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# The annual report of the chair of TC 1.2 „Acoustics. Ultrasound. Vibration” on work accomplished from May 2008 to April 2009

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## 1. General features of cooperation in this area

Currently, the NMIs from 15 COOMET member-countries are represented in TC 1.2 "Acoustics. Ultrasound. Vibration".

The TC 1.2 members and RMOs through which COOMET member-countries submit CMCs of their NMIs are shown on fig. 1 below.

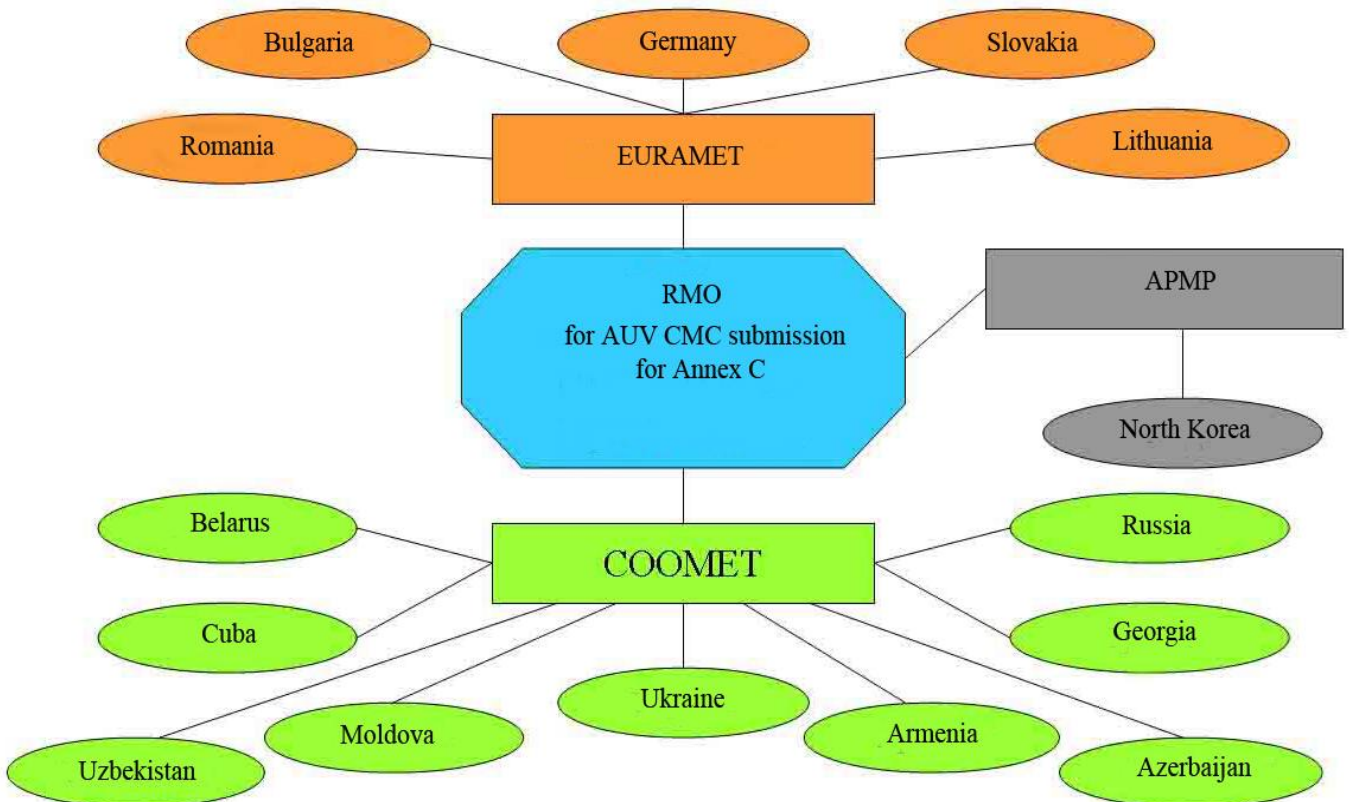


Figure 1

As usual, NMIs from Belarus (BelGIM), Russia (VNIIM, VNIIFTRI) and Ukraine (Systema) are actively involved in the TC work.

„Ukrmetrtestandart“ is a participant of COOMET key comparison COOMET. AUV.V-K1.

