

# COOMET REPORT to the 7<sup>th</sup> GA EURAMET

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National Scientific Centre “Institute of Metrology”,  
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**28-29 May 2013, Reykjavík, Iceland**



**The COOMET member-countries cooperate in the following areas:**

- **MEASUREMENT STANDARDS OF PHYSICAL UNITS**
- **LEGAL METROLOGY**
- **QUALITY MANAGEMENT SYSTEMS**
- **INFORMATION AND TRAINING**
- **JOINT RESEARCH in METROLOGY**

## The main tasks of COOMET are the following:

Provide assistance in the uniformity of measures, uniformity of measurements and the required accuracy of their results;

Provide assistance in promoting cooperation between national economies and eliminating technical barriers for international trade;

Harmonize activities of metrology services of the Euro-Asian countries with similar activities in other regions.





- Full Members – 15
- Associate Members – 3



ARMENIA  
AZERBAIJAN  
BELARUS  
BULGARIA  
CUBA  
GERMANY



GEORGIA  
KAZAKHSTAN  
DPR of KOREA  
KYRGYZSTAN  
LITHUANIA  
MOLDOVA



ROMANIA  
RUSSIA  
SLOVAKIA  
TAJIKISTAN  
UKRAINE  
UZBEKISTAN



## COOMET Committee

### COOMET President's Council

Vice-President

Vice-President

President

Vice-President

Vice-President

Head of  
Secretariat

### COOMET Secretariat

(appointed by President  
for a 3 year period)

#### 1 Joint Committee for Measurement Standards

(approved by the Committee)

TC 1.1 General Metrology  
TC 1.2 Acoustics, Ultrasound, Vibration  
TC 1.3 Electricity and Magnetism  
TC 1.4 Flow Measurement  
TC 1.5 Length and Angle  
TC 1.6 Mass and Related Quantities  
TC 1.7 Photometry and Radiometry  
TC 1.8 Physical Chemistry  
TC 1.9 Ionizing Radiation and Radioactivity  
TC 1.10 Thermometry and Thermal Physics  
TC 1.11 Time and Frequency  
TC 1.12 Reference Materials

Subcommittees SC 1.x.x  
Working Groups WG 1.x.x

#### 2 Legal Metrology Technical Committee

(approved by the Committee)

SC 2.1 Harmonization of Regulations  
and Norms  
SC 2.2 Technologies of Measuring  
Devices and Systems in Legal  
Metrology  
SC 2.3 Competence Assessment of  
Bodies in Legal Metrology  
SC 2.4 Legal Metrology Control

Working Groups WG 2.x.x

#### 3 COOMET Quality Forum (QF)

(membership is formed according  
to the proposal of COOMET  
Committee Members)

TC 3.1 Quality Forum  
Technical Committee  
SC 3.1 NMI Quality Management  
Systems

Working Groups WG  
3.x.x

#### 4 Technical Committee for Information and Training

(approved by the Committee)

SC 4.1 Support in Developing the  
Basic Metrological  
Infrastructure of COOMET  
Member Counties  
SC 4.2 COOMET Informational  
sources  
SC 4.3 Raising proficiency level and  
work with young metrologists

Working Groups WG 4.x.x

#### 5 Technical Committee for Joint Scientific Research in Field of the Metrology

(approved by the Committee)



Thereby for the purpose to solve common problems **COOMET** created effective mechanisms that reach the following **goals**:

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To achieve compatibility of national measurement standards

To recognize the national calibration certificates

↓

To evaluate the QMS in COOMET member-countries NMIs

↓

To harmonize legal metrology requirements

To exchange information on the current status of legal metrology development in member-countries

↓

To promote the exchange of metrology knowledge

To collaborate in developing metrology projects

↓

To realize joint research projects

The following meetings were held in 2012



22 meeting of **COOMET Committee** (18–19 April, Cholpon-Ata, Kyrgyzstan);  
10 meeting of the **Joint Committee for Measurement Standards** (17 April, Cholpon-Ata, Kyrgyzstan).



17 meeting of **COOMET President's Council** (14–15 November, Lvov, Ukraine)





COOMET President Prof. Vladimir Krutikov, Director VNIIOFI, Russia, was elected at the 22<sup>nd</sup> Meeting of COOMET Committee.

Four COOMET Vice-President were approved at the 22<sup>nd</sup> Meeting of COOMET Committee.

