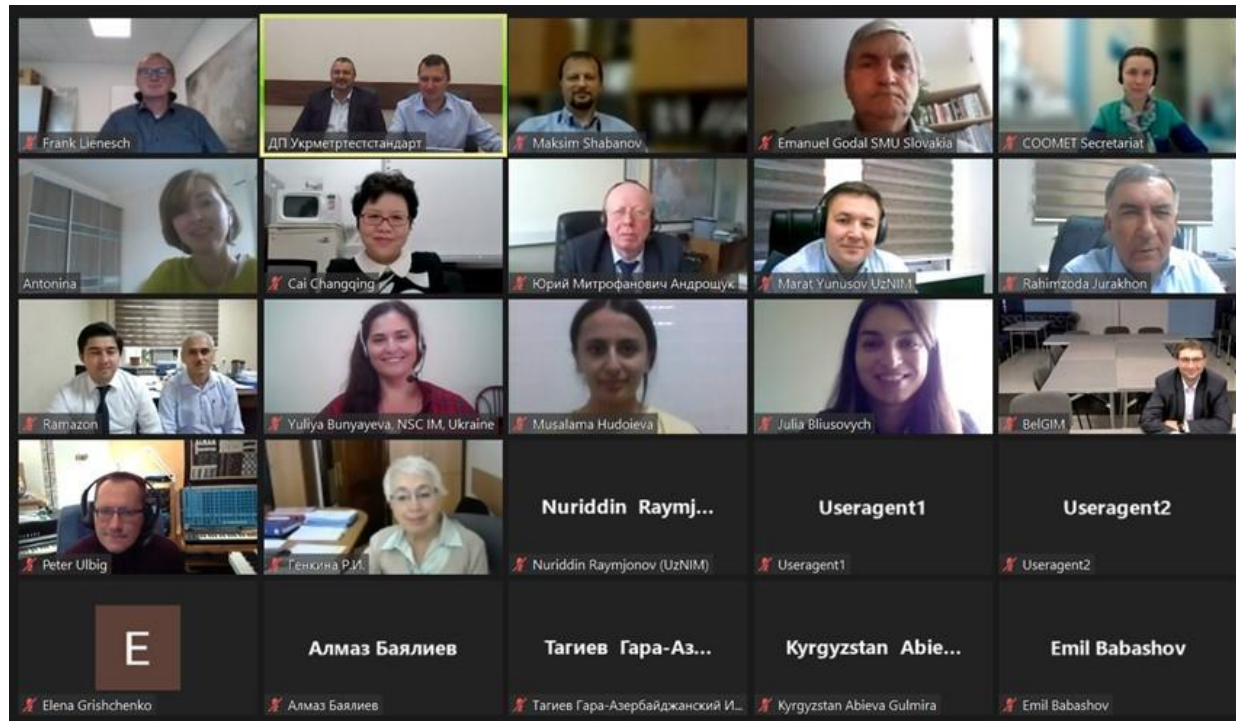
Deputy Chair of WG "Digitalization in metrology": Dr. Stanislav Zub

National Scientific Centre "Institute of Metrology" (NSC "IM")
Address: 42 Mironositskaya Str., Kharkiv-2, 61002, Ukraine
Telephone: +38 057 700-34-34
E-mail: [stanislav.zub\(at\)metrology.kharkov.ua](mailto:stanislav.zub@metrology.kharkov.ua)

During the reporting period **two online meetings of the WG** took place (in July and August 2021).

Next meeting - 12 November 2021

22nd COOMET TC 2 “Legal Metrology” (27-28 September 2021)



"Brainstorming" discussion on digitalization. Four main directions in the field of legal metrology were identified:

- Digital data exchange
- Repository of documents based on the results of metrological work (certificates, etc.)
- Methods for remote metrological work (verification, calibration, conformity assessment, etc.)
- Digital databanks, work with big data

Discussion of the format and topics of cooperation in the areas of activity within the framework of TC 2 was held:

- Measuring devices in Legal Metrology
- Measuring systems in legal metrology
- Medical equipment with measuring functions
- Conformity assessment of measuring instruments
- Digitalization in legal metrology

The appropriateness of preparation of COOMET

Recommendations on the application of a number of OIML publications (G19, D10, D23, D30) was discussed.

