Sistema Interamericano de Metrología

Inter-American Metrology System

Inter RMO Workshop
Mongolia - June, 29th 2011

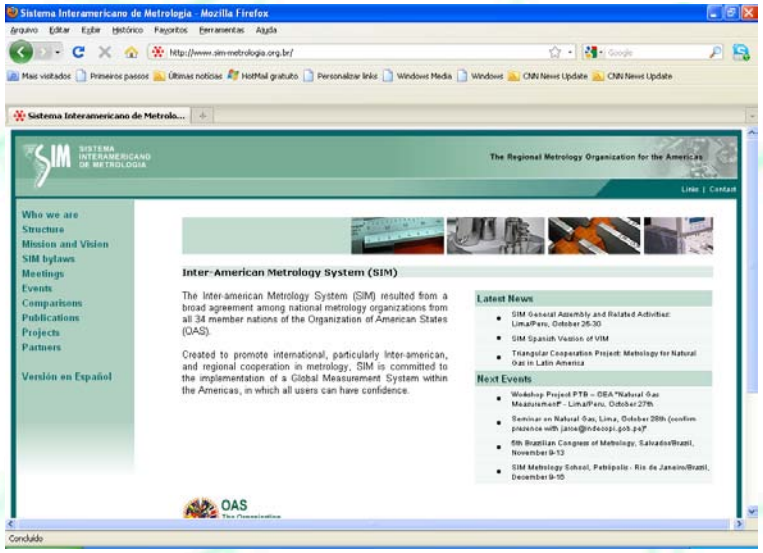
History:

•In 1979, as part of the special project on metrology the Inter-American Metrology System (SIM) was created, consisting of thirteen Latin American countries. Many institutions, such as Instituto di Metrologia "Gustavo Colonnetti" (IMGC, Italy), Instituto Elettrotecnico Nazionale Galileo Ferraris (IEN Italy), NBS, Physikalish-Technische Bundesanstalt (PTB, Germany) were of great help in the creation of SIM.

•OAS convened a coordinating meeting in Rio de Janeiro, in January, 1995, attended by 25 countries, which agreed to promote a project to reorganize and revitalize SIM.

Metrology in America

34 Countries
3 Associated Members
27 Designated Institutes



Metrology in America

Economy	Status on CIPM MRA *	Institutes	Designated Institutes *
Argentina	Member State	INTI	1
Bahamas	-	Min. of Lands & Local Govt.	-
Bolivia	Associated of the CGPM	IBMETRO	-
Brazil	Member State	INMETRO	2
Canada	Member State	NRC- CNRC	1
CARICOM	Associated of the CGPM	Caribbean Community	11
Chile	Member State	INN	8
Colombia	-	SIC	
Costa Rica	Associated of the CGPM	LACOMET	1
Dominican Rep.	-	DIGENOR	-
Ecuador	Associated of the CGPM	INEN	-
El Salvador	-	CONACYT	-
Guatemala	-	LNM	-
Haiti	-	Min. of Comm. & Industry	-
Honduras	-	COHCIT	-
Jamaica	Associated of the CGPM	BSJ	-
Mexico	Member State	CENAM	1
Nicaragua	-	LANAMET	-
Panama	Associated of the CGPM	CENAMEP AIP	-
Paraguay	Associated of the CGPM	INTN	-
Peru	Associated of the CGPM	INDECOPI	-
United States	Member State	NIST	1
Uruguay	Member State	LATU	1
Venezuela	Member State	SENCAMER	-

CARICOM (DIs)

Antigua and Barbuda (ABBS)
Barbados (BNSI)
Belize (BBS)
Dominica (DBOS)
Grenada (GDBS)
Guyana (GNBS)
St. Kitts and Nevis (StKNBS)
St. Lucia (SLBS)
St. Vincent & Grenadines (SVGBS)
Suriname (SDTI)
Trinidad & Tobago (TTBS)

Associated Members

Phys.-Tech. Bundesanstalt (PTB)
NCSL International
Kenya Bureau of Standards (KEBS)

* Source: BIPM, Nov/14/09

SIM Mission, Vision and Objectives

Vision

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

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.

