



SIM MWG-9 REPORT TO THE 11th CCAUV MEETING

September, 2017

The Metrology Working Group number 9 (MWG-9) is responsible for all activities related to Acoustics, Ultrasound and Vibration Metrology within the Interamerican Metrology System (SIM).

The position of chairperson of SIM MWG-9 is held by Dr. Gustavo Ripper from INMETRO/Brazil since October 2015.

Currently, SIM has 9 NMIs with interest in AUV. Five of them (Canada, USA, Mexico, Brazil and Argentina) have already CMCs published in the Appendix C of the MRA and four (Canada, USA, Mexico and Brazil) are full members of the CCAUV.

The participation of SIM members in key and supplementary interlaboratory comparisons:

1) Comparisons concluded:

- CCAUV.V-K3 - INMETRO, CENAM (Metrologia, 2017, **54**, Tech. Suppl. 09001)
- CCAUV.U-K3.1 – INMETRO (Metrologia, 2016, **53**, Tech. Suppl. 09002)
- CCAUV.U-K4 – INMETRO (Metrologia, 2016, **53**, Tech. Suppl. 09004)
- AFRIMETS.AUV.A-S1 – INMETRO (Metrologia, 2016, **53**, Tech. Suppl. 09001)

2) Comparisons in progress:

- CCAUV.V-K4 - INMETRO, CENAM
- CCAUV.V-K5 – NIST, INMETRO, CENAM
- EURAMET.AUV.A-S2 - INMETRO
- CCAUV.W-K2 - INMETRO

The participation of SIM members in technical cooperation activities:

Cooperative activities have been developed within SIM members in order to disseminate technical knowledge and exchange experiences. Some recent initiatives are exemplified below:

2016 – Informal bilateral comparisons between INTI and INMETRO on calibration of pistonphones and LS1P microphones in pressure field – The results were published in the proceedings of ICA 2016, Buenos Aires:

SERRANO, F.A.; RIGANTI, J.M.; MILHOMEM, T.; SOARES, Z., **BI-LATERAL COMPARISON OF LS1P MICROPHONE CALIBRATION BETWEEN INTI AND INMETRO**". In: Proceedings of the 22nd International Congress on Acoustics (ICA 2016), Buenos Aires, 2016.

RIGANTI, J.M.; SERRANO, F.A.; MILHOMEM, T.; SOARES, Z., **"Bilateral comparison of pistonphone calibration between INMETRO and INTI"**. In: Proceedings of the 22nd International Congress on Acoustics (ICA 2016), Buenos Aires, 2016.

2017 – Technical visit and training of one technician from INMETRO at CENAM.



2017 – Informal comparison between INMETRO and CENAM on low-frequency accelerometer calibration from 0,1 Hz up to 80 Hz.

2017 – Informal Comparison between NIST and INMETRO on primary interferometric accelerometer calibration from 10 Hz up to 20 kHz.

Inter-regional reviews of CMCs

SIM MWG-9 has increased considerably its level of participation in interregional reviews and approvals of CMCs. All the CMCs that were posted for interregional review in the period from September/2015 to September /2017 have been analyzed by SIM.

The following CMC batches were reviewed and were then approved after revision:

- AFRIMETS.AUV.4.2016;
- AFRIMETS.AUV.5.2017;
- APMP.AUV.12.2016;
- APMP.AUV.13.2016;
- COOMET.AUV.8.2017.

CMC updates:

The CMC batch SIM.AUV.3.2016, which was submitted by NRC/Canada, was published in the BIPM KCDB on 24th July 2017. A proposal of update from CENAM/Mexico is currently being discussed at intraregional level.

Reinstatement of CMCs

16 vibration services from CENAM that were greyed-out for some time were reinstated on 5th January 2017 after the approval of their QMS by the SIM Quality System Task Force (QSTF).

The number of currently published CMCs in AUV by SIM members (state as on 25 August 2017) is summarized in Table 1.

Table 1 – Number of CMCs (25th August 2017)

Country	AUV			Total
	A	W	V	
Argentina	5		4	9
Brazil	57		31	88
Canada	20	3	9	32
Mexico	23	1	16	40
United States	15	1	16	32



SIM MWG-9 members and actions to increase the participation of SIM countries

SIM has identified nine countries interested in activities related to AUV and will try to develop joint activities in the near future to increase the level of technical exchange and provide technical support to the newcomers obtain their first CMCs in the field. These NMIs and their representatives are presented in Table 2.

Table 2 – SIM MWG-9 members and their representatives

REPRESENTATIVE	INSTITUTION (NMI OR DI)	E-MAIL	Country
Gustavo Palmeira Ripper	INMETRO ^{1,2}	"Gustavo P. Ripper" <gpripper@inmetro.gov.br>	Brazil
Michael Gaitan	NIST ^{1,2}	"Gaitan, Michael (Fed)" <michael.gaitan@nist.gov>	USA
Lixue Wu	NRC ^{1,2}	"Dr Lixue Wu" <lixue.wu@nrc-cnrc.gc.ca>	Canada
Guillermo Silva Pineda	CENAM ^{1,2}	"Guillermo Silva Pineda" <gsilva@cenam.mx>	Mexico
Federico Serrano	INTI ¹	"Federico Serrano" <fserrano@inti.gob.ar>	Argentina
Henry Díaz / Luis Palma	INACAL	"Henry Díaz" <hdiaz@inacal.gob.pe>; "Luis Palma" <lpalma@inacal.gob.pe>	Peru
Adrian Solano Mena	LACOMET	"Adrian Solano Mena" <asolano@lacomet.go.cr>	Costa Rica
Nelson Bahámon Cortés	Instituto Nacional de Metrología - Colombia	"Nelson Bahámon Cortés " <nbahamon@inm.gov.co>	Colombia
Luddy Pilar Huaracacho Guarachi	IBMETRO	"Luddy Pilar Huaracacho Guarachi" <fespejo@ibmetro.gob.bo>	Bolivia

¹ SIM NMIs, with published CMCs: NRC, NIST, CENAM, INMETRO and INTI

² SIM NMIs, members of CCAUV: NRC, NIST, CENAM and INMETRO

Gustavo P. Ripper
SIM MWG-9 chair
05/September/2017