The importance of conducting online training courses in close cooperation with TC 4 was noted.

Tasks of COOMET TC 2 “Legal Metrology” for 2021-2022

TOP 12 for translation

- Translation of the Brochure UNIDO-OIML "Certification of measuring instruments"
- Translation of Document OIML D1:2020
- Translation of D10, D11, D30, D31, D32, D33, R75, R125, R137, G14

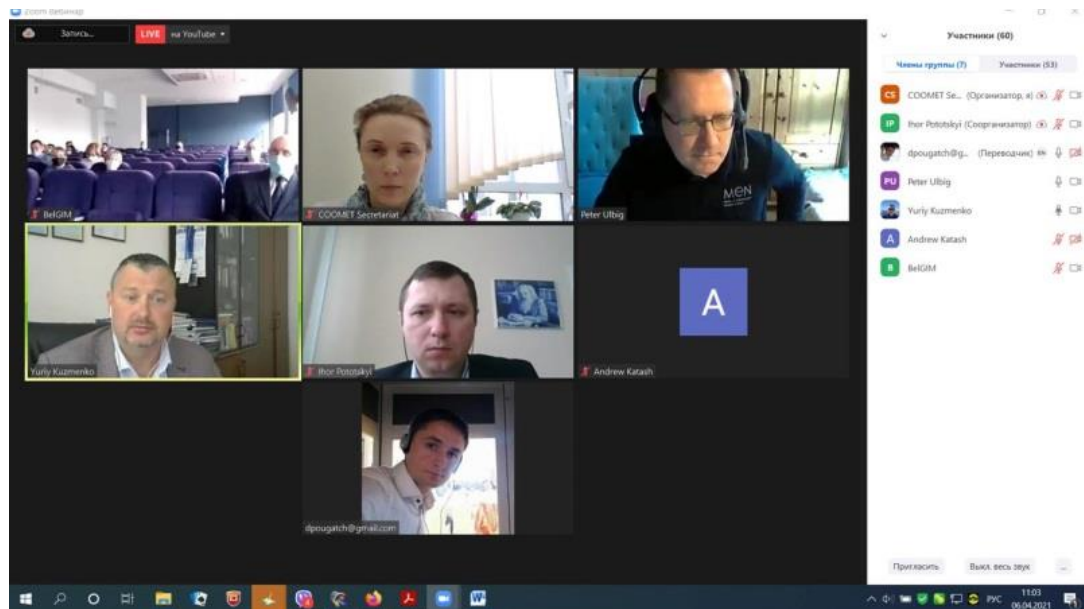
Updating COOMET Recommendations

- **R/LM/28:2016** "Typical test program for software of measuring instruments"
- **R/LM/8:2002** "Construction, presentation, design and content of the Type description of the of measuring instrument for the national register of measuring instruments"
- **R/LM/25:2015** "Procedure for recognizing technical devices as measuring instruments"
- **R/LM/26: 2015** "General requirements for the competence of verification laboratories"

Drafting of a list

of accepted rules, guidelines, recommendations in the field of legal metrology of other RLMOs of interest to COOMET countries, and agreement on the possibility of their application in COOMET member countries