Objectives

Cooperate in the development of National Metrology Institute in each country in the hemisphere;

Contribute to the development of measurement infrastructure required to promote equity in trade;

Foster competitiveness and quality of the manufacturing sector in order to promote trade and commerce;

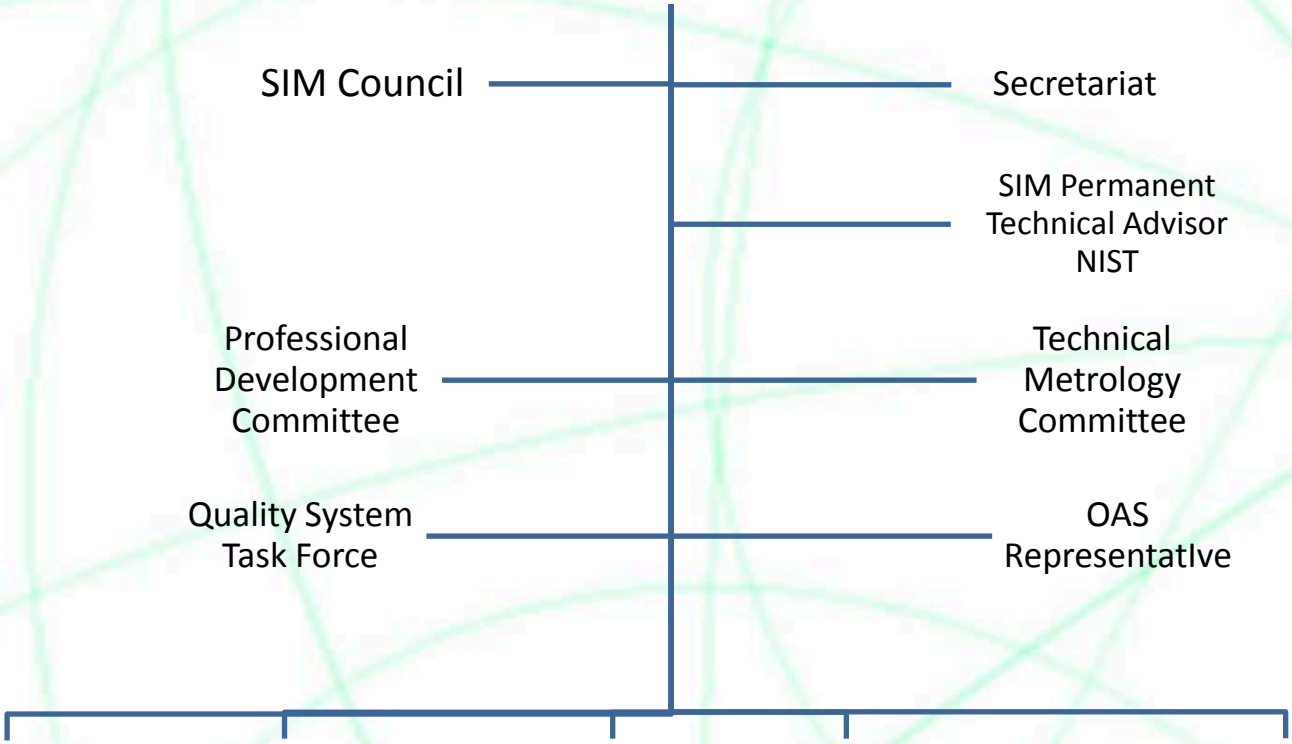
Identify sectors and institutions that can conduct specific multinational activities in support of metrology;

Contribute to the development of metrological infrastructure required to protect the environment and to promote the general well-being of the population, including its health and safety.

Source: SIM Statute

SIM Structures

SIM PRESIDENCY



NORAMET

- Canada
- United States
- Mexico

CAMET

- Guatemala
- Honduras
- El Salvador
- Nicaragua
- Panama
- Costa Rica
- Belice

ANDIMET

- Venezuela
- Colombia
- Peru
- Bolivia
- Ecuador

SURAMET

- Argentina
- Brazil
- Paraguay
- Uruguay
- Chile

CARIMET

- Dominic Republic
- Granada
- Jamaica
- St. Vincent & Grand
- Antigua & Barbuda
- St. Lucia
- Kitts & Nevins
- Barbados
- Dominica
- Guyana
- Suriname
- Trinidad & Tobago
- Haiti
- The Bahamas

Source: SIM Statute

SIM Technical Committee

MWGs are organized as follows (corresponding to the CIPM Consultative Committee structure, except Units):

