

May 14<sup>th</sup>, 2010

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## 1. General Aspects

This report summarizes activities of the Technical Committee for Acoustics, Ultrasound and Vibration (TC AUV) from June 2009 to May 2010.

All TC AUV activities are organized in the following way: general issues are within the responsibility of the Technical Committee and technical issues are handled within the three Sub-Committees (SC) covering different subject fields. The activities of each Sub-Committee are coordinated by the appointed Convenor. The membership within Sub-Committees is as follows:

SC "Acceleration and Vibration"	: 15
SC "Sound in Air"	: 17
SC "Ultrasound and Underwater Acoustics"	: 4

All in all, the TC AUV has representatives from 25 of the 33 members of EURAMET.

A new Convenor for the SC Sound in Air was elected at the SC meeting at SP, Borås in 2010. The new Convenor is Claudio Guglielmone (INRiM).

## 2. Projects

During the period under review there were a total of 9 active projects. Statistics for TCAUV's projects is presented in the tables below.

	<b>Number of Projects</b>
Proposed	8
Agreed	10
Completed	30
<b>TOTAL</b>	<b>48</b>

	<b>Comparison</b>	<b>Co-operation</b>	<b>Traceability</b>	<b>Consultation</b>	<b>Total</b>
<b>Proposed</b>	5 (2)	3 (3)	-	-	8 (5)
<b>Agreed</b>	2 (2)	1 (1)	3 (3)	4 (4)	10 (10)
<b>Completed</b>	13 (13)	16 (16)	-	1 (1)	30 (30)

(Figures in brackets denote the numbers for the previous period)

### Breakdown of active projects by subject field

<b>Subject Field</b>	<b>Number of Projects</b>
Sound in Air	3
Vibration	3
Ultrasound and Underwater Acoustics	3
<b>TOTAL</b>	<b>9</b>

New projects have been discussed at the TCAUV meeting in Borås, 2010. These will be formalised in the coming months.

### 3. Comparisons

#### 3.1. Key Comparisons

NMIs from EURAMET are participating in the following CCAUV comparisons:

**CCAUV.A-K2 “Calibration of LS1P microphones at low frequencies”** with 6 participants from EURAMET (BEV, CEM, DPLA, NPL, PTB, UME). The Final Report of the comparison has been approved for equivalence at the CCAUV, and the results published in the KCDB database.

**CCAUV.A-K4 “Free-field reciprocity calibration of LS2 microphones”** with 3 participants from EURAMET (LNE, DPLA, PTB, though PTB acting as a COOMET member). The comparison has been which is piloted by DFM and the CENAM (Mexico). Once the CCAUV approves the results for equivalence, the final report will prepared for its publication in the KCDB.

The following EURAMET AUV comparisons are in progress:

**EUROMET.AUV.V-K1.1** (EUROMET project 897). Five NMIs participate BEV (AT), INETI (PT), LNE (FR), NCM (BG) and PTB (DE). PTB is acting as the pilot of the comparison. The Final Report of the comparison is under preparation.

**EURAMET.AUV.A- S1** (EURAMET project 1126). Comparison of pressure reciprocity calibration of microphones among CENAM (MX), DANIAMet-DFM (DK), DMDM (RS), and INM (RO). The role of Pilot laboratory is undertaken by DFM and CENAM. The measurement round has been finished, and a draft A report will be produced by CENAM.

EURAMET NMIs are also involved in key comparisons within other RMOs.

**COOMET.AUV.A-K1:** 4 participants from EURAMET (PTB, SMU, GUM, UME). PTB is the pilot of the comparison. The comparison has been approved for equivalence, and published in the KCDB.

**COOMET.AUV.V-K1:** 3 participants from EURAMET (GUM, UME, INM). VNIIM (RU) is the pilot of the comparison. The Measurement stage has been completed. The Draft A of the comparison report is under preparation.

#### 3.2. Bilateral Comparisons

There are three bilateral comparisons at different stages underway.

