



ANNUAL REPORT of the 1.2 "Acoustics, ultrasound, vibration" for 2020

1 GENERAL FEATURES OF COOPERATION IN THE SUBJECT FIELD

Currently NMIs of 14 countries are represented in TC 1.2 "Acoustics, Ultrasound, Vibration".

Information about the initiative of NMIs in organizing and piloting COOMET comparisons

NMI - initiators of comparisons	NMI – Pilot laboratory							
	BY	DE	DN	RU	UA	CN	PL	TR
BY	300/BY/04 337/BY/05 369/BY/06 434/BY/08 482/BY/09			626/BY/13				
DE		226/DE/01						
RU				308/RU/04 405/RU/07 448/RU/08 473/RU-a/09 531/RU/11 561/RU/12 706/RU-a/16 757/RU-a/18 786/RU-a/19		646/RU/14		
UA		316/UA/04	323/UA/04	609/UA/13	392/UA/07 431/UA/08 535/UA/11		666/UA/15	
TR								790/TR/19

2 TC MEETINGS

The scheduled 15th meeting of TC 1.2 was held online on 13 October 2020.

The main issues discussed:

- status of COOMET comparisons;
- proposals to the COOMET Program of comparisons;
- results of the 30th meeting of COOMET Committee and 18th and 19th meetings of JCMS as well as related topics - Plan for cooperation between COOMET and EURAMET and Roadmap for redefinition of SI;
- prospects for preparation of CMCs on the basis of the results of completed and published comparisons and organization of new comparisons;
- TC membership and personnel training;
- implementation of the resolutions of previous TC 1.2 meetings.

The participants of the meeting discussed new proposals to the COOMET Program of comparisons.

It was decided to organize three comparisons in the field of audiometry. The first one is the calibration of a tone audiometer; currently representatives of 5 countries (Belarus, Lithuania, Russia,

Turkey and Ukraine) expressed their wish to take part in the comparisons. The second one is the calibration of impedance audiometers; the project generated interest in the NMIs of Russia and China. The third one is the artificial ears calibration; Russia, China, Turkey and Ukraine are potential participants of the comparisons.

It was also decided to organize comparisons in the field of measuring the parameters of an ultrasonic field in water; Russia, China, Turkey and Ukraine are potential participants of the comparisons.

In addition, the possibility of organizing COOMET supplementary comparisons in the field of vibration based on the results of key comparisons CCAUV.V-K4 was considered. NMIs of Belarus, Ukraine, Turkey are interested in participation. The possibility of participation of the NMIs of Russia is being considered.

Planned COOMET comparisons are generally linked to the CCAUV development strategy for 2017-2027.

Based on the results of a short report on the 18th, 19th meetings of the JCMS and the 30th meeting of the COOMET Committee, it was noted that the COOMET Roadmap for the implementation of decisions related to redefinition of the SI base units does not require activities in the TC 1.2 thematic area; the TC Chair was instructed to conduct an opinion survey among the TC members on the development of COOMET recommendations on ensuring the traceability of measurement results / standards in COOMET. The TC Chair was instructed to conduct an opinion survey among the TC members on possible joint projects for the Plan for cooperation between COOMET and EURAMET for 2021.

Based on the results of discussion of the Plan of COOMET Training Seminars for 2020-21 the meeting participants approved the possibility of organizing training seminars online. The Head of the COOMET Secretariat, who took part in the meeting, promised assistance in their organization. In addition, the possibility of conducting internships on the basis of the NMI was discussed.

3 STATUS OF COOMET PROJECTS IN THE FIELD OF "AUV"

Comparisons in progress

Project №	Title of the project	Project code in KCDB	Project coordinator	Status
706/RU-a/16	Comparison of longitudinal ultrasonic wave propagation velocity in solid media	pilot	V.A. Lugovoi Far East branch of FGUP «VNIIFTRI»	Participants of the comparisons: BelGIM, Belarus FEB of VNIIFTRI, Russia Ukrmetteststandard, Dneprstandartmetrologiya, Ukraine NIM, China Draft B of the report is being agreed.
757/RU-f/18	Comparisons of national measurement standards for the unit of sound pressure in the air in the frequency range from 0,1 to 100 Hz	Supplementary COOMET. AUV.A-S3	A. Nikolaenko VNIIFTRI, Russia	Participants of the comparisons: BelGIM, Belarus VNIIFTRI, Russia DP NDI "Systema", Ukraine NIM, China TÜBITAK UME, Turkey At the measurement stage.

Planned comparisons

Project №	Title of the project	Project code in KCDB	Project coordinator	Status
786/RU-a/19	Comparisons of the results of amplitude-phase calibrations of hydrophones in the frequency range from 10 kHz to 500 kHz	pilot	Chen Yi HAARI, China	Participants of the comparisons: VNIIFTRI, Russia HAARI, China At the stage of the technical protocol preparation
790/TR/19	Calibration of sound calibrators	Supplementary COOMET.AUV.A-S4	E. Sadikoglu TÜBİTAK ÜME, Turkey	Participants of the comparisons: TÜBİTAK ÜME, Turkey BelGIM, Belarus VMC, Lithuania VNIIFTRI, Russia NSAI-NML, Ireland DP NDI "Systema", Ukraine SASO-NMCC, Saudi Arabia Agreeing on the technical protocol
	Comparisons in the field of the ultrasound power measurements in the water	key	TÜBİTAK ÜME, Turkey	Participants of the comparisons: VNIIFTRI, Russia DP NDI "Systema", Ukraine TÜBİTAK ÜME, Turkey NIM, China At the registration stage