MWG 1- Electricity and Magnetism
MWG 2- Photometry and Radiometry
MWG 3 -Thermometry
MWG 4 – Length
MWG 5 – Time and Frequency
MWG 6 – Ionizing Radiation
MWG 7 – Mass and Related Quantyties
MWG 8 - Chemistry
MWG 9 – Acoustics, Ultrasaound and Vibrations
MWG 10 – Flow and Volumen
MWF 11 – Legal metrology

The Technical Committee shall be composed of the Chair of the Technical Committee; the Chairpersons of the Technical Working Groups; plus one member from each of the SIM sub-regions

SIM Meetings

Every year each Sub Region of SIM holds a meeting with the NMI Directors for planning in all topics.

An NMI Director of a different Sub Region is normally invited as observer for exchanging of experiences.

Each working group holds a meeting for planning and follow up, training, intercomparisons, etc.

Eventually there are Schools of Metrology for Sub Regions.
The first was done in Brasil, 2009, in general topics.

The next one is being planned for 2012 in USA, supported by NIST.

SIM Budget

SIM Budget comes mainly from three sources:

- OAS Projects — Around $ 250 k USD / year
- NMI's Resources — Mainly in kind, time, etc. No Fees.
- PTB Technical Cooperation — On demand and availability

With this budget, the main activities supported are:

- TC Meetings
- General Assembly
- Inter comparisons
- Internships
- Info SIM (Magazine)
- Chemical metrology program (with support from Germany)

SIM Professional Development Committee

Also integrating a permanent body of SIM Council, the main responsibilities of SIM Professional Development Committee are to promote activities for the improvement of technical skills among laboratory personnel within the region and to perform other activities related to professional development, as recommended by the Council

The Professional Development Committee (PDC) is composed of the Chair of the Professional Development Committee; and
one member from each of the SIM sub-regions.

PDC conducts periodic surveys for identification of training needs in the Region.

Summary of the QSTF Review Process

- Quality Management System Structure
- Quality Manual/CMCs
- Quality Management System Implementation
- Assessments
- Links to additional documents such as action plans and reports.

Documents remain available on QSTF Website for all voting members.

NMI or DI oral presentation.

Q&A

Decision based on motions

QSTF decisions, questions and answers are published in minutes.

In case of **conditional approval**, additional information is requested and it can be sent by email. The approval can be done by email voting.

In case of **not approval** the NMI/DI can appeal in two instances (QSTF-Chair and JCRB Representative)

