



**SIM  
METROLOGY  
SCHOOL**

# TC Activities Report to the GA

**SPEAKER**

**Lucas Di Lillo**

Instituto Nacional de Tecnología industrial (INTI)

**Panamá | November 2024**

## Council in 2024

### Technical Committee of MWGs

- TC Chair: Lucas Di Lillo (INTI, Argentina)
- Deputy: Marina Gertsvolf (NRC, Canada)
- Most MWGs parallel with corresponding Consultative Committees
- Two (Quality System and Statistics and Uncertainties) are overarching



**TC Chair**  
**Lucas Di Lillo**  
**INTI Argentina**

*“The technical activities in metrology among the members of SIM are generally discussed, and future activities are planned, through the work and interaction of members of the technical committees which, in SIM, are the Metrology Working Groups (MWGs)”*

#### STEERING COUNCIL

PRESIDENT

FORMER PRESIDENT

PROJECT COORDINATOR

TC Chair

QSTF Chair

SUB-REGIONAL COORDINATORS

(EXECUTIVE SECRETARY)

# Technical Committee of Metrology Working Groups

## MWGs Coordinating with the Consultative Committees

<b>MWG 5: Time and Frequency</b> <b>Chair:</b> Diego Luna <a href="mailto:luna@inti.gob.ar">luna@inti.gob.ar</a> <b>Vice Chair:</b> Oscar Fallas / ICE / Costa Rica <a href="mailto:ofallasc@ice.go.cr">ofallasc@ice.go.cr</a>	<b>MWG 6: Ionizing Radiation and Radioactivity</b> <b>Chair:</b> <b>Lizbeth Laureano-Pérez / NIST / USA</b> <a href="mailto:lizbeth.laureano-perez@nist.gov">lizbeth.laureano-perez@nist.gov</a> <b>Vice Chair:</b> <b>Raphael Galea / NRC / Canada</b> <a href="mailto:raphael.galea@nrc-cnrc.gc.ca">raphael.galea@nrc-cnrc.gc.ca</a>
<b>MWG 7: Mass &amp; Related Quantities</b> <b>Chair:</b> Sheila Preste / LATU / Uruguay <a href="mailto:spreste@latu.org.uy">spreste@latu.org.uy</a>	<b>MWG 8: Chemistry and Biology</b> <b>Chair:</b> Melina Perez / CENAM / Mexico <a href="mailto:meperez@cenam.mx">meperez@cenam.mx</a> <b>Vice Chair:</b> Brian Calderon / LACOMET / Costa Rica <a href="mailto:bcalderon@lcm.go.cr">bcalderon@lcm.go.cr</a>
<b>MWG 9: Acoustics, Ultrasound and Vibration</b> <b>Chair:</b> Akobuije Chijioke / NIST / USA <a href="mailto:akobuije.chijioke@nist.gov">akobuije.chijioke@nist.gov</a> <b>Vice Chair:</b> Andres Esteban Perez Matsumoto <a href="mailto:eperez@cenam.mx">eperez@cenam.mx</a>	<b>MWG 10: Flow and Volume</b> <b>Chair:</b> Hernán Brenta / INTI / Argentina <a href="mailto:hbrenta@inti.gob.ar">hbrenta@inti.gob.ar</a> <b>Vice Chair:</b> Abed Morales / INACAL / Peru <a href="mailto:amorales@inacal.gob.pe">amorales@inacal.gob.pe</a>
<b>MWG 11: Legal Metrology</b> <b>Chair:</b> Sandra Rodriguez LACOMET / Costa Rica <a href="mailto:srodriguez@lacomet.go.cr">srodriguez@lacomet.go.cr</a>	<b>MWG 12: Quality System</b> <b>Chair:</b> <b>Gabriel Molina</b> <a href="mailto:gmolina@lacomet.go.cr">gmolina@lacomet.go.cr</a> <b>Vice Chair:</b> <b>Milena Rodríguez</b> <a href="mailto:nmrodriguez@inm.gov.co">nmrodriguez@inm.gov.co</a>
<b>MWG 13: Statistics and Uncertainty</b> <b>Chair:</b> Antonio Possolo / NIST / USA <a href="mailto:antonio.possolo@nist.gov">antonio.possolo@nist.gov</a>	<b>MWG 14: Metrology for Digital Transformation</b> <b>Chair:</b> <b>Rodolfo Souza / INMETRO / Brasil</b> <a href="mailto:rssouza@inmetro.gov.br">rssouza@inmetro.gov.br</a> <b>Vice Chair:</b> <b>Eduin Culma / INM / Colombia</b>

	Chair	Vice Chair
<b>CENAM</b>	2	1
<b>INTI</b>	4	--
<b>NRC</b>	--	2
<b>NIST</b>	3	--
<b>INM</b>	1	2
<b>INMETRO</b>	1	1
<b>INACAL</b>	--	1
<b>LATU</b>	1	--
<b>LACOMET/ICE</b>	2	2