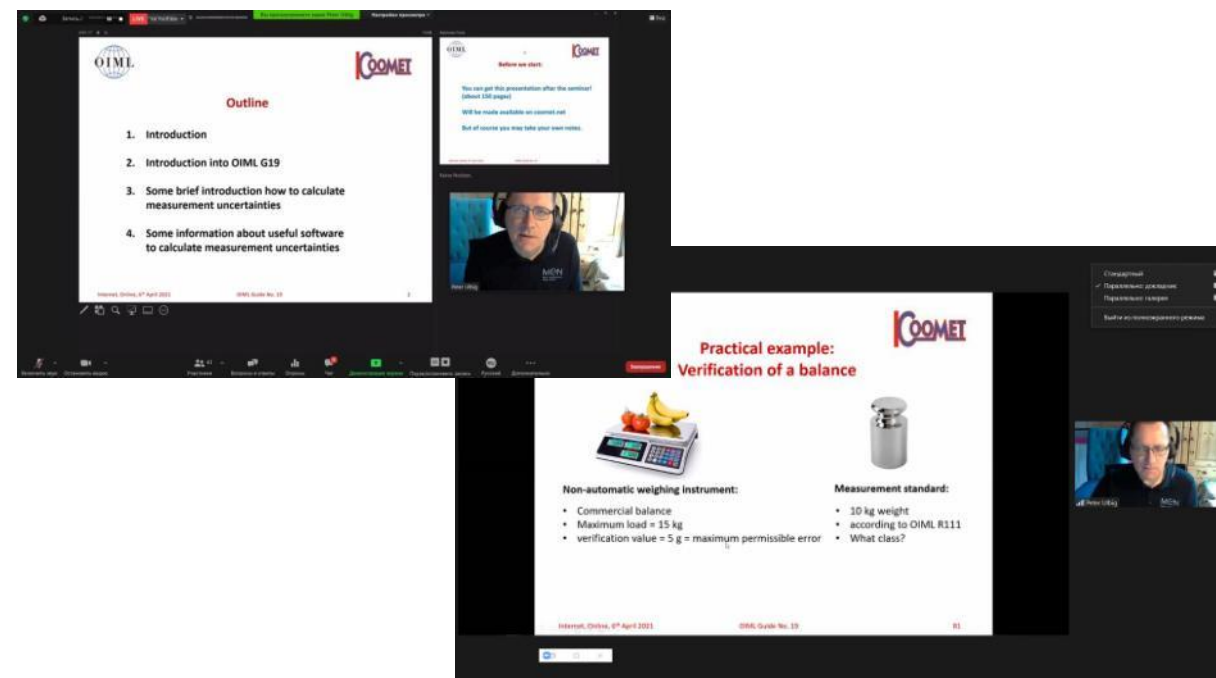
COOMET webinar "Role of measurement uncertainty in conformity assessment decisions in legal metrology" 6 April 2021



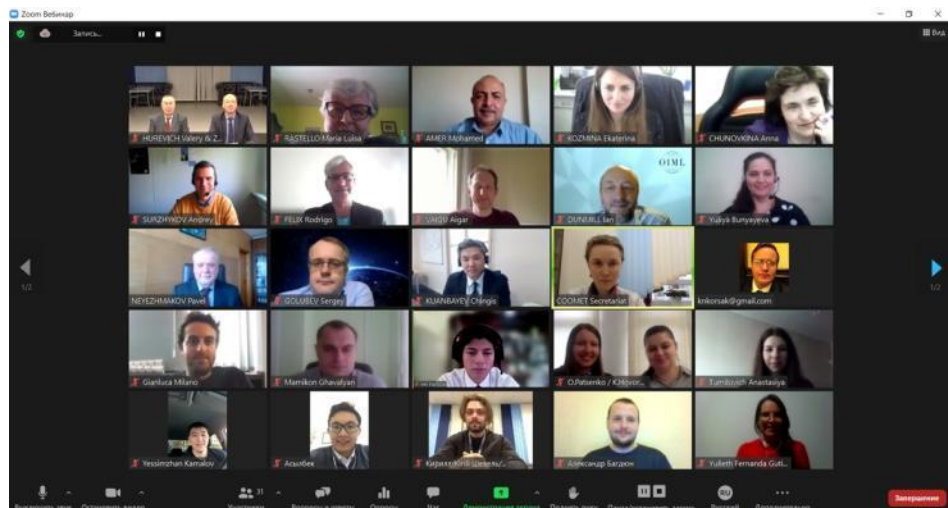
Under the webinar program the requirements of the OIML Guide G19:2017 "The role of measurement uncertainty in conformity assessment decisions in legal metrology" were reviewed in detail, and an overview of some fee-based and free software for calculating the uncertainty of measurements was provided. The topic of the webinar evoked a lively response among its participants, as confirmed by the questions asked and the feedback received.

More than **100 representatives of NMIs/DIs of COOMET** member countries (Azerbaijan, Armenia, Belarus, Bosnia and Herzegovina, Germany, Kazakhstan, Kyrgyzstan, Moldova, Russia, Slovakia, Tajikistan, Turkey, Ukraine, Uzbekistan) took part in the seminar.

Dr. Peter Ulbig, Head of the Verification Authority of Lower Saxony (MEN) (Germany), member of TC2 "Legal Metrology", performed as the speaker at the webinar, and Dr. Yuriy Kuzmenko, Deputy General Director of SE "Ukrmetrteststandard" (Ukraine), Chair of TC2, performed as the moderator.



IX International Competition "The Best Young Metrologist of COOMET-2021" 21-22 April 2021

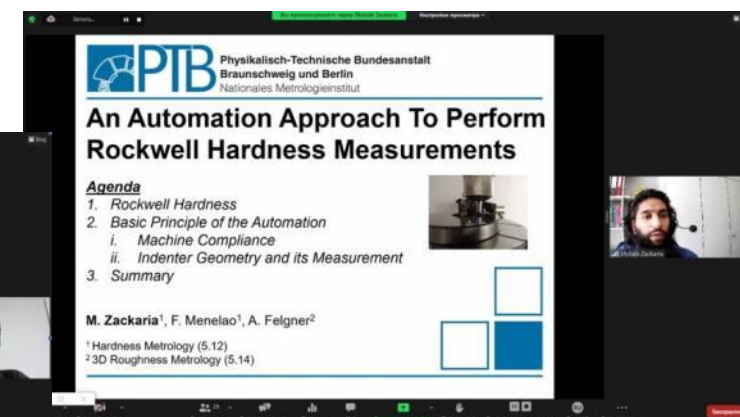
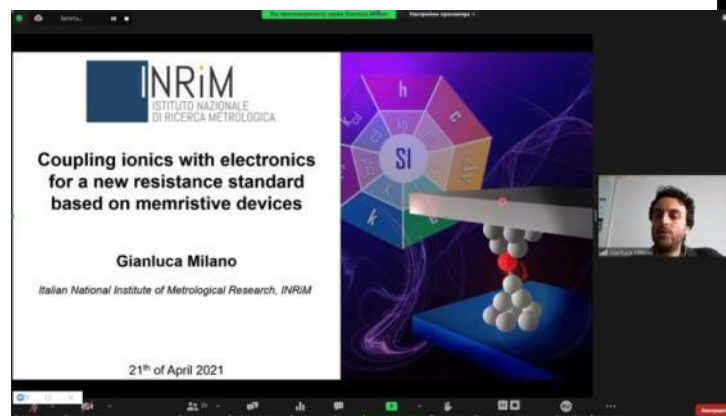


This year representatives of other regional metrology organizations joined the competition.

In total, there were **18 papers** submitted from: COOMET (Belarus, Kazakhstan, Germany, Russia, Ukraine), EURAMET (Italy) and SIM (Colombia, Mexico).

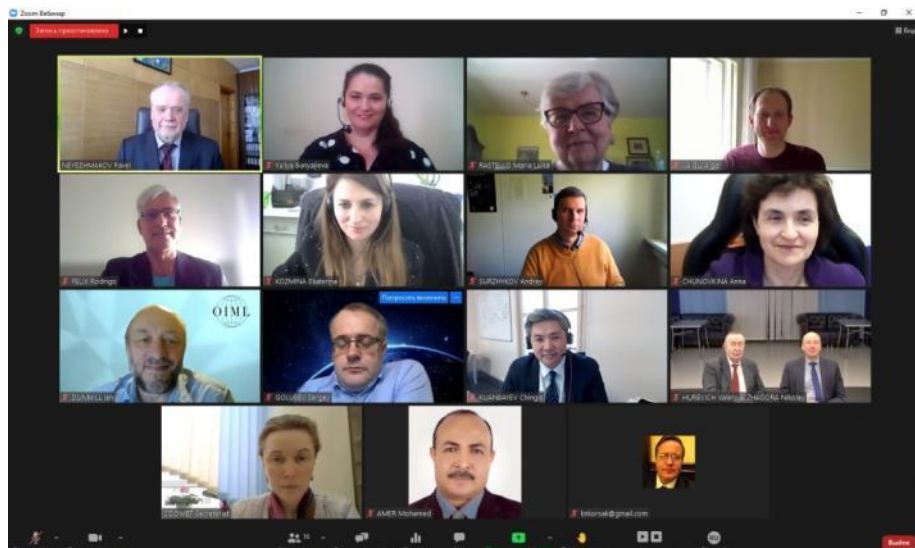
After careful and objective consideration the members of the Scientific Committee defined the winners of the competition:

- ❑ **Gianluca Milano (EURAMET, INRIM, Italy)** for the **best report in the field of scientific and fundamental metrological activity;**
- ❑ **Mutaib Zackaria (COOMET, PTB, Germany)** for the **best report in the field of applied metrological activity.**



Next Competition - 2023

IX International Competition "The Best Young Metrologist of COOMET-2021" 21-22 April 2021



Technical organizers – TC 4 “Information and Training”
and COOMET Secretariat.