Romanian NMI (INM) is a participant of two COOMET key comparisons as: COOMET. AUV.A-K3 and COOMET. AUV.V-K1.

Slovakian NMI (SMU) declared its participation in COOMET supplementary comparison No 434/BY/08.

Physicotechnical Institute of Germany (PTB) is a pilot laboratory in two COOMET key comparisons: COOMET. AUV.A-K1 and COOMET. AUV.A-K1.1.

## 2. TC meetings

Totally, there were five meetings of TC. The last 5<sup>th</sup> meeting was held from 29 to 30 May 2008 in D.I. Mendeleev Institute for Metrology (VNIIM), St. Petersburg, Russia. There were 12 participants from five following countries: Belarus, Denmark, Cuba, Russia and Ukraine. The participants were members of TC 1.2, lead experts in AUV from COOMET NMIs and guests. The most important decisions of the meeting included the following:

- to approve Draft B reports on key comparisons COOMET.AUV.A-K1 and COOMET.AUV.A-K1.1 (last versions) and ask coordinator of the project Dr. T. Fedtke to submit them to CCAUV for consideration;
- to ask Dr. A.E. Isaev to prepare proposals for Classification of Services for underwater acoustics to be submitted at the 6th meeting of CCAUV;
- to submit proposals for COOMET comparison program and start organization of
  - COOMET key comparison of national standards for sound pressure in air over the low-frequency range from 2 Hz to 125 Hz” and
  - supplementary comparison of COOMET national standards according to the project “Calibration of working standard microphones using IEC 61094-5 and IEC 61094-6”;
- to submit a proposal for the 19th meeting of COOMET Committee regarding extension of the membership of TC 1.2 by including Dr. Alexander Isaev as a coordinator in the field of underwater acoustics.

## 3. Status of COOMET projects in AUV

The status of COOMET AUV projects is given in table 1 below:

Project No	Description	KCDB code	Pilot of project	Status
234/BY-/01	Establishment of a working group for COOMET participation in the AUV CMCs review		V. Pozdeeva, BelGIM, Belarus	Working Group of experts from COOMET NMIs is active in this field since January 2002.
323/UA/04	Comparison for primary method of pressure calibration of laboratory standard microphones over the frequency range from 20 Hz to 20 kHz	COOMET. AUV.A-K3	Dr. K. Rasmussen, DPLA, Denmark	<b>Results published</b> Participants of comparison: Denmark, Ukraine, Russia, Poland, Romania
337/BY/05	Bilateral comparison of national standards by pressure calibration of microphones type WS1 and WS2 using electrostatic actuator technique	Pilot	V. Pozdeeva, BelGIM, Belarus	<b>Comparison finished</b> Participants of comparison: Russia – Belarus Research report is available
369/BY/06	Bilateral comparison of the national sound pressure standards	Pilot	V. Pozdeeva, BelGIM, Belarus	<b>Comparison finished</b> Participants of comparison: Russia – Belarus Research report is available
226/DE-/01	Comparison of calibrations of laboratory standard microphones (63 Hz – 10 kHz)	COOMET. AUV.A-K1	Dr. T. Fedtke, PTB, Germany	<b>Draft B approved at the 6<sup>th</sup> meeting of CCAUV in October 2008</b> Participants of comparison: Ukraine, Russia, Germany, Poland, Turkey

