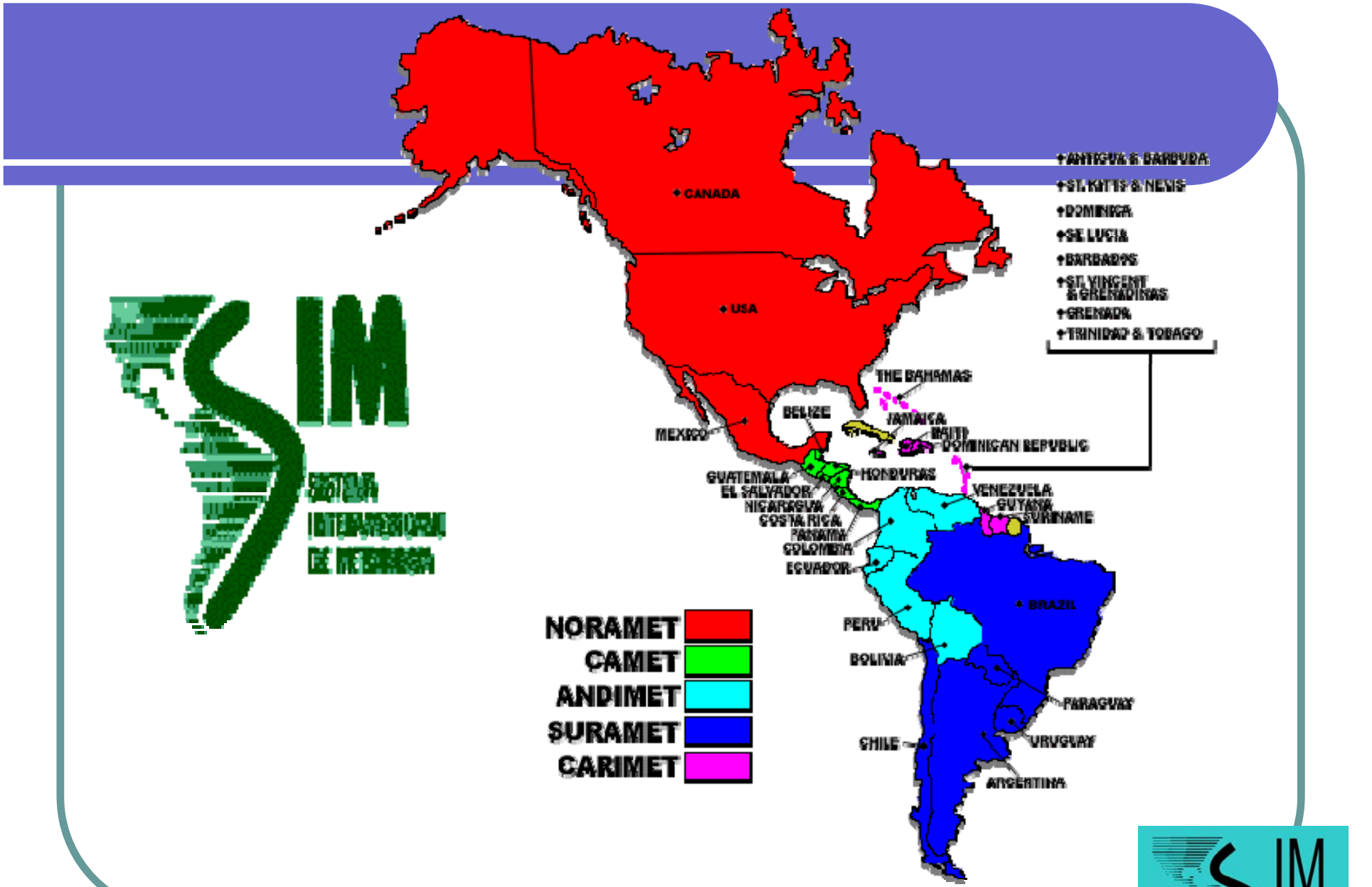


SIM
SISTEMA INTERAMERICANO DE METROLOGIA

INTERAMERICAN METROLOGY SYSTEM - SIM

- **MISSION**

  To promote and support an integrated measurement infrastructure in the Americas that **ensures equity in the market place, improves the quality of life and facilitates international trade.**

- **VISION**

  A representative, transparent and integrated regional metrology organization committed to **ensure uniformity of measurements in the Americas.**

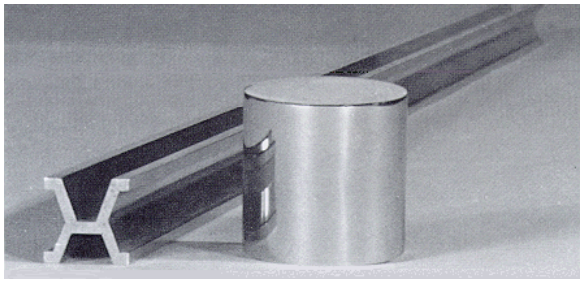
SIM
SISTEMA INTERAMERICANO DE METROLOGÍA