The Competition was held on the Zoom platform
(with simultaneous interpretation).



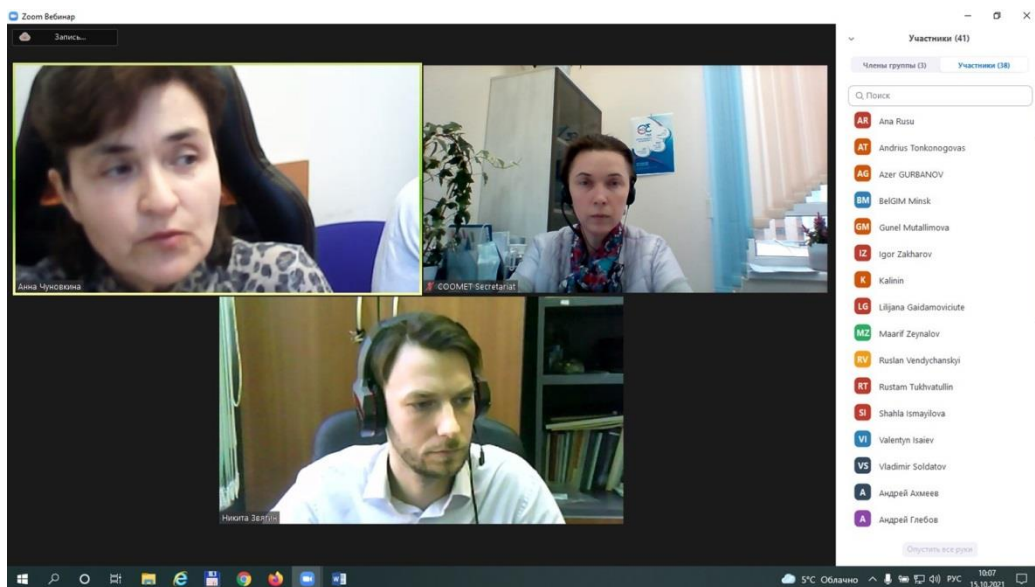
The Scientific Committee of the Competition included representatives of international (BIPM, BIML) and regional metrology (COOMET, AFRIMETS, EURAMET, SIM) organizations.

Chair of the Scientific Committee:
NEYEZHMAKOV Pavel, COOMET Vice-President, Ukraine

Members of the Scientific Committee:
HUREVICH Valery, COOMET President, Belarus
GOLUBEV Sergey, COOMET Vice-President, Russia
MIKANADZE Nino, COOMET Vice-President, Georgia
ZHAGORA Nikolay, COOMET, Belarus
CHUNOVKINA Anna, COOMET JCMS Chair, Russia
SURZHYKOV Andrey, COOMET, Germany
KUANBAYEV Chingis, **BIPM**, France
DUNMILL Ian, **BIML**, France
AMER Mohamed, **AFRIMETS**, Egypt
RASTELLO Maria Luisa, **EURAMET**, Italy
VAIGU Aigar, **EURAMET**, Estonia
FELIX Rodrigo, **SIM**, Brazil

Secretary of the Scientific Committee:
KOZMINA Ekaterina, Chair of SC 4.3, COOMET, Russia

COOMET webinar "The practice of implementation of the documents of the CIPM MRA and COOMET publication on carrying out and evaluation of results of calibration and comparison" 15 October 2021



Participants - specialists of NMIs of Azerbaijan, Belarus, Kazakhstan, Lithuania, Moldova, Russia, Uzbekistan and Ukraine.

