QUALITY INFRASTRUCTURE FOR RENEWABLE ENERGY SOURCES & ENERGY EFFICIENCY IN LATIN AMERICA AND THE CARIBBEAN

Concept and Program Version 1.2, 2015-09-21

Workshop on „ Phasor Measurements Unit (PMUs) - Metrological Requirements “

26 to 27 November 2015. Dall Onder Grande Hotel. Bento Goncalvez, Rio Grande do Sul, Brazil.

Background

The Organization of American States OAS, the Sistema Interamericano de Metrología (SIM), the Comisión Panamericana de Normas Técnicas (COPANT), the InterAmerican Accreditation Co-operation (IAAC), and the Physikalisch-Technische Bundesanstalt (PTB), have agreed to cooperate in the regional project Quality Infrastructure for Energy Efficiency and Renewable Energy Sources in Latin American and the Carribbean. The objective is to strengthen the capabilities of the regional quality infrastructure organizations of SIM, COPANT and IAAC and of their national members in providing services for the fields of energy efficiency and renewable energy sources and to promote mutual coordination in order to support the implementation of the respective national energy policies.

The electric power transmission network is currently in a process of integration of information technology and communication to monitor more efficiently the state of the grid. With the challenge to increasingly integrate energy from renewable sources, the network monitoring has become essential to minimizing blackouts.

The Phasor Measurement Unit (PMU) Technology is the most advanced systems to monitor the power networks.

In the context of energy efficiency and integration of renewable energy sources, the metrological requirements of PMUs are an issue. Some national institutes of metrology in SIM have identified their interest in strengthening their technical competence in the measurements of the Dynamic State of Grids, realized with Phasor Measurements Units (PMUs).

Objective(s)

To provide an international experts based training on the main subject of measurements of the Dynamic State of Grids using PMUs.

Target Group

Metrologists in SIM institutes presenting progress made on the developing of Standard Power Harmonic Measuring System and activities or projects in the subject of PMUs.

Expected Impact

Energy sector, Transmission & Distribution agencies, Grids operators and users will benefit from support by SIM metrology institutes that have increased their competences in the Phasor Measurement

	Unit (PMU) Technology.
Contribution to project goal (indicators)	The activity will contribute to increase the number of energy-related services from NMIs in the SIM region with leading technical capabilities (indicator 2).
Methodology	• Input lectures, • plenary discussions,
Contents	1. Phasor Measurement Units (PMUs). - Operation - Metrological Requirements. Standards IEEE C37.118.1:2011 / IEEE C37.242:2013 2. ONS Phasor Measurements System 3. Use of PMUs in electrical grids 4. State of the art on advanced measurement methods for PMU traceability
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Invited Experts	Dr. Jean Pierre. METAS. Dr. Allan Goldstein. NIST Dr. José Eduardo Alves. Centro de Pesquisa de Energía Eléctrica CEPEL. Brasil. Ing. Alexandre Garcia Massaud. Gerente da Gerencia Proteção e Controle do ONS Ing. Marcos Rodríguez CENAM. Mexico
Implementing Partners	SIM, PTB International Technical Cooperation.

Responsibilities and inputs of the implementing partners and/or target group

Implementing partners	Responsibilities and inputs:
SIM/Working Group	• Conceptual input • Coordinate selection of participants • Organization of the event
National NMIs	• Active participation • Provision of necessary information
PTB International Technical Cooperation	• