



# APMP TCAUV Activity Report 2013

Qiao SUN  
the 9<sup>th</sup> CCAUV meeting  
30-31 Oct 2013  
BIPM



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# APMP TCAUV



- Member Economies
- Associate Economies



# APMP TCAUV

## 15 Members:

- **12 Full Member Economies**

Australia, China, Chinese Taipei, Hong Kong China, India, Indonesia, Japan, South Korea, Malaysia, Singapore, Thailand and Vietnam

- **3 Associates**

Egypt, Fiji and South Africa



- **Qiao SUN (Joe), NIM, China**  
**TCAUV Chair, GA 2011-2014**



# CMCs in AUV

No.	Economy	Laboratory	Before 2013	Up to date	A	W	V	Status
1	Australia	NMIA	23	23	13		10	
2	China	NIM	53	53	19	3	31	
3	Chinese Taipei	CMS	39	39	21		18	
4	Hong Kong	SCL	15	15	15			
5	India	NPLI	34	34	23		11	
6	Indonesia	KIM-LIPI	15	15	15			
7	Japan	NMIJ	8	8	4		4	
8	South Korea	KRISS	41	41	33		8	
9	Malaysia	NML-SIRIM	21	21	8		13	
10	Thailand	NIMT		18	18			
11	Singapore	A*STAR						Preparation
12	Vietnam	VMI						
<b>Total</b>			<b>249</b>	<b>267</b>	<b>169</b>	<b>3</b>	<b>95</b>	



# Inter-RMO review

- **EURAMET.AUV.2.2012** *published*
- **APMP.AUV.10.2012** *published*  
Though rejected on the first round.

**Note:** RMO supplementary comparisons can be used as direct supporting evidence, only after approved by KCWG and published by JCRB, as stipulated in the latest version of CIPM MRA-D-05, June 2012.



CC Level

# Comparisons

- **CCAUV.A-K5** *in progress*  
with KRISS, NIM and NMIJ as participants **(3)**.
- **CCAUV.U-K3** *Draft A*  
with KRISS, NIM, NMIA and NPLI as participants **(4)**.
- **CCAUV.V-K2** *Draft A*  
with KRISS, NIM and NMIJ as participants **(3)**.
- **CCAUV.V-S1** *in progress*  
with KRISS as participant **(1)**.



TC Level

# Comparisons

- **APMP.AUV.A-S1** *Draft B*  
with NMC A\*STAR, CMS, KIM-LIPI, KRISS, NIM, **NIMT**, NIS, NMIA, NMIJ, NMISA, NML-SIRIM, NPLI and SCL as participants (**13**).
- **APMP.AUV.V-K1.1** *Draft B*  
with NMC A\*STAR, CMS, NIMT and **NMIJ** as participants (**4**).
- **APMP.AUV.V-S1** *Published*  
with CMS, KRISS, **NIM**, NIMT, NMIA, NMIJ and **NMISA** as participants (**7**).



General remark:  
Although this is a report of a **supplementary** comparison, we have to assume that the intention is to use it for the justification of future CMC entries in the KCDB. For this purpose some conditions should be met by the report:

- **A final result (per frequency and level) should be defined.** Since the definition of a "reference value" is reserved for CIPM KCs, a mean value could be defined as "result". On this behalf the report is unclear in so far as the weighting for the calculated mean is not reported, and the contribution or exclusion of outliers (NIS) to the mean is not discussed. The proposal is, to use a **weighted mean** with its correspondingly calculated uncertainty in those cases where the reported uncertainties of the participants differ and to exclude outliers from the calculation of the mean. The choice of the "result" should be motivated in the report and the applied formula should be documented.
- As a higher level CIPM-comparison is not existent for a linking of the results it would be helpful to calculate, agree upon and report **degrees of equivalence between the participants**. Without those the comparison does not really fit with the general scheme of KCs layed out by the CIPM MRA.
- If all the above items were omitted on purpose and in concordance with the participants, this should be clearly stated at the beginning of the report, together with **a comment on the strategic purpose other than the justification of CMCs**.