# Comparisons

## Meeting Obligations of the CIPM MRA

SIM Participants Comparisons	Total	AUV	EM	L	M	P/R	T	TF	CHEM	IR
Argentina	179	6	35	19	26	3	7	1	54	28
Bolivia	42		1	2	21		4		14	
Brazil	298	23	29	28	35	7	10	1	114	51
Canada	250	11	57	21	27	22	19	1	49	43
CARICOM	13		3	2	5		2		1	
Chile	62		4	4	30		7		17	
Colombia	70		6	5	23	1	7	1	27	
Costa Rica	54	2	14	2	25		6	1	4	
Ecuador	28		2	2	16		6		2	
Jamaica	15		1	2	10		1		1	
Mexico	299	16	25	29	97	8	8	1	102	13
Panama	28		8	3	13		3	1		
Paraguay	18		3		13		2			
Peru	68	1	4	5	25		5	1	27	
USA	504	11	89	33	79	31	22	1	131	107
Uruguay	73		18	3	18		6		26	2

Country	Participation including pilots	Pilot(s)
Argentina	133	8
Bolivia	13	0
Brazil	262	16
Canada	248	24
CARICOM	1	0
Chile	21	1
Colombia	35	1
Costa Rica	25	1
Ecuador	7	0
Mexico	240	32
Panama	8	0
Paraguay	2	0
Peru	33	1
United States	481	94
Uruguay	39	1



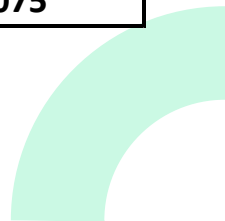
## Calibration and Measurement Capabilities (CMCs)

### Meeting Obligations of the CIPM MRA

- Declared measurement capabilities
- SIM-05 describes SIM implementation of CIPM-MRA-G-13
- SIM accounts for about 17 % of all published CMCs\*
- Efforts underway to optimize CMC declarations (shining the light farther)

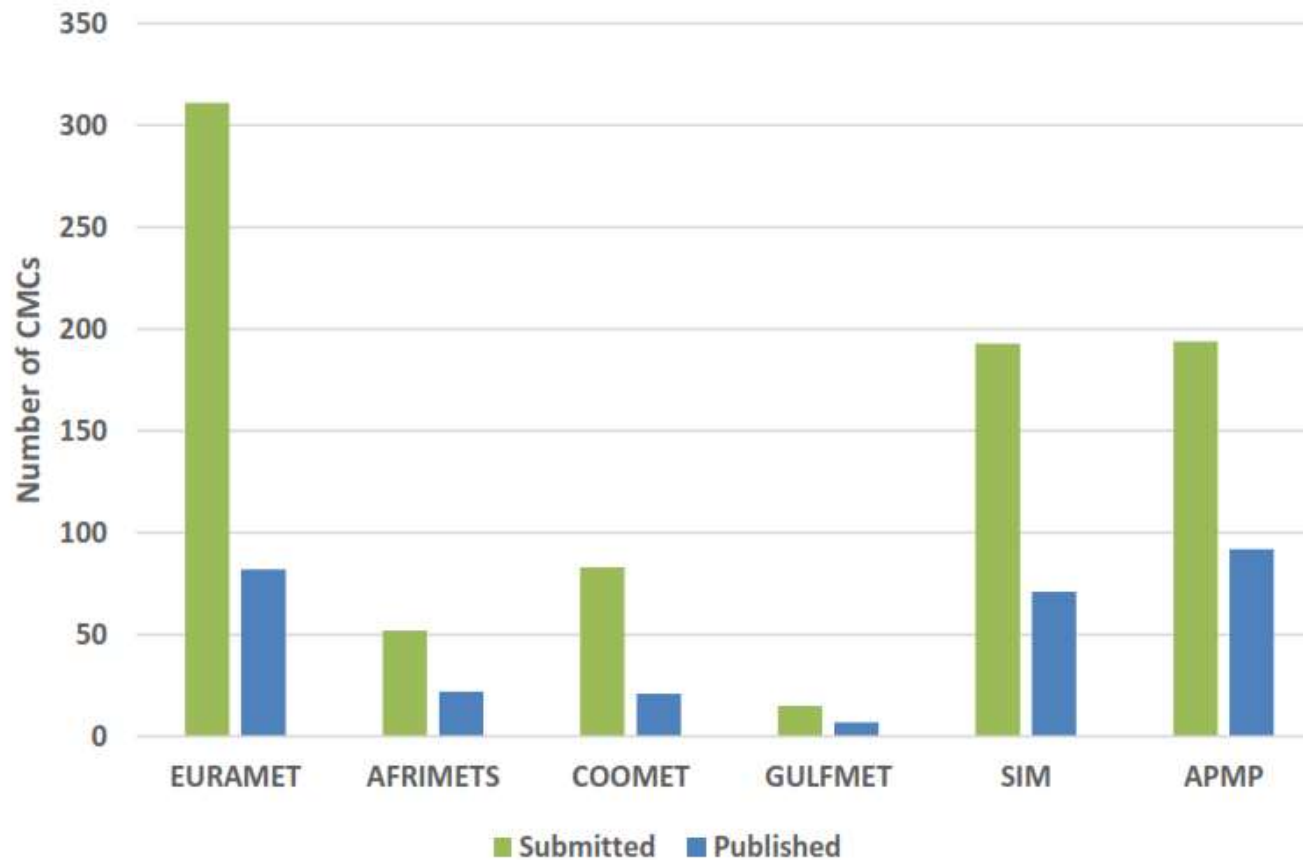
Field	# of CMC from SIM CMCs	Total # of CMC in Field
Acoustics, Ultrasound, Vibration	254	1265
Electricity and Magnetism	938	4615
Length	151	1677
Mass and related quantities	678	2964
Photometry and Radiometry	201	1547
Chemistry and Biology	1123	6527
ionizing Radiation	784	3668
Thermometry	323	2984
Time and Frequency	92	828
<b>Total</b>	<b>4544</b>	<b>26075</b>