4 STATUS OF AUV CMCs OF COOMET NMIs

Information on AUV CMCs of COOMET National Metrology Institutes, published in KCDB

CMC AUV	Date of publication in KCDB	NMI	Number of published entries
COOMET.AUV.1.2001 COOMET.AUV.5.2009	2002-06-07 2009-09-18	VNIIFTRI, Russia	72
COOMET.AUV.2.2003 COOMET.AUV.7.2014 COOMET.AUV.9.2017	2004-04-07 2015-01-27 2018-01-17	BelGIM, Belarus	31
COOMET.AUV.3.2005 COOMET.AUV.4.2007 COOMET.AUV.6.2011 COOMET.AUV.7.2014 COOMET.AUV.8.2007	2005-08-31 2008-01-09 2011-10-05 2015-01-27 2017.09.21	DP NDI «Systema», Ukraine	30

At present, an intraregional review of the CMC batch of VNIIFTRI (Russia), updated in accordance with the results of the key comparisons CCAUV.A-K5, is being conducted.

5 PARTICIPATION OF COOMET IN INTERREGIONAL REVIEW OF CMCs

During the reporting period the TC took part in the interregional review of the following CMCs:

- ARMP.AUV.15.2019 (reviewed on 11.11.2020);
- CMC batch of the NMI of Argentina (INTI). The CMC batch was reviewed using KCDB 2.0.

6 COOPERATION WITH INTERNATIONAL AND REGIONAL ORGANIZATIONS IN THE FIELD OF AUV

In 2020-2021 the TC members took part in a number of international events, conferences and seminars:

In 2020:

- PTB seminar "Preparation of an accreditation audit for calibration laboratories", 21-22 January 2020, Kiev, Ukraine;
- webinar of the Ministry of Economy "ACAA Agreement: Industrial dialogue – a step towards", 23 January 2020;
- PTB seminar "Support for the implementation of the EU-Ukraine Association Agreement in the field of metrology", 18 February 2020, Kiev, Ukraine;
- 7 International scientific and technical conference "Metrology, information and measuring technologies and systems" (MIMTS-2020), 18-19 February 2020, Kharkiv National University of Radio Electronics, Kharkiv, Ukraine;
- online NPL Training course "Introduction to Measurement and Metrology", 06, 19 May 2020;
- online NPL Training course "Introduction to Measurement Uncertainty", 07, 11, 21, 22 May 2020;
- online NPL Training course "Understanding Uncertainty Budgets", 07, 12 May 2020, 05, 06 June 2020;
- online NPL Training course "Understanding and Evaluating Measurement Uncertainty", 11, 14 May 2020, 14 June 2020;
- online NPL Training course "Dimensional Measurement User", 04 June 2020;
- PTB webinar "Traceability in comparison", 5 June 2020;
- PTB webinar "Calibration intervals", 17 June 2020;
- PTB webinar "New legislative framework of EU", 24-25 June 2020;
- PTB webinar "Calibration intervals, questions & answers", 2 July 2020;
- PTB webinar "Verification interval", 15 July 2020;
- XII International scientific and technical conference "Metrology and Measuring Techniques" ("Metrology -2020"), 06-08 October 2020, National Scientific Center "Institute of Metrology", Kharkiv, Ukraine (online);
- XV meeting of COOMET TC 1.2, 13 October 2020 (online);
- 22nd online meeting of the COOMET Quality Forum, 19 – 20 November 2020;
- PTB webinar "Quality control: Ensuring reliability of results", 1-2 December 2020;
- participation in webinars on the communicative platform on technical regulation in Ukraine (www.techreg.in.ua) on the relevant issues of developing the system of technical regulation, conformity assessment, accreditation, standardization and metrology during year 2020.

In 2021:

- CIPM online seminar "The International System of Units (SI) in FAIR digital data", 22-26 February 2021;
- Online PTB seminar "Preparation and interpretation of calibration certificates according to the requirements of ISO/IEC 17025:2017", 02-03 March 2021;
- online course under the BIPM CBKT Programme "KCDB 2.0 – Online technical exchanges for CMC Writers/Reviewers in General Physics", 29 March 2021;
- 21 online meeting of COOMET TC2 "Legal Metrology", Working Group for Measuring Systems, 07-08 April 2021.

7 PROSPECTS

1. Creation and upgrade of national measurement standards;
2. Planned and current comparisons
3. Participation in APMP comparison in field of vibration APMP.AUV.V-K5 (NMIs of Russia and Ukraine are expected to take part)
4. Publication of CMCs based on the results of key comparisons of CCAUV and COOMET.

Participation of COOMET NMIs in key comparisons of CCAUV

Acoustics Sound in air	Acoustics Sound in water	Ultrasound	Vibration
◆ CCAUV.A-K1 ◆ CCAUV.A-K2 ◆ CCAUV.A-K3 CCAUV.A-K4 ◆ CCAUV.A-K5 (September 2014)	◆ CCAUV.W-K1 ◆ CCAUV.W-K2	◆ CCAUV.U-K1 CCAUV.U-K2 ◆ CCAUV.U-K3 CCAUV.U-K4	◆ CCAU.V-K1 ◆ CCAU.V-K2 ◆ CCAU.V-K3 ◆ CCAU.V-K4 ◆ CCAU.V-K5

◆ COOMET NMIs have taken/are taking part in the CCAUV comparisons

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