Technical comments:

1. It would be helpful to include explicitly the values of the measurement uncertainties reported by NIMT for their stability measurements. Also, these values could be indicated on the graphs (such as in Figs. 1-1 to 2-2).
2. The data shown in the Fig. 1 graphs show some particular features, which it may be worth noting and commenting on.



TC Level

# Comparisons

- **APMP.AUV.A-S1** *Draft B*  
with **NMC A\*STAR, CMS, KIM-LIPI, KRISS, NIM, NIMT, NIS, NMIA, NMIJ, NMISA, NML-SIRIM, NPLI and SCL** as participants **(13)**.

**Recommendation TCAUV12-1:** The 12<sup>th</sup> TCAUV meeting recommended that NMIs involved in the comparison should send emails about their decisions to TC chair before Dec 15, 2012 whether APMP.AUV.A-S1 comparison is just for a strategic purpose or as CMC supported evidence. If for the latter, a task force should be organized by technical volunteers for the major revision of Draft B report.

**Actions**

- **NIMT, NMIA, NIM** and **CMS** work together for a new report which will meet the basic technical requirements from KCWG,
- all the information and material shared within this team,
- Dr. Andrew Scott is responsible for the drafting work of the new report and others assist him actively and make their input as well.



TC Level

# Comparisons

- **APMP.AUV.A-P1** *in progress* **Sound level meter in the free field** with **KRISS** and NIM as participants (2).
- **APMP.AUV.A-P2** *Draft A* **Multi-frequency acoustic calibrator** with **NMC A\*STAR** and DPLA as participants (2).
- **APMP.AUV.V-P1** *in progress* **Shock acceleration** with CMS, **NIM**, NIMT, and SPEKTRA as participants (4).

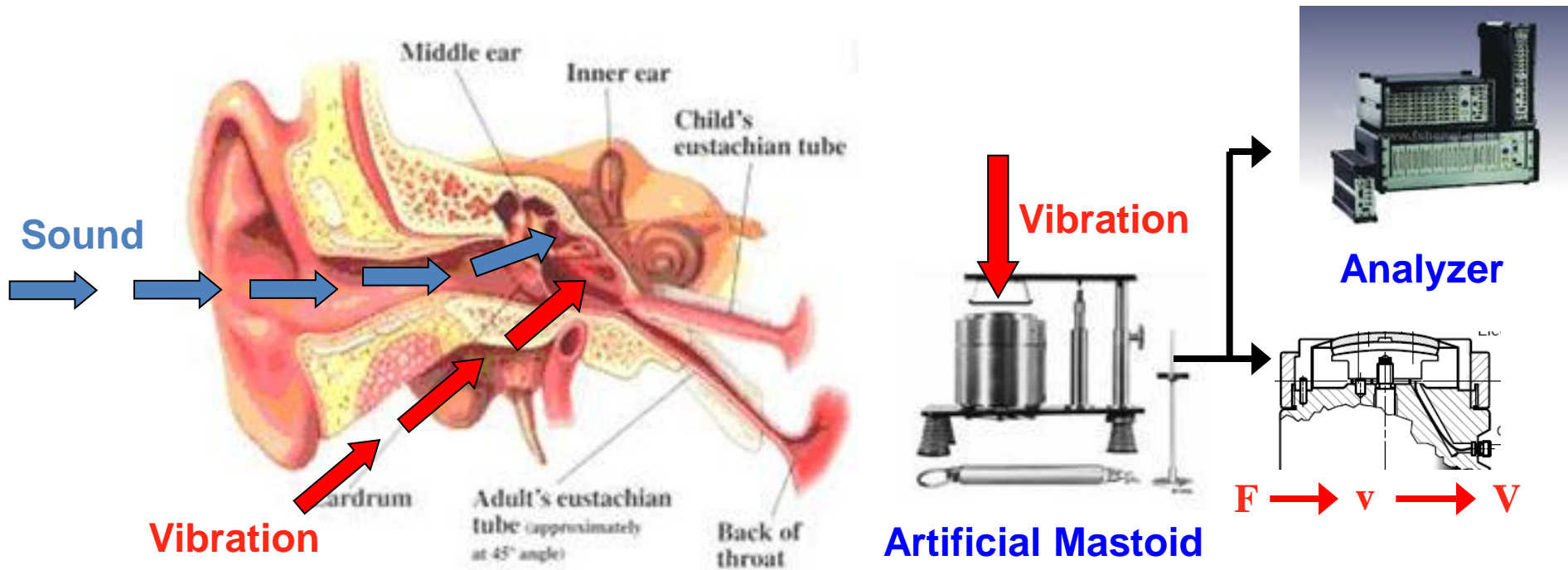
**Note:** 1. usually close-related to previous TC initiative projects completed.  
2. the chance to try something new.