Invitation for QSTF Meeting

NMIs and DIs submit QS description


QSTF Template

Approved

Conditionally Approved

Not Approved

8 weeks prior to the meeting

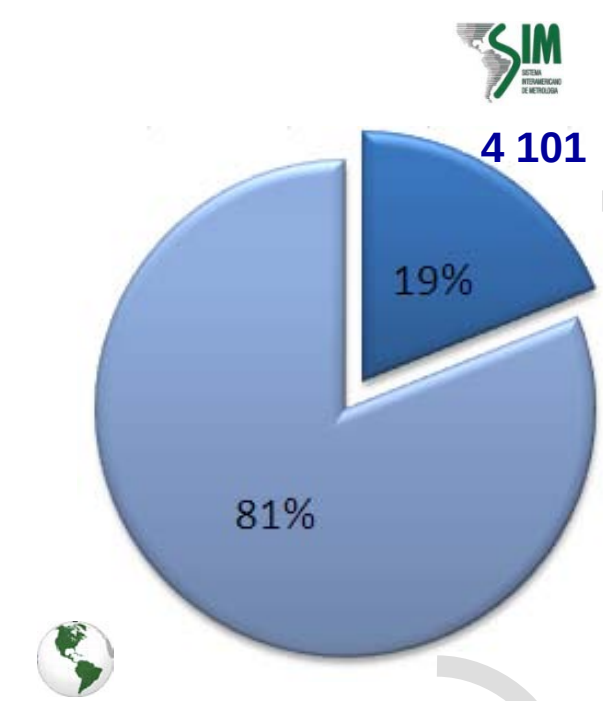
4 weeks prior to the meeting

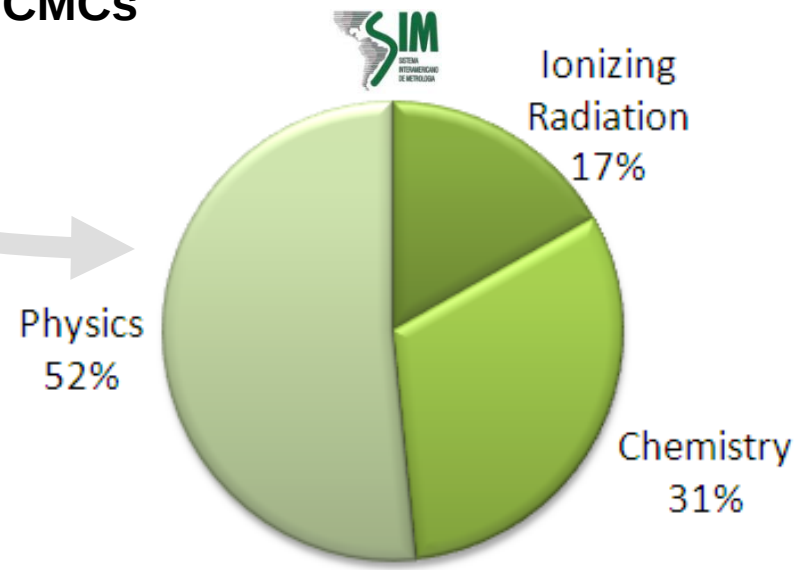
Analysis of the documents is done within this period

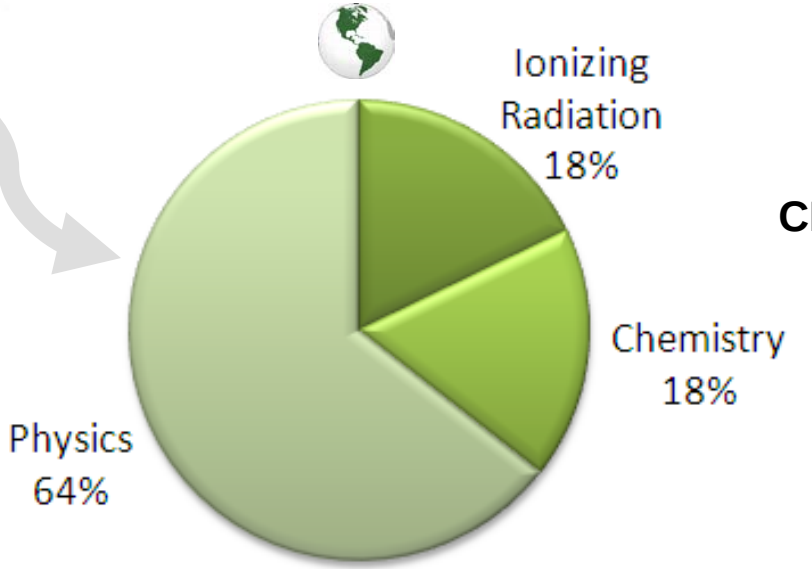
QSTF meeting

KCDB Statistics

Number of CMCs







CMCs Distribution by Metrology Area

Grand Total: 21,654

Source: BIPM - KCDB; Status: 25 November 2009

International Recognition

- To date the QSTF has approved Quality Systems from Argentina, Brazil, Canada, Chile, Costa Rica, Jamaica, Mexico, Panama, Peru, United States, Paraguay, Ecuador and Uruguay NMIs and Designated Laboratories

- Nearly 110 Quality Systems approved *
- SIM has an excellent process to support the CIPM-MRA, which is now accepted throughout the world of metrology and is serving our region well;
- SIM Contributes to the growth of the NMI of the region through educational and training activities.

* Source: QSTF Minutes

SIM Metrology School 2009

- SIM *Summer School in Metrology*
- Organized at INMETRO
- Support from ABC, Brazil
- Scholarships from NIST

- 60 students
- Lectures and Labs
- Spanish and English

- *December 9 – 16 2009*

* Source: QSTF Minutes

SIM Activities to Strengthen NMIs

1. Human Resources (PDC)

- Training programs inter-SIM in Mass, Volume, EM, etc.
- Internships, measurement methods, etc.
- Competence certification (?)