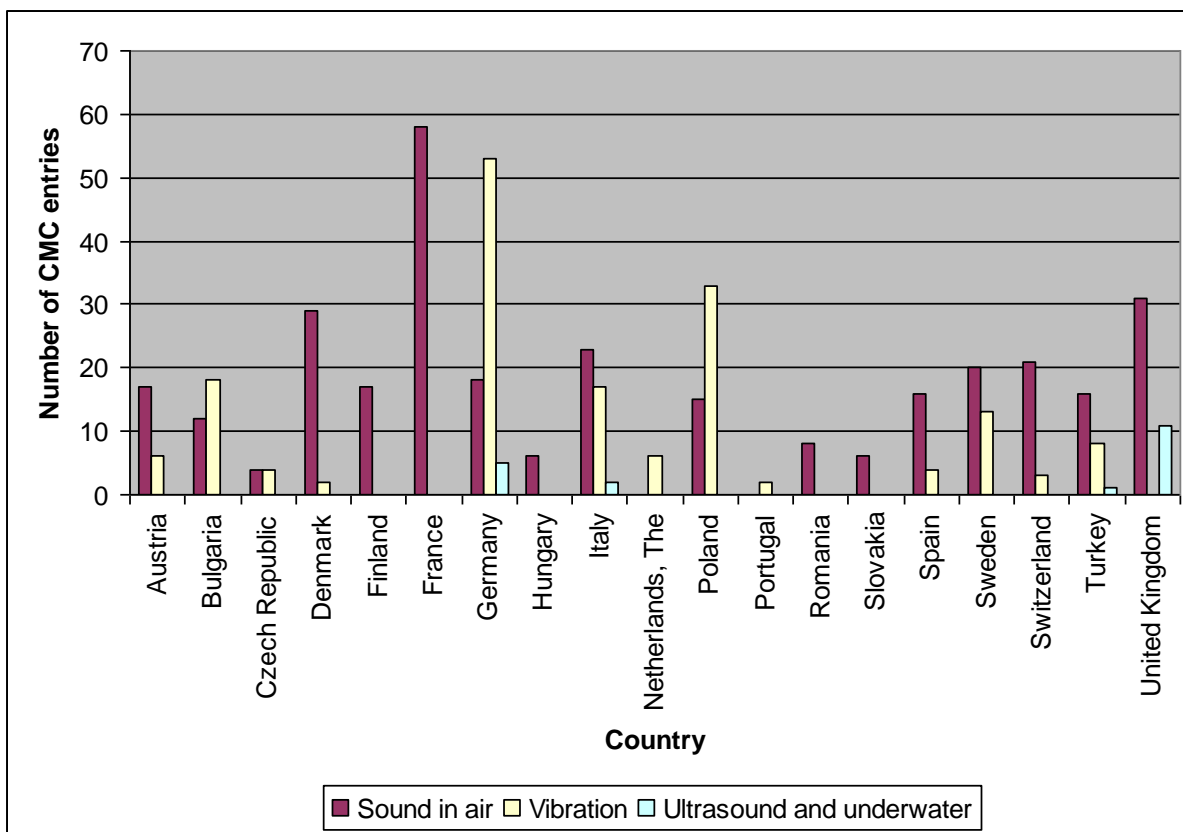
**EURAMET project 1062:** Bilateral comparison in hydrophone calibration up to 50 MHz between NPL and PTB.

**EURAMET.AUV.V-K1.2** (EURAMET project 1066) is a comparison on the calibration of accelerometers between METAS and PTB.

**EURAMET project 1142:** Bilateral Comparison of Accelerometer Calibration between MIKES and SP.

### 4. CMCs

19 European countries have CMC entries approved and published on the BIPM KCDB. The overall number of published CMCs is 505. The distribution by country and subject field is shown in the figure below.



Apart from the CMC submission EUROMET.AUV.8.2008 no other batch was sent for review during 2009. It is expected that a new batch is sent out for internal review after the spring meetings when information from some CCAUV Key Comparisons is published in the KCDB.

The TC working group for CMC Review has been involved in the assessment of several CMC batches from other RMOs. Currently, the working group is reviewing the batch AMPM.AUV.7.2010 that consists of CMCs on Vibration from NIM, China.

## 5. Activities of the Sub-Committees

The activities of each Sub-Committee are coordinated by the appointed Convenor. The level of participation in Sub-Committees varies significantly. Each Sub-Committee meets annually. Convenors of all Sub-Committees were re-elected in 2008 for another two years term. However, the Convenor of the Sub-Committee for Sound in Air has left office early in 2010, leaving the Convenor post vacant. A new Convenor will be elected in the 2010 meeting of the Sub-Committee.

## 6. Participation in iMERA-Plus

EURAMET TC AUV is involved in the T2.J07 Joint Research Project. The project, entitled “External Beam Cancer Therapy” includes a work package related to the characterization of High Intensity Focused Ultrasonic (HIFU) transducers. Four NMIs, PTB (DE), NPL (UK), INRiMT (IT) and UME (TR) are involved in the activities within the work package.

## **7. Meetings**

There have been some changes in the planning of the regular meetings in 2010.

- The meeting of the Sub-Committee for Acceleration & Vibration that was to be held on the 19<sup>th</sup> and 20<sup>th</sup> of April, 2010 hosted by the CEM, Madrid, Spain was cancelled because the European air-space was closed due to the ashes of the Icelandic volcano Eyjafjallajökuld. The meeting has been reprogrammed to be held in conjunction with the CCAUV meeting at the BIPMA on October.
- The meeting of the Sub-Committee for Ultrasound and Underwater Acoustics will be held on the 17<sup>th</sup> and 18<sup>th</sup> of May, 2010 at the NPL, Teddington, UK.
- The joint meeting of the Sub-Committee for Sound in Air and the TC AUV meeting was held on the 6<sup>th</sup> and 7<sup>th</sup> of May, 2010 at the SP, Borås, Sweden. The meeting was attended by 18 participants. Representatives from Greece (EIM) and Hungary (MKEH) attended the meeting for first time.

During the TCAUV meeting the participants discussed the possibility of holding a joint meeting with all the Sub Committees in 2011. This is being discussed among the Convenors; a decision should be taken by the end of June. DMDM (Serbia) has proposed to organise the TCAUV meeting in Belgrad. The final decision will be taken as soon as the plans for the joint TCAUV meeting are laid.

## **8. Other issues**

The TCAUV has kept a low profile in the EMRP in 2009 and 2010. The representatives attending the 2010 meeting of the TCAUV have been encouraged to consult the local stakeholders in order to gather ideas to be submitted to the EMRP calls in 2011.

Salvador Barrera-Figueroa  
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14<sup>th</sup> of May, 2010  
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