	Areas of responsibility
COOMET President Prof. Dr. <b>Vladimir Krutikov</b>	General coordination of COOMET activities, Cooperation with Metre Convention institutions and EASC
COOMET Vice-President Prof. Dr. <b>Nikolai Zhagora</b>	Legal metrology cooperation
COOMET Vice-President Dr. <b>Martin Halaj</b>	QMS cooperation
COOMET Vice-President Dr. <b>Pavel Neyezhmakov</b>	Metrological infrastructure and knowledge transfer, Cooperation with RMOs, COOMET official representative in JCRB
COOMET Vice-President Prof. Dr. <b>Klaus-Dieter Sommer</b>	Joint scientific research



JCMS	Dr. Anna <b>CHUNOVKINA</b> , VNIIM, RUSSIA
TC1.1 GM	Dr. Anna <b>CHUNOVKINA</b> , VNIIM, RUSSIA
TC1.2 AUV	Mrs. Valentina <b>POZDEEVA</b> , BelGIM, BELARUS
TC1.3 EM	Mrs. Tatyana <b>KOLOMIETS</b> , BelGIM, BELARUS
TC1.4 FF	Prof. Vladimir <b>BOLSHAKOV</b> , NSC "IM", UKRAINE
TC1.5 L	Dr. Vladimir <b>KUPKO</b> , NSC "IM", UKRAINE
TC1.6 M	Mrs. Iryna <b>KOLOZINSKAYA</b> , NSC "IM", Ukraine
TC1.7 PR	Mr Boris <b>KHLEVNOY</b> , VNIIOFI, RUSSIA
TC1.8 QM	Prof. Dr. Leonid <b>KONOPELKO</b> , VNIIM, RUSSIA
TC1.9 RI	Prof. Dr. Vladimir <b>YARINA</b> , VNIIFTRI, RUSSIA
TC1.10 T	Prof. Dr. Anatoly <b>POKHODUN</b> , VNIIM, RUSSIA
TC1.11 TF	Prof. Dr. Vitaliy <b>PALCHIKOV</b> , VNIIFTRI, RUSSIA
TC1.12 RM	Dr. Sergey <b>MEDVEDEVSKIKH</b> , VNIIM, RUSSIA
TC2 LM	Dr. Peter <b>Ulbig</b> , PTB, GERMANY
TC3 QF	Dr. Robert <b>SPURNY</b> , SMU, SLOVAKIA
TC4 ITTR	Dr. Pavel <b>NEYEZHMAKOV</b> , NSC "IM", UKRAINE

## **Meetings of the Technical Committees of COOMET in 2012 :**

**TC 1.1** “General Metrology” (9 November, Saint-Petersburg, Russia)

**TC 1.2** “Acoustics, Ultrasound, Vibration” (29 May – 1 June, Denmark)

**TC 1.3** “Electricity and Magnetism” (18–19 September, Astana, Kazakhstan)

**TC 1.4** “Flow Measurement” (22–26 October, Braunschweig, Germany)

**TC 1.6** “Mass and Related Quantities” (26–27 September, Baku, Azerbaijan)

**TC 1.7** “Photometry and Radiometry” (22 May, Kyiv, Ukraine)

**TC 1.8** “Physical Chemistry” (28–29 May, Saint-Petersburg, Russia)

**TC 1.9** “Ionizing Radiation and Radioactivity” (25–26 October, Moscow, Russia)

**TC 1.10** “Thermometry and Thermal Physics” (30–31 October, Astana, Kazakhstan)

**TC 1.11** “Time and Frequency” (31 May – 1 June, Astana, Kazakhstan)

**TC 1.12** “Reference Materials” (October, Braunschweig and Berlin, Germany)

**TC 2** “Legal Metrology” (18–20 September, Braunschweig, Germany)

**TC 4** “Information and training”  
(16 – 17 October 2012, Minsk, Belarus)





## **Meetings of the Technical Committees of COOMET in 2013 :**

**TC 1.5** “Length and Angle” (15–16 May, Braunschweig, Germany);

**TC 3.1** “Technical Committee of Quality Forum” (23–24 April, Braunschweig, Germany);

**TC 5** “Joint Scientific Research in the Field of Metrology” (23 April, Braunschweig, Germany).



The following items were discussed:

- Introduction & Motivation for a European-Asian Metrology Research Venture (EAMRV )
- General targets and frame of a EAMRV
- Reasonable capacity building in the NMIs of member-countries
- Drafting a pilot call

International Seminar Mathematics, statistics and computation to support measurement quality (05–07 June 2012, St.Petersburg, Russia);

Workshop on Prepackage (18 – 20 September 2012, Braunschweig, Germany);

VIII International Scientific & Technical Conference “Metrology and Measurement Techniques” (9–11 October 2012, Kharkiv, Ukraine);

Workshop for internal Auditors of COOMET NMI, according to ISO/IEC 17025 (7–8 November 2012, Chisinau, Moldova).