2. Standards and Traceability

- Traceability chains inter SIM (NIST, CENAM, INMETRO).
- Calibration rounds in sub regions (CARIMET, CAMET)
- Comparisons inter SIM (Supplementary Comparisons)

3. Systems

- Proficiency testing.
- Trilateral projects in specific fields (e.g. Flow, Time…)

Other SIM Activities to Strengthen NMIs And their relations with their Stakeholders

Some of the main problems of NMIs in Developing Economies, have to do with their national environment:

- ✘ Lack of understanding of politicians and low resources.
- ✘ Weak connection with industry and other stakeholders.
- ✘ Imperfect knowledge about the real needs of their users.

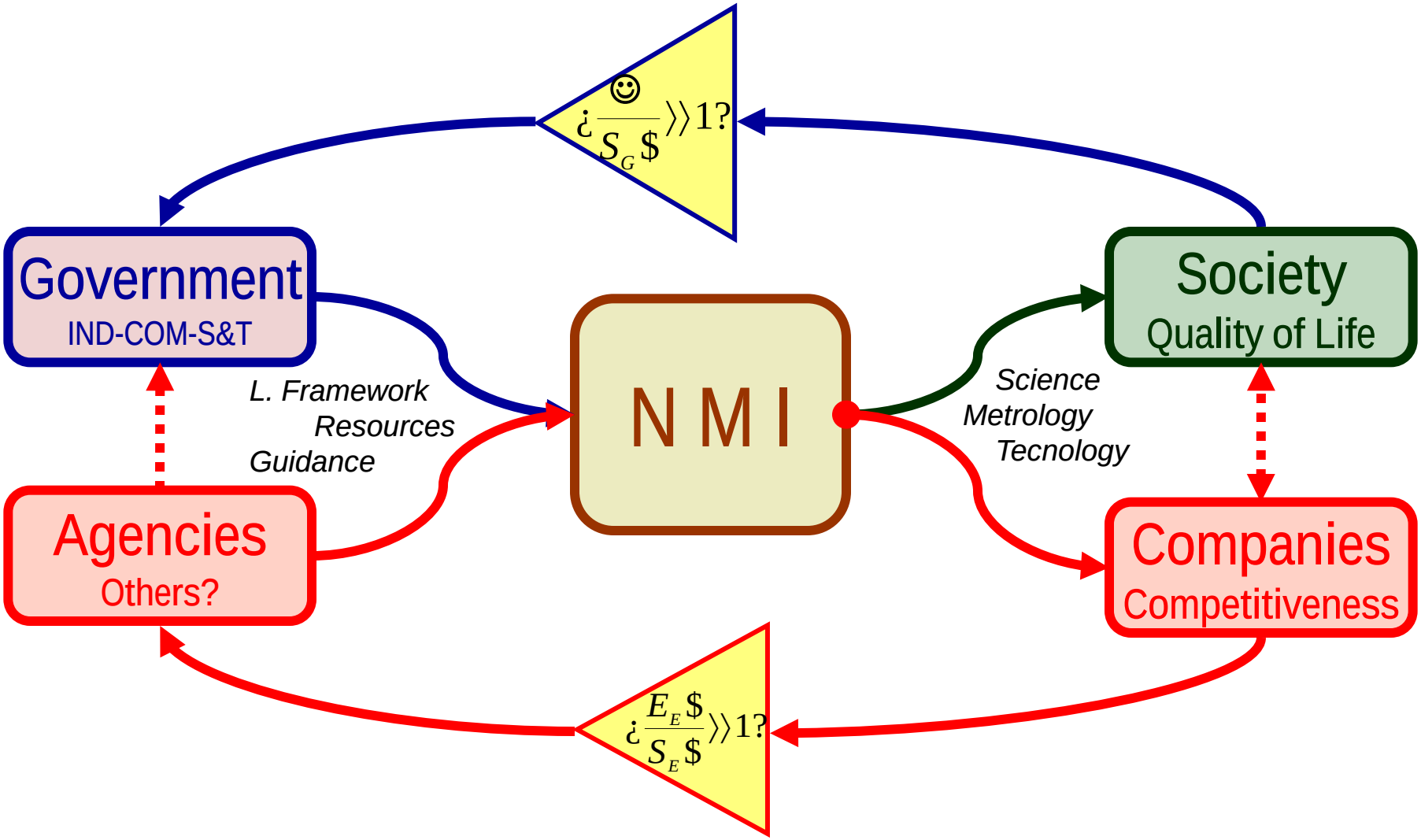
This produces a paradoxical situation:

- ~ Great potential for NMI action on quality of life, economy and others, but limited real impact due to poor resources and weak integration.