Project No	Description	KCDB code	Pilot of project	Status
316/UA/04	Bilateral comparison by calibration of microphones type LS1P	COOMET. AUV.A-K1.1	Dr. T. Fedtke, PTB, Germany	<b>Draft B approved at the 6<sup>th</sup> meeting of CCAUV in October 2008</b> Participants of comparison: Ukraine – Germany
308/UA/04	Key comparison of national standards for vibration parameters (in regard to sinusoidal acceleration) over the frequency range from 20 Hz to 5000 Hz	COOMET. AUV.V-K1	Dr. V. Smirnov, VNIIM, Russia	<b>Measurements finished Draft A is under preparation</b> Participants of comparison: Russia, Belarus, Poland, Ukraine, Romania, Turkey
392/UA/07	Comparison of the national standards for sound pressure in air over the low frequency range from 2 Hz to 125 Hz	Pilot	Dr. V. Chaly "Systema", Ukraine	Completed in 2008 <b>Draft B available</b> Participants of comparison: Ukraine, Russia
405/RU/07	Comparison of the national standards for sound pressure in water over infrasonic and low audio frequency range (2 Hz to 4 kHz)	Pilot	Dr. A. Isaev, VNIIFTRI, Russia	Completed in 2008 <b>Draft B available</b> Participants of comparison: Ukraine, Russia
434/BY/08	Comparison of national standards for sound pressure in air (Pa) using calibrations of working standard microphones	Supplementary	V. Pozdeeva, BelGIM, Belarus	<b>Technical Protocol is under preparation</b> BelGIM, Belarus VNIIFTRI, Russia SMU Slovakia Systema, Ukraine
448/RU/08	Comparison of measurements of the velocity of longitudinal ultrasonic wave propagation in solid media	Pilot	Dr. V. Lugovoi, Far East office of VNIIFTRI, Russia	<b>1<sup>st</sup> round of comparison completed</b> Russia (Far East office of VNIIFTRI), Belarus (BelGIM)
431/UA/08	Comparison of national standards for sound pressure in air over a low-frequency range	COOMET. AUV.A-K2	Dr. V. Chaly, Systema	<b>On-going</b> Systema, Ukraine VNIIFTRI, Russia

Currently, there are 10 completed projects: 275/RU/03 (meeting of TC 1.2), 309/UA/04 (meeting of TC 1.2), 300/BY/04, 323/UA /04, 337/BY/05, 369/BY/06; 226/DE/01; 316/UA/04; 392/UA/075; 405/RU/07;

4 on-going projects: 308/UA/04; 448/RU/08; 431/UA/08; 434/BY/08;

and 1 permanent project 234/BY/01 developed at the 1<sup>st</sup> meeting of TC.

## 4 Work on implementation of the Mutual Recognition Arrangement for national standards

### 4.1 Status of the CMCs of COOMET NMIs in AUV

The AUV CMCs tables of Russia (COOMET.AUV.1.2001), Belarus (COOMET.AUV.2.2003) and Ukraine (COOMET.AUV.3.2005 and COOMET.AUV.4.2007) are published in BIPM KCDB.

The third part of Ukrainian CMCs in air acoustics is currently under intra-RMO review (preparation of some additional information requested by Dr. T. Fedtke from PTB (Germany) is in progress now).

The Russian CMCs (**COOMET.AUV.5.2009**) have been submitted for inter-regional review.

The other NMIs which participate in TC 1.2 or submit their CMCs through COOMET provided no report regarding CMCs preparation over the period in question.

#### **4.2 COOMET participation in interregional review of CMCs**

Over the period in question COOMET performed interregional review of the following CMCs:

<b>CMCs</b>	<b>Date of publication of review results</b>	<b>Target date</b>
<b>EUROMET.AUV.8.2008</b>	09.09.2008	08.09.2008
<b>APMP.AUV.4.2008</b>	14.08.2008	18.08.2008
<b>APMP.AUV.5.2009</b>	13.03.2009	20.03.2009
<b>APMP.AUV.6.2009.</b>	20.03.2009	20.03.2009

### **5 Liaisons with the relevant international and regional organizations**

The TC of COOMET maintains relatively close cooperation with TC AUV EUROMET, whose members took part in the meetings of TC 1.2, in the international seminar organized in collaboration with TC 1.2, and in COOMET key comparisons for air acoustics and vibration (NMIs from England, Denmark, Poland and Turkey).

Members of TC 1.2 attended the meetings of CIPM Consultative Committee for AUV and its Working Group "CCAUV RMO WG". The participants of the last 6<sup>th</sup> meeting of CCAUV included four members of TC 1.2 representing BelGIM and VNIIFTRI, respectively. During this meeting, COOMET participants submitted proposals of VNIIFTRI for expansion of the Classification of Services in underwater acoustics. This meeting proposed two new following CIPM key comparisons: CC AUV.V-K2 and comparison for underwater acoustics. COOMET NMIs (VNIIM and VNIIFTRI) declared their participation.

Members of TC 1.2 participated in the meetings of IEC/TC 29 and working groups WG8 and WG13 of IEC/TC 87. This year the participation in the meetings of TC AUV EURAMET and IEC/TC 87 is scheduled.

Valentina Pozdeeva  
Chair, TC 1.2