Workshop on control of packages was held on 17–20 September 2012, PTB, Braunschweig, Germany.

28 participants from 14 COOMET member-countries: Armenia, Azerbaijan, Belarus, Germany, Georgia, Kazakhstan, Kirgizstan, Lithuania, Moldova, Russia, Slovakia, Tajikistan, Uzbekistan, Ukraine took part in the Workshop.

## **The following items were overviewed:**

- overview on new requirements of OIML R79;
- implementation of the OIML agreement on mutual recognition of IQ marking system;
- requirements on prepackages specified in OIML R;
- news in the field of prepackages;
- WELMEC prepackage guide, etc.





The Workshop for COOMET member-countries NMIs' internal auditors according to ISO/IEC 17025 was held 7–8 of November 2012 in NISM (Chisinau, Moldova).



Participants went through theoretical part, next items were presented and discussed:

- *The basics of QMS in NMI;*
- *COOMET regulations and procedures on the assessment of QMS NMI;*
- *Requirements according to ISO/IEC 17025,*

and practical part

- *The “model” internal audit of NISM laboratories was carried out.*

After “model” internal audit the participants took an examination and received the Certificates.



There are **604 proposed projects** as of 30 April 2013.

The work on **83 agreed projects** was carried out as of 30 April 2013.

**111 proposed projects** are under agreement.

**43 new projects** were proposed by Russia, Ukraine, Georgia, Azerbaijan, Kazakhstan and Uzbekistan in 2012:

- 10 for “Mass and Related Quantities”,
- 7 for “Physical Chemistry”,
- 7 for “Length and Angle”,
- 6 for “Electricity and Magnetism”,
- 4 for “Reference Materials”,
- 2 for “Legal Metrology”,
- 1 for “Acoustics, Ultrasound, Vibration”,
- 1 for “Flow Measurement”,
- 1 for “Photometry and Radiometry”,
- 1 for “Ionizing Radiation and Radioactivity”,
- 1 for “Thermometry and Thermal Physics”,
- 1 for “Time and Frequency”,
- 1 for “Information and Training”.

**35 proposed projects** are related with regional comparisons.

The implementation of the **CIPM MRA** is directed at the fulfillment of the following tasks:


- Organization of regional comparison;
- Regional and interregional **CMC** reviews; and
- Evaluation of the **QMS** of NMIs through on-site peer review.



N	Country	Membership in COOMET		Relation to the Metre Convention		Participation in the CIPM MRA
1.	Armenia	Member	2007			
2.	Azerbaijan	Member	2007			
3.	Belarus	Member	1992	Associate	2003	2003
4.	Bulgaria	Member	1991	Member	1911	1999
5.	Cuba	Associate	1991	Associate	2000	2001
6.	DPR of Korea	Associate	2002			
7.	Germany	Associate	1991	Member	1875	1999
8.	Georgia	Member	2006	Associate	2008	2008
9.	Kazakhstan	Member	1998	Member	2008	2006
10.	Kyrgyzstan	Member	2000			
11.	Lithuania	Member	1995	Associate	2001	2001
12.	Moldova	Member	1997	Associate	2007	2007
13.	Russia	Member	1991	Member	1875	1999
14.	Romania	Member	1991	Member	1884	1999
15.	Slovakia	Member	1993	Member	1922	1999
16.	Tajikistan	Member	2009			
17.	Ukraine	Member	1992	Associate	2002	2003
18.	Uzbekistan	Member	2004			

Today, NMIs from 12 **COOMET** member-countries are participants in the **CIPM MRA**. 6 countries among them are members-states of **Metre Convention** and 6 are Associates of the **CGPM**.

With the aim of providing support for NMIs in **COOMET** for the **CIPM MRA** purpose, several Recommendations have been successfully developed and approved.