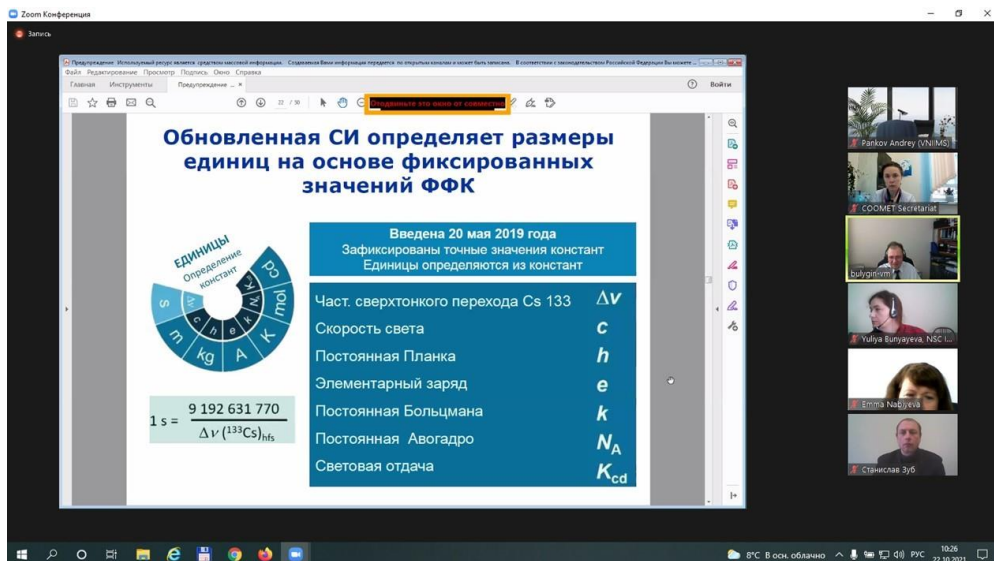
During the webinar the following reports were presented:

1. New versions of a suite of the CIPM MRA documents and their translation into Russian;
2. About COOMET recommendations on the assessment of the results of calibrations and comparisons;
3. Flow chart and analysis of algorithms for inconsistent data processing. Example.

The Chair of the Joint Committee for Measurement Standards (JCMS) and TC 1.1 "General Metrology", Anna Chunovkina, Deputy Chair of JCMS, Nikita Zviagin, and Deputy Chair of TC 1.1, Natalia Burmistrova (VNIIM, Russia) performed as speakers at the webinar.

COOMET webinar on digital transformation in metrology for young COOMET metrologists

22 October 2021

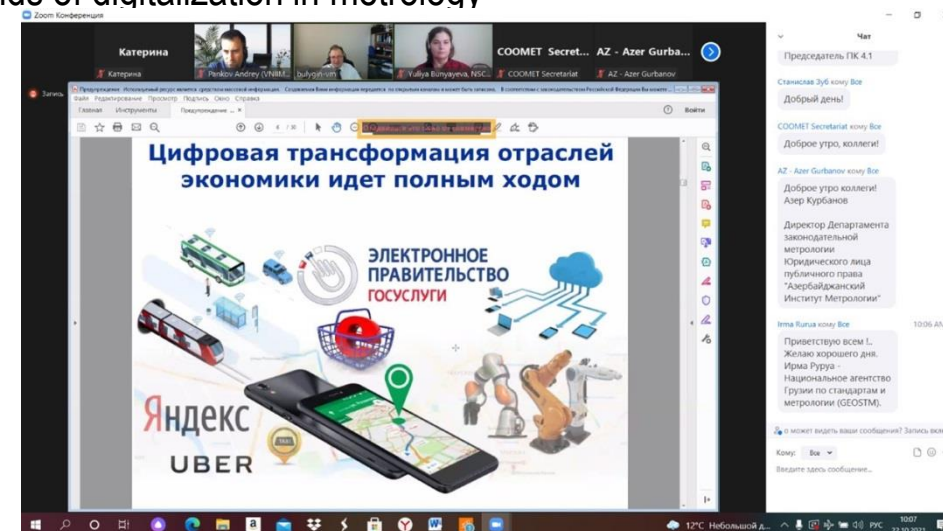


The webinar addressed the topics of using digital technologies in providing metrological services and ensuring the uniformity of measurements in COOMET member countries, as well as topics, which arouse great interest among the participants of the webinar:

- industrial technological modes and digitalization
- examples of digital transformation of various branches of economy
- pros and cons of digitalization
- examples of the application of digital technologies in metrology
- status of software in metrology
- digitalization in Russia using the example of FSIS ARSHIN
- global trends of digitalization in metrology

About **40 specialists** representing 9 organizations of COOMET member countries took part in the event.