Proposal:

- ✓ To strengthen the connection and living flow among NMIs and their users, society and industry, and increase the mutual development.

NMI Challenge: Sustainability Model



Coevolution of NMI with Stakeholders (SEV, 2006)

SIM SISTEMA INTERAMERICANO DE METROLOGIA
2 al 5 DE MARZO DE 2009
Taller INM Industria

30 Workshop Attendees – 21 NMIs

Results of the SIM-PTB Workshop NMI – Metrology User Relations

CENAM, México
March 2nd-5th, 2009.

PTB 15 aniversario CENAM CENTRO NACIONAL DE METROLOGIA INMETRO






General Participation (21 NMIs)

Results after first stage of 2 years

Services discussed and implemented

1. **Calibration rounds**
2. **Training programs**
3. **Comparisons**
4. **Metrological evaluation**
5. **Awareness raising**
6. **Demand survey**
7. **Consultancy (MESURA Program)**

Calibration Rounds (4 NMIs)
GNBS - INDECOPI
Jermaine Softley

Training (7 NMIs)
LACOMET-LATU-INMETRO
Jéssica Chavarría

Consultancy (6 NMIs)
LATU-CENAM
Eduardo Quagliata

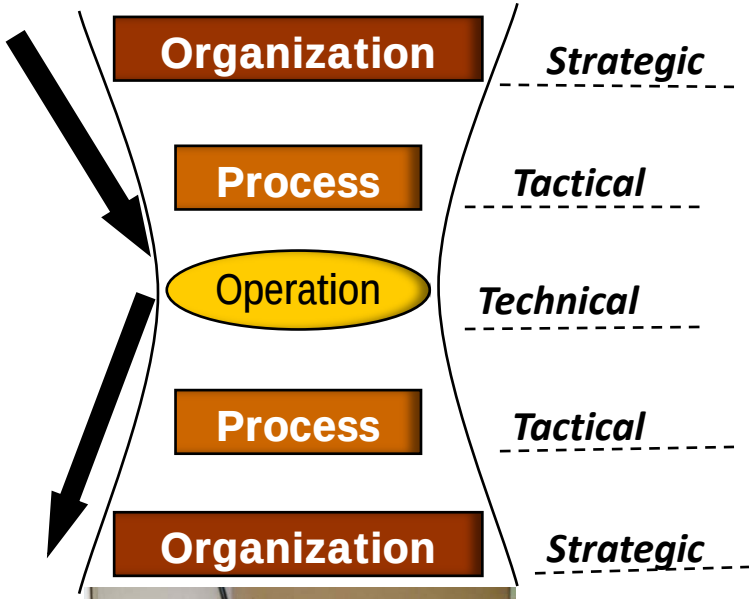


CENTRO NACIONAL DE METROLOGÍA
Programa MESURA

FREIXENET
Wine producer
Food sector

MESURA Program Practice

CIDEC-CARSO
Manufacturing R&D
Laboratory

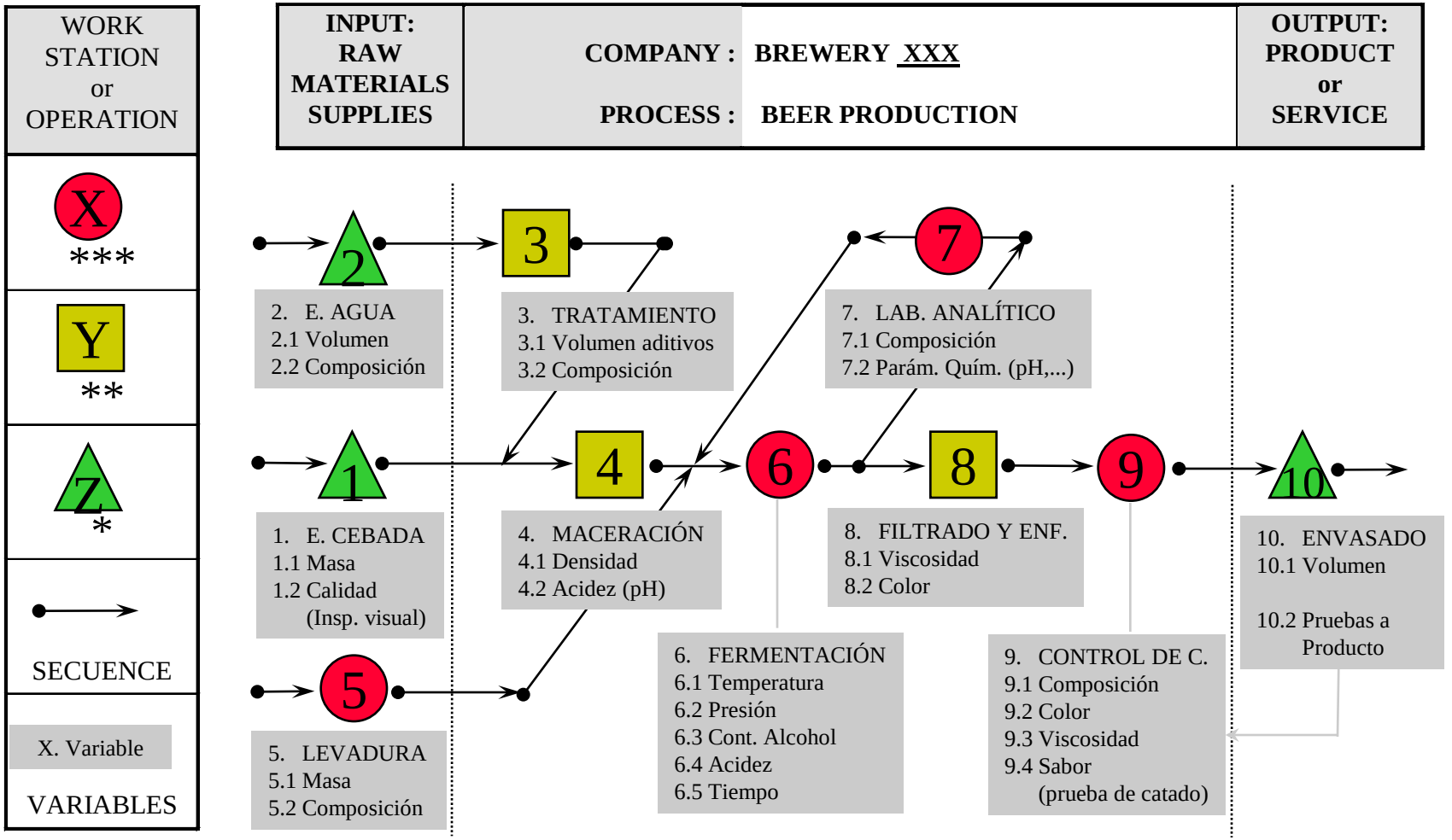


CESAVEG
Food testing
Laboratory

VOLVO
Automotive
OEM

MESURA®: Process Mapping and Critical Variables

WORK STATION or OPERATION	INPUT: RAW MATERIALS SUPPLIES	COMPANY : BREWERY XXX PROCESS : BEER PRODUCTION	OUTPUT: PRODUCT or SERVICE



SEV/16.07.97

Strategy to support National Metrology Institutes of Developing Countries via the MESURA Interinstitutional Network