	<b>COOMET Recommendation</b>	<b>COOMET R/GM/14:2006</b>
	<b>Guidelines for data evaluation of COOMET key comparison</b>	

*Approved at the 4<sup>th</sup> meeting of J.  
Saint-Petersburg, Russia, 27 of  
Approved at the 16<sup>th</sup> COOMET*


## INTRODUCTION

The aim of the regional  
the measurement standards of  
[1].

The degree of equivalence  
of a Regional Metrology Org  
nical Supplement to the Mut  
CIPM KCRV, using the resul  
sens (linking NMIs).

The procedures used fo  
with low uncertainty and they

The Advisory Group w  
calculate a KCRV and degn


	<b>COOMET Recommendation</b>	<b>COOMET</b>
	<b>Guideline on COOMET supplemen comparison evaluation</b>	

*Approved at 18<sup>th</sup> meeting of COOMET Committee (Khar'kov, Ukra*

## 1. Introduction

The supplementary comparisons for national standards are c  
of confirming calibration and measurement capabilities (CMC) of  
metrology institutes (NMI).

During the evaluation of the supplementary comparison  
uncertainties claimed by the participants of comparisons are confir  
confirmation of corresponding measurement capabilities. Rather si  
procedures during the comparisons are the procedures of calibrati  
such a case, one might say about the confirmation of calibration ca  
also. If the calibration procedures differ from the measureme  
comparisons, then the comparisons confirm only the certain  
measurement uncertainty. In such a case the procedure of the  
capabilities requires additionally the analysis of the quality manage

	<b>COOMET Recommendation</b>	<b>COOMET R/GM/15:2007</b>
	<b>The rules of completion of the form of calibration certificates issued by National Metrology Institutes within the scope of the CIPM MRA</b>	

*Approved at the 17<sup>th</sup> COOMET Committee Meeting (Minsk, Belarus, April 24 – 25, 2007)*

## 1 FIELD OF APPLICATION

This recommendation lays down the form and rules for filling in calibration certificates issued by those National Metrology Institutes (in the following referred to as NMIs) which have signed the "Mutual Recognition Arrangement for National Measurement Standards and for Calibration and Measurement Certificates issued by National Metrology Institutes" (CIPM MRA). These rules must be observed when standards and measuring instruments (in the following referred to as "calibration items") of customers – also from other countries – are calibrated.

The form of the calibration certificate was drafted in agreement with the requirements of the International Standard ISO/IEC 17025.

The form of the calibration certificate regulated by this document may be used only by those NMIs

- whose calibration and measuring capabilities (CMC) have been included in Annex C of the CIPM MRA and which are contained in the KCDB BIPM database ([www.kcdb.bipm.org/](http://www.kcdb.bipm.org/));
- whose quality management systems (QMS) have been recognised by the quality forum of COOMET with respect to their agreement with the International Standard ISO/IEC 17025;
- which have been authorised to use the CIPM MRA logo ([www.bipm.org/en/cipm-mra/logo](http://www.bipm.org/en/cipm-mra/logo)).



Starting in 2002, the **COOMET TC QF** activity is directed the **CIPM MRA** realization. Currently 22 NMIs from 18 member-countries are cooperating within the TC QF.

The evaluation of the QMS in **COOMET** NMIs is carried out by results of peer reviews once every 5 years and is coordinated by the **COOMET TC QF**. The peer reviews are carried out in accordance with the RMO COOMET Recommendations **R/AQ/09:2010** , **R/AQ/13:2010**.

The **TC QF** monitoring QMS of member-countries NMIs using a cross analysis of annual reports.

The annual QMS report structure was update on 16th **TC QF** Meeting (April, 2013, Braunschweig, Germany) and will be approved on the 23rd COOMET Committee Meeting.

	<b>COOMET Recommendation</b> COOMET Quality Forum document	<b>COOMET</b> <b>R/AQ/9:2010</b>
	<b>Recommendation on the Evaluation of Quality Management System of National Metrology Institutes</b>	Pages: 4
	Code of the document: QSF-dos-003e	
Approved on the 11th COOMET Quality Forum Technical Committee Meeting (Chennai, 4.12.2008) Approved at the 29 <sup>th</sup> COOMET Committee Meeting (Astana, Kazakhstan, on April 21-22, 2010)		

## 1. SCOPE

This Recommendation specifies the requirements and procedure of evaluation of quality management system of National Metrology Institutes regarding results of their calibration and measurement performance, which are subject to recognition in accordance with the Agreement on mutual recognition of national standards and calibration and measurement certificates, issued by National Metrology Institutes (hereinafter referred to as Agreement).