\*Absolute number of CMCs is irrelevant



## 848 CMCs submitted of which 295 published in the last 12 months


Number of CMCs submitted and published in the last 12 months by submitting RMO


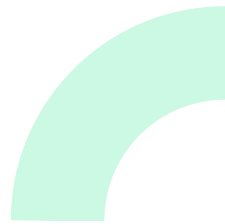




## Working Groups activities

- **SIM-PR-2023-0003**----WG3 (Thermometry)
  - **SIM-PR-2024-0014**--- MWG 9 (Acoustics, Ultrasound and Vibration)
  - **SIM-PR-2024-0015**—TC Meeting-
  
  - Participation of Juan Pablo Babaro (Photometry and Radiometry) in the CCPR meeting
  - Participation of Karina Bastida (Lenght) in the CCL Meeting
  - Participation of Elizabeth Ferreira, Javier Arias, Isabel Amen and Lucas Di Lillo in the JCRB meeting, Sally Bruce participated virtually
  
  - **CABUREK+ Awareness**

Closing workshop of the CABUREK of Digital Transformation, which was held with BID funds at CENAM in November 2023. As part of this event, there was also a workshop on Digital Transformation.“
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- 2 accelerometers were purchased for a comparison of MWG 9.(Acoustics, Ultrasound and Vibration)
  - Dimensional standards were also purchased for a 3D project approved in the BID call.
  - A T&F standard was borrowed from NIST and sent to INTI for MWG 5 (Time and Frequency)
  - Virtual training sessions for MWG 12 (QSTF), which were recorded and are available on the YouTube channel.
  - Viscosity training session in July at CENAM.
  
  - **16 Bilateral Metrologists Internships project (MAR . JUN 2024)**
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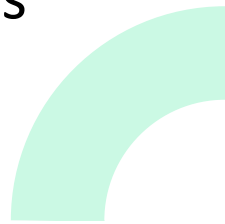


## **SURAMET Project on Hydrogen and Biogas as renewable energy**

**Goal.** Development of Certified Reference Material (CRM) of Hydrogen and Biogas/biomethane to establish Metrological Traceability.

## **SURAMET Project on Advanced Synchronous Measurements of Electric Power and Voltage**

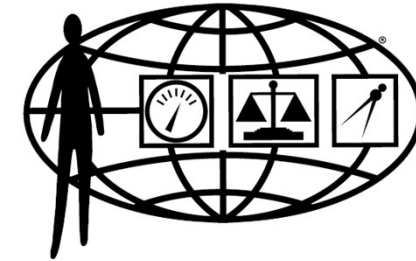
**Goal.** The aim of this activity is to present and discuss metrology methods on precise energy and power measurements and synchronous voltage techniques for SURAMET members.



# Joint SIM-NCSLI

## Project for the Next Generation

- Project started during the pandemic, aims to have **early-career (within 5 years) metrologists** write about scientific or industrial papers
- In 2022, 4 papers from the 5 SIM sub-regions, together with the 6 winners from 2020 & 2021 contests, sent to **present at the NCSLI 2022** Conference in Grapevine, TX (Aug 2022)
- Three of the 4 early career metrologist awardees sent to **present at the NCSLI 2023** Conference in Orlando (July 2023)
- Five winners in 2024 (representing each subregion) sent to **present at the NCSLI 2024** Conference in Denver (6-12 July)\*



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*Serving the World of Measurement*

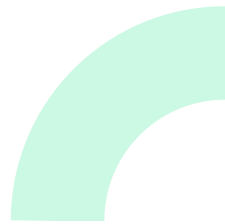


\*Congratulations to Kevin Lemessy, TTBS, runner up on NCSLI Best Paper Award!



# Metrology in Action

## SIM SCHOOL



# 48th JCRB MEETING

24 to 25 September 2024





**¡Gracias!  
Thank You!**



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