SIM OBJECTIVES

- **The objectives for SIM are the following:**

a) cooperate in the **development of National Metrology Institutes** in each country in the hemisphere;

b) contribute to the **development of measurement infrastructure** required to promote equity in trade;



SIM OBJECTIVES

c) foster competitiveness and quality of the manufacturing sector in order to promote trade and commerce;

d) identify sectors and institutions that can conduct specific multinational activities in support of metrology;

SIM TECHNICALL COMITEE

It is the technical arm of SIM council, and contribute to **achieve SIM objectives in the issues related to technical aspects.**

The Technical Committee appoints the following Technical Working Groups: Metrology Working Groups (MWG), Legal Metrology Working Groups (LMWG), and Documentation Working Groups (DWG). **Mass an related quantities is a MWG (MWG7).**

SIM MWG7 ORGANIZATION

- Chair and a Sub chair of the WG
  - Chair – Claudia Santo - LATU
  - Sub chair– Luis Omar Becerra - CENAM
- Divided into subWG (one per magnitude), each of one has a chair:
  - Mass – Chair Víctor Loayza- INMETRO
  - Volume and Density – Chair Luis Omar Becerra-CENAM.
  - Pressure and vacuum – Chair Pablo Olvera-CENAM
  - Force and Torque – Chair Rafael Soares de Oliveira – INMETRO
  - Hardness – Chair Samuel Low - NIST

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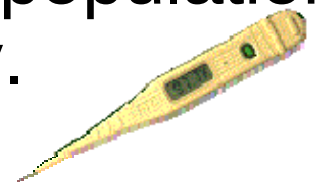
TRAINING ACTIVITIES – SIM MWG7

- 1.- Why training activities?
- 2.- Which training activities?
- 3.- How must they be evaluated to assure objectives are reached?

1.- WHY TRAINING ACTIVITIES ?

- To accomplish SIM objectives:
  - Cooperate in the **development of National Metrology Institutes** in each country in the hemisphere;
  - Contribute to the **development of measurement infrastructure required** to promote equity in trade, protect the environment and to promote the general well-being of the population, including its health and safety.



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EVALUATION OF SIM SITUATION

- Integrated by 34 Countries distributed into 5 sub regions.
- 21 Countries of SIM are signatories of MRA (62%).
  - 6 signatories of MRA as full members
  - 15 signatories of MRA as associated members.

  At least three more countries are about to join MRA in this year

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COUNTRIES WITH CMCs DECLARED (MASS-RELATED)

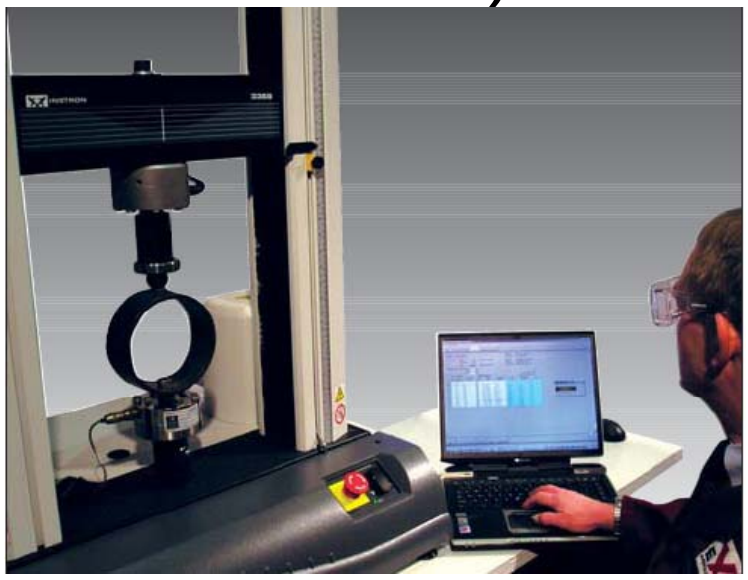
- Mass: Argentina, Brazil, Canada, Chile, Jamaica, Mexico, Panamá, USA and Uruguay. (9 countries=26%)

COUNTRIES WITH CMCs DECLARED (MASS-RELATED)

- Density and Volume: Argentina, Brazil, Canada, Mexico, USA, Uruguay. (6 countries = 18%)

COUNTRIES WITH CMCs DECLARED (MASS-RELATED)

- Pressure and vacuum: Argentina, Brazil, Canada, Mexico, USA (5 countries =15%)
- Force and Torque: Argentina, Brazil, Chile, Mexico, USA (5 countries =15%)
- Hardness: USA



SISTEMA INTERAMERICANO DE METROLOGÍA

1.- WHY TRAINING ACTIVITIES ?