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	<b>COOMET Recommendation</b> COOMET Quality Forum document	<b>COOMET</b> <b>R/AQ/13:2010</b>
	<b>The Rules and Procedure for the          Evaluation of Quality Management          Systems in National Metrology          Institutes</b>	Pages: 5
	Code of the document: QSF-dos-003e	
Approved on the 11th COOMET Quality Forum Technical Committee Meeting (Chennai, 4.12.2008) Approved at the 29 <sup>th</sup> COOMET Committee Meeting (Astana, Kazakhstan, on April 21-22, 2010)		

ries.

At 3<sup>rd</sup>

peer

The present Recommendation determines the procedure for the evaluation of quality management systems in National Metrology Institutes (NMI) of COOMET Member states for the purpose of realizing the Agreement of Mutual Recognition of National Measurement Standards and Certificates of Calibration and Measurement issued by National Metrology Institutes (CIPM MRA).

on in

The Quality Management System (QMS) evaluation is made by auditors and technical experts of the COOMET Quality Forum.

prov:

Before realization of quality management systems evaluation by auditors and technical experts the NMI represents written and oral presentations of QMS NMI to the Technical Committee of the COOMET Quality Forum which will be followed by the decision of the Technical Committee of COOMET QF regarding the readiness of the NMI to undergo the peer-evaluation.

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## Written and oral presentation

Written and oral presentations of the NMI QMS are carried out in accordance with the time schedule of the COOMET Quality Forum.

It is recommended to use a methodical material of COOMET

**NISM (Moldova)** successfully passed the peer review on 5–6 November 2012 for the first time.

Peer review of **SE “Ivano-Frankovskstandartmetrologia” (Ukraine)** was conducted on 6-7 December 2012.

Peer reviews of **INIMET, CENTIS-DMR, CPHR (Cuba)** was conducted in March 2013.

All these NMIs got a COOMET Certificate of Recognition.

Peer review of **GEOSTM (Georgia)** is planned for autumn 2013.



**1978** CMC lines declared by NMIs of COOMET member countries were published in the KCDB as of 30 April 2013.

Country	Total	AUV	L	TF	T	PR	M	EM	RI	QM
Belarus	<b>158</b>	8	13	31	27	3	2	12	51	11
Georgia	<b>0</b>									
Kazakhstan	<b>16</b>		6	4			6			
Cuba	<b>88</b>						12		76	
Moldova	<b>0</b>									
Russia	<b>1535</b>	72	20	36	137	87	59	325	329	470
Ukraine	<b>181</b>	23	25	30	24		4	53	1	21

The COOMET web-portal ([www.coomet.net](http://www.coomet.net)) is maintained by COOMET Secretariat and on-line editors of the pages of COOMET member-countries and TCs.

The COOMET website ([www.coomet.org](http://www.coomet.org)) is maintained by the experts of VNIIFTRI, Russia.

The screenshot displays the COOMET web-portal interface. At the top, the COOMET logo is prominently displayed on the left, and the text "Euro-Asian Cooperation of National Metrological Institutions" is centered. To the right of the logo, there is a search bar and a language selector (EN / RU). Below the header, a navigation bar contains tabs for "Metrology", "Organization", "Activities", "Documents", and "Members". The main content area is divided into several sections. On the left, there is a sidebar with links for "Search Institutes", "Search NMJ Services", "Search Projects", and "Search Databases". Below these links is a login form with fields for "User:" and "Password:", and a "Login" button. The central part of the page features a large image of several metal weights. To the right of the image, there is a section titled "COOMET MEMBERS" displaying a grid of flags representing member states. Below the flags, there are two "Meetings" sections. The first section, titled "Meetings", provides details about the 10th JCRB meeting held in PTB, Braunschweig, Germany, from 10 to 14 June 2013, and the 23rd COOMET Committee meeting. The second section, also titled "Meetings", provides details about the 30th JCRB meeting and workshop held in Nistruy, Hungary, from 04 to 08 June 2013. At the bottom of the page, there is a "Home" section with a link to the "30th JCRB meeting and workshop" and a small image of the meeting participants.