Staff members of FSUE "VNIIMS" (Russia) – First Deputy Director for Science Fyodor Bulygin and Head of Software Testing Laboratory Andrey Pankov (Head of the WG for project 825/BY/21 on digitalization of metrological activities) performed as the organizers and main speakers at the webinar.

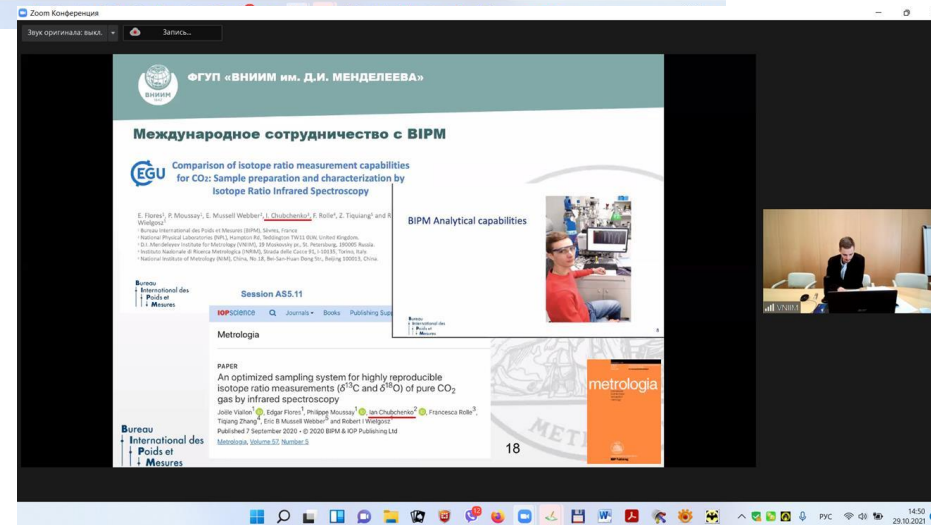
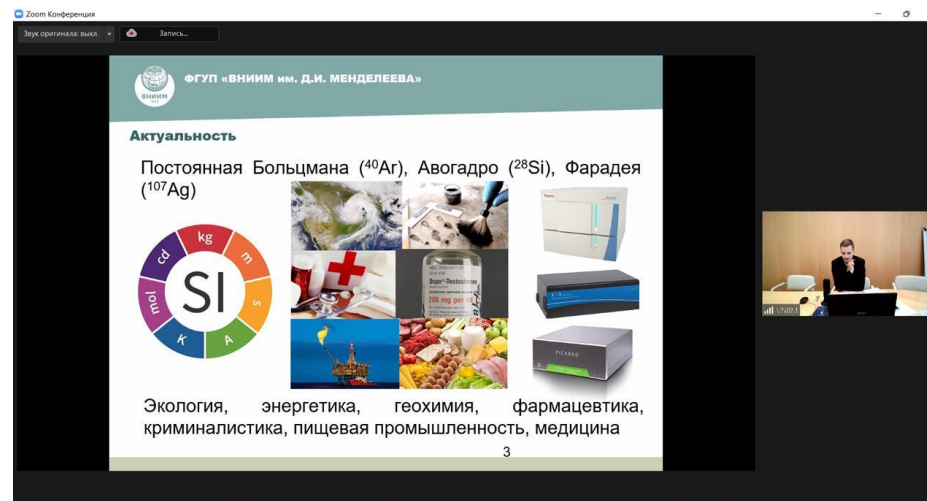


Training webinar "Metrology of stable isotopes" 29 October 2021



About **20 specialists** representing organizations of COOMET member countries (Belarus, Kazakhstan, Russia, Tajikistan, Uzbekistan, Ukraine) took part in the event.

Lector – Yan Chubchenko, VNIIM (Russia)



Proposals and prospects

In modern conditions close cooperation among regional organizations is increasingly valuable.

Undoubtedly, interaction on the JCRB platform for RMOs enables negotiation of positions of our organizations on key issues of the implementation of the CIPM MRA, which contributes to the recognition of the role of metrology in our regions. Meanwhile interaction on the platform of the Round Table of Regional Legal Metrology Organizations under the auspices of OIML facilitates exchange of experience and results of work in our regions in that area of activity.