- Strategic plan in training is needed in order to **level metrology knowledge** in the region according to each NMI needs.

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2.- WHAT TRAINING ACTIVITIES ?

CONSIDERATIONS:

- Countries are different. They have:
  - Different activities, that implies different measurements to be performed
  - Different development levels, that implies different requirements in uncertainties of the measurements.
  - And, according to this: **DIFFERENT NEEDS**
- BUT THEY ALL NEED TRAZABLE MEASUREMENTS INTERNATIONALY RECOGNIZED AT A CERTAIN UNCERTAINTY LEVEL

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TRAINING ACTIVITIES MUST BE:

- **According to the needs** (actual and potential) of the NMIs
- Then NMIs have to evaluate what the needs are. Sometimes the first training activities must be focus in helping the NMIs and the country authorities to be conscious of the needs and the way to deal with them.
- **AWARENES SEMINARS** can be organized.

OTHER TRAINING ACTIVITIES

- There are countries more developed than others in some metrology topics, and these countries then **take the responsibility to share their experiences with less developed countries**.
- This is done through:
  - **SEMINARS**
  - **IN LABORATORY TRAINING**
  - **TECHNICALL ASSISTANCE**

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OTHER TRAINING ACTIVITIES

- **WORKSHOPS**:

  All NMIs that participate in a particular discussion can at the same time **build knowledge sharing its own experience and learn from other technician experiences**.

TRAINING ACTIVITIES IN THE LAST 2 YEARS:

MASS AND DENSITY

- MASS:
  - November 2007:SIM - LACOMET Workshop

    "SIM Guidelines on the calibration of non-automatic weighing instruments“
- DENSITY:
  - November 2006:SIM – CENAM- Workshop

    “ Hydrometer calibration by Cuckow method”

PRESSURE AND VACUUM:

Course subject	Attendees	Dates	Training Laboratory
Workshop of Sphygmomanometers	ENAER - Chile, INEN – Ecuador, INDECOPI - Peru, INTI - Argentina, IBMETRO - Bolivia, INEN – Ecuador, INMETRO – Brasil, INTN – Paraguay, SLBS – Santa Lucia	21 - 23 November 2006 in Chile	CENAM
Workshop of Sphygmomanometers	LACOMET – Costa Rica, UTP - Panamá, LNMG - Guatemala, LNML - El Salvador, LNM - Nicaragua	28 – 30, November 2006, in Costa Rica	CENAM
Pressure: "Regional course in pressure, use and calibration of pressure balances"	CENAMEP - Panama, INDECOPI - Peru, ENAER - Chile, INTI - Argentina, SIC - Colombia, IBMETRO - Bolivia, INEN – Ecuador, LACOMET – Costa Rica, BSJ – Jamaica, INMETRO – Brasil, INTN – Paraguay	December 10 to 14, 2007, in Peru	CENAM
Pressure: "Sphygmomanometers and elastic element manometers"	TTBS – Trinidad y Tobago, DBOS – Dominica, BNSI – Barbados, DTI – Surinam, MCI – Haiti, MED – Bahamas, SVGBS – Saint Vincent and Granadinas, GNBS – Guyana, ABBS – Antigua & Barbuda, GBS – Grenada, BSJ – Jamaica,	December 17 to 20, 2007, in Trinidad & Tobago	CENAM

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FORCE AND TORQUE

- **Course in Torque**: (reference number DMM-720-097/2006), November 25th to 30th (INDECOPI/Peru)
  - Participants: 10
- **Triangular project in Force:**
  - Participants: PTB, Chile and Andimet plus. Training activities for to Andimet plus countries has been performed in the frame of this project.

FUTURE ACTIVITIES

- Objective: Improve participation of all SIM NMIs in MRA activities. For this it is necessary to :
  - Make a data base where all SIM NMIs capabilities and needs can be found.
  - Identify NMIs with similar needs and evaluate possible cooperation to organize training activities of different kinds.

3.-HOW CAN WE EVALUATE TRAINING PROCESS?

- PARTICIPATION IN PILOT STUDIES:
  - This is a good way to evaluate training and to detect non conformities in calibration of different kinds and correct them.
  - It is important to make a meeting for result evaluation so possible causes can be assigned to the problems detected with everyone's suggestions. **This is a way to learn with our and other's mistakes.**

3.-HOW CAN WE EVALUATE TRAINING PROCESS?

- Evaluating the performance of SIM NMIs in Key and Supplementary comparisons
- Evaluating the increase in the number of CMCs submitted by SIM NMIs.

CMCs REVIEW – TRAINING PROCESS

On the other hand the process of intraregional and interregional **evaluation of CMCs** can be taken as a **learning process**. If we **improve participation** of NMIs in reviews taken, everybody can learn from observations or comments made by the experts in the specific quantity even though only MRA signatories are allowed to vote.

Thank you for your attention!!!!