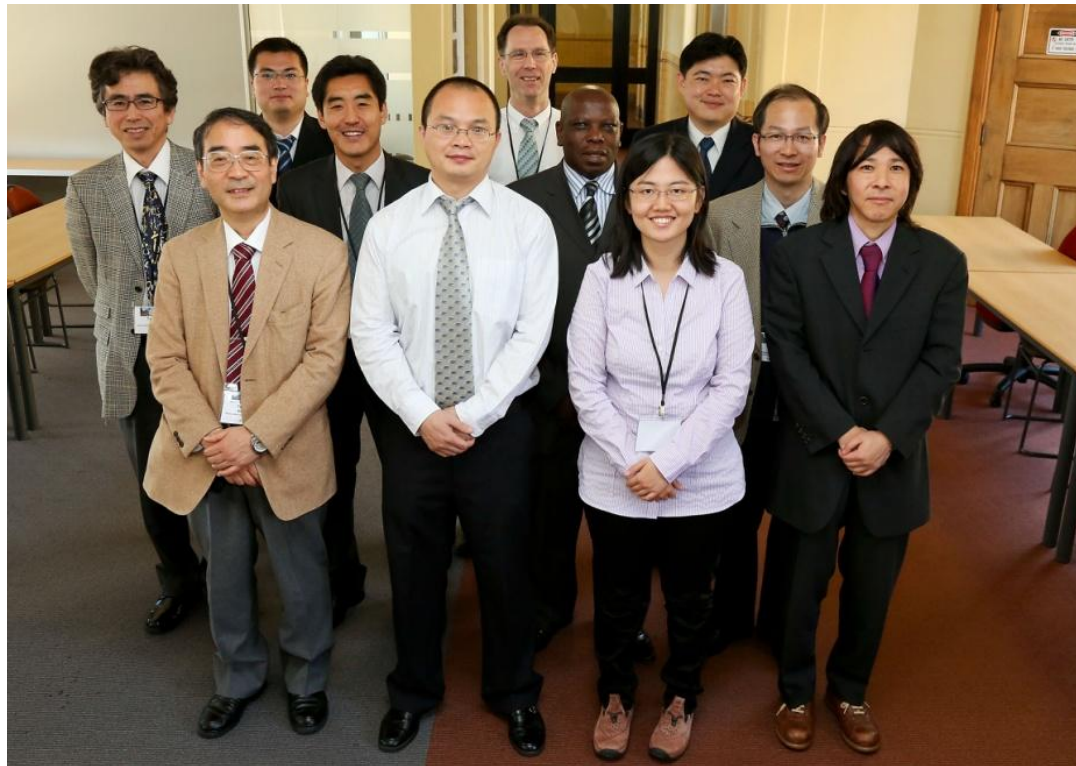
# APMP TC Initiative Projects

## TCAUV Project 2013

- **Research on technique for Artificial Mastoid Comparison with NIM and NMIA as participants.**

**(US\$ 5000)**





***Thank you!***

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