Nevertheless, in my view there are prerequisites for enhancing our mutually beneficial cooperation (not limiting it only to exchange of information about activities of the organizations at annual meetings of the COOMET Committee and SIM General Assembly).

Regarding the activities in the field of measurement standards it would be appropriate to mutually involve NMIs of member countries in comparisons (particularly in the absence of partners in the region), ensure participation of the Chairs in each other's meetings of TCs by the types of measurements and quality, mutual participation in scientific projects etc.

It would also be highly beneficial to share the experience and discuss the issues of:

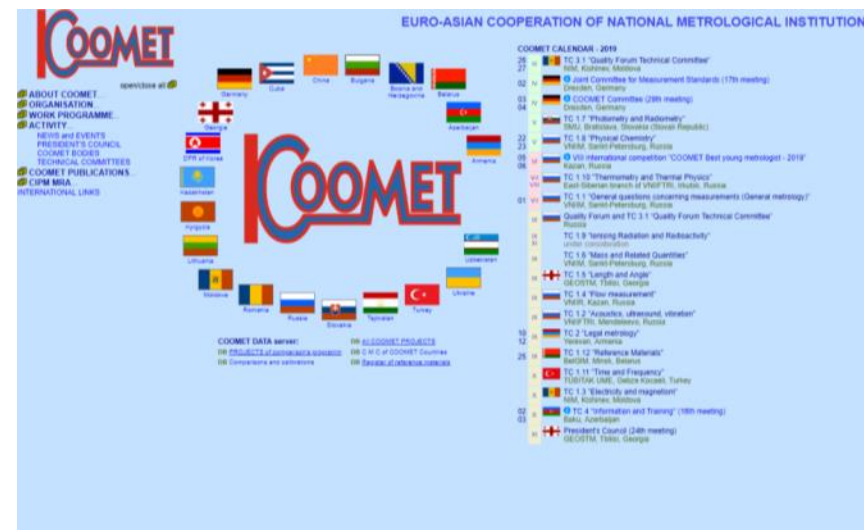
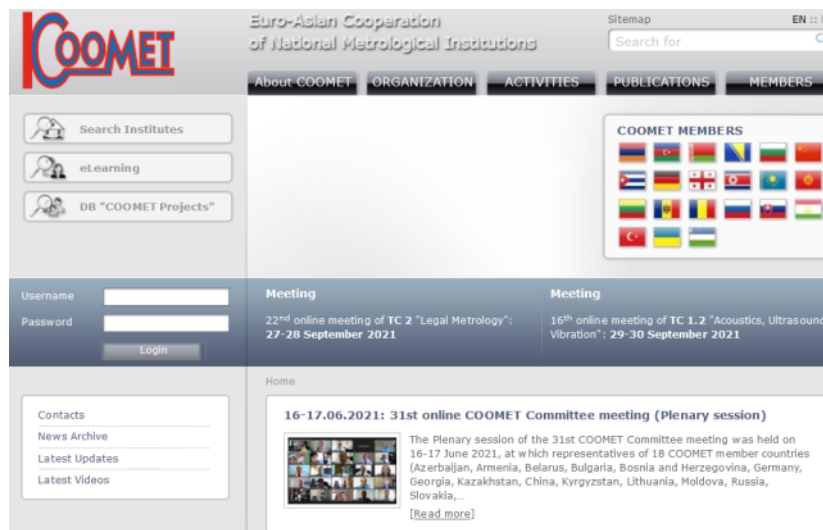
- supporting CEEMS,
- activities on capacity building and knowledge transfer (e.g. by organizing joint conferences or training events, inter alia, in the format of e-learning, preparation of joint publications etc.),
- possibility of translation of each other's publications, which are of interest to countries in the regions, as well as their publication on the web resources of COOMET and SIM respectively etc.

We would like to suggest considering the possibility of signing the Memorandum of Understanding between our organizations taking into account mutual benefits.

Thank you for your attention!

The COOMET web-portal (www.coomet.net) is maintained by the COOMET Secretariat and online editors of the pages of COOMET TCs.

The COOMET website (www.coomet.org) is maintained by the Administrator (A.Ivanov, VNIIFTRI, Russia).



COOMET Web-resources

COOMET YouTube channel:

https://www.youtube.com/channel/UCyqRp_86A8lQZXMNNonkd11g