Think globally

Jamaica

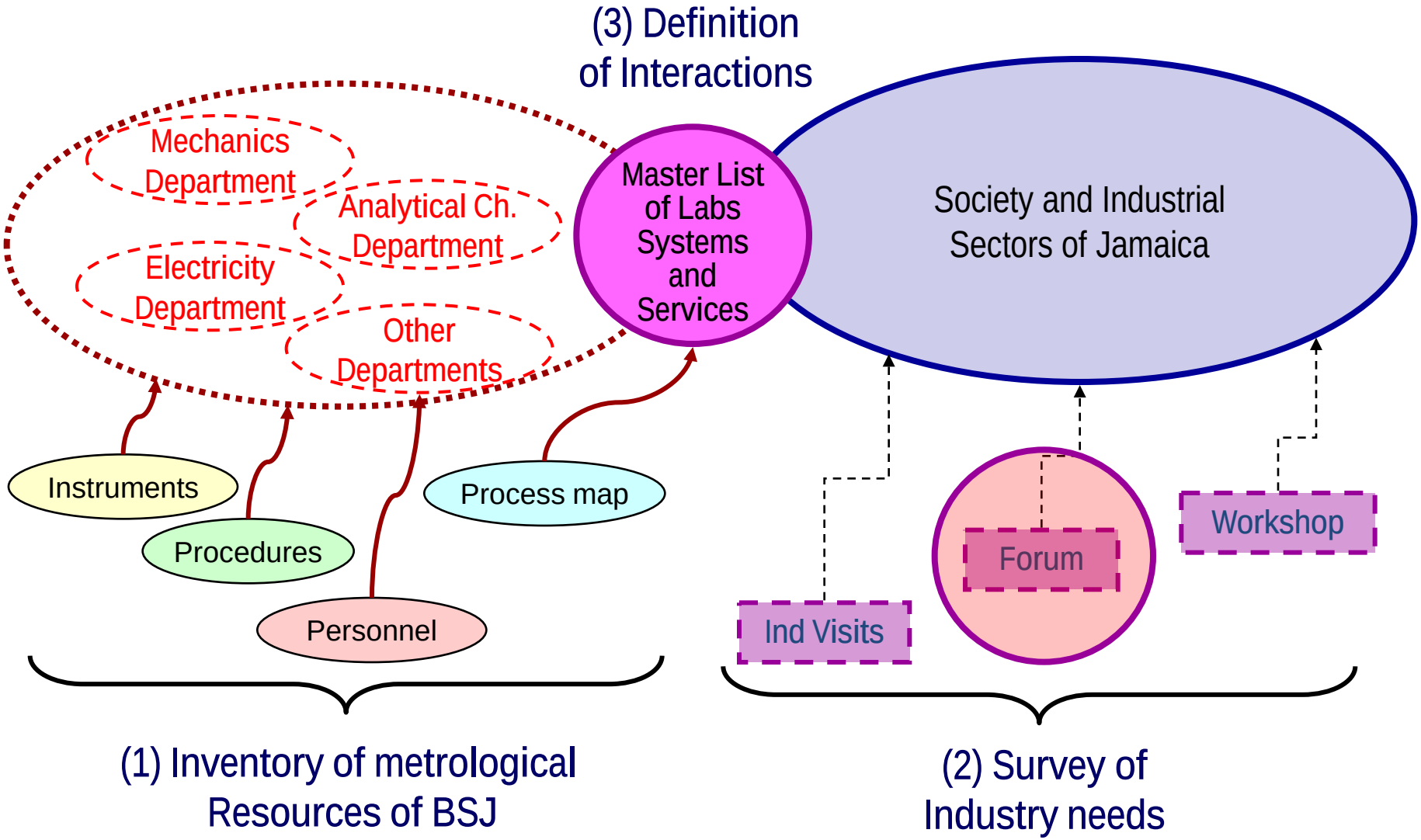
ACT LOCALLY

BSJ

MESURA Program by CENAM to BSJ

Redefinition and retooling of the of the laboratories and training of their personnell considering a general view of the situation and needs of the Jamaican industry and society

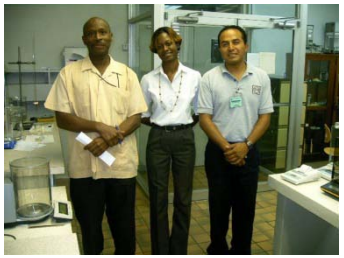
MESURA Approach



MESURA Process – Stage I
CENAM- BSJ

1. Survey at BSJ Labs







2. Visits to industry

3. Forum with industry managers





4. Workshop with plant engineers

Conclusions - Recommendations

- ✓ Coach NMIs of DE to get closer to their Users… down to the production lines or the crop fields; even a few examples make excellent impact case studies representative for whole sectors.
- ✓ Get some metrologists to visit-understand the real needs of their users, promote a deep integration and partnerships of NMIs with their users, reinforce those virtuous cycles.
- ✓ Help NMIs to offer their stakeholders integral metrological support, even if they don't have everything, network with other NMIs in the region.

Possibilities for implementation:

- ✓ Large NMIs providing consultancy missions to DE with their usually small NMIs, in mixed teams of metrology consultants.
- ✓ Establishing coordinating units in the NMIs to provide consultancy for integral service to their stakeholders.

Gracias!

Obrigado!

Thank You!

Merci!

Bayarlalaa!