In accordance with the resolutions of the 22nd COOMET Committee meeting the following publications updated in 2012 were registered and updated:

**COOMET D1/2012** “Memorandum of Understanding”;

**COOMET D5.4/2012** “Regulation on COOMET Technical Committee “Length and angle”;

**COOMET D5.9/2012** “Regulation on COOMET Technical Committee “Mass and Related Quantities”;

**COOMET D5.12/2012** “Regulation on COOMET Technical Committee “Legal metrology”;

**COOMET D5.13/2012** “Regulation on COOMET Technical Committee “Information and Training”.

On 11–13 June 2013 at PTB, Braunschweig, Germany, will be held **International Competition “The Best Young Metrologist of COOMET”**.

V

23 papers of young scientists from 12 countries and 16 NMIs all over the world were send to organizing committee.

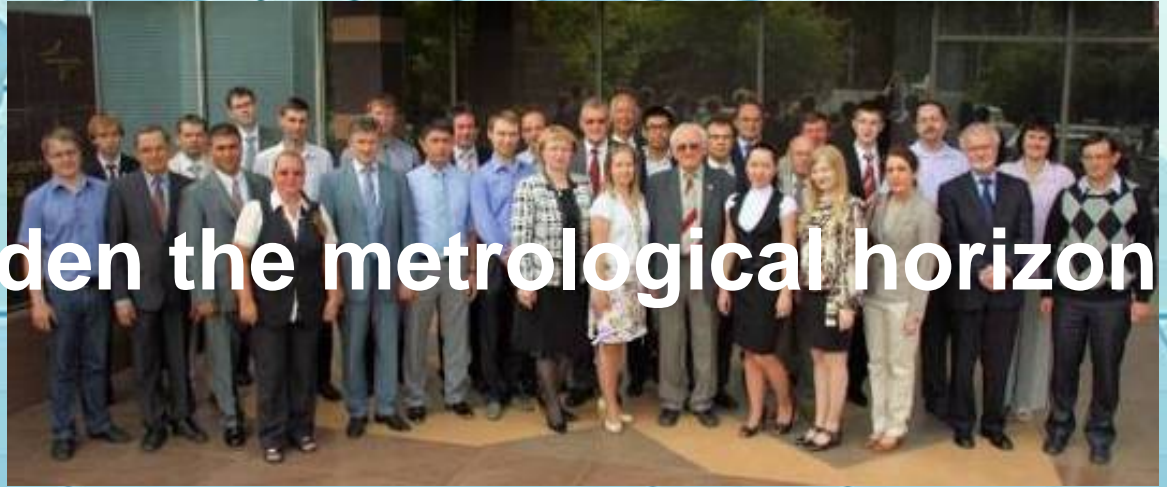
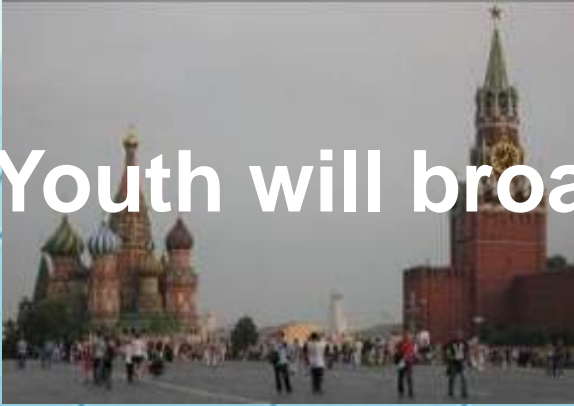
The initiative for this extraordinary competition was started nearly 10 years ago during an annual meeting of the COOMET TC4 “Information and Training”.

In 2005 the first COOMET competition was carried out at the NSC „Institute of Metrology“ in Kharkov, Ukraine. Another three competitions were carried out 2007, again in Ukraine, 2009 in Belarus, and 2011 in Russia.





## Youth will broaden the metrological horizon



This successful regional activity very clearly showed that a very high benefit consists not only in demonstrating one's own capabilities but also in building friendship as well as developing scientific and personal contacts between the young scientists of different member-countries NMIs.

In 2013, COOMET for the first time invited all other RMOs to participate in this competition. EURAMET, APMP, SIM and AFRIMET were requested to select from their NMIs participants for the competition and one official representative for the scientific jury.

This year in jury will participate not only COOMET representatives but Laurie Besley, Chairperson of APMP; Luc Erard, Representative of EURAMET; Jorge Torres, Representative of SIM.



The 23rd COOMET Committee meeting will take place on 5–6 June 2013 in Nizhny Novgorod, Russia.





**Thank you for your attention!**

[www.coomet.net](http://www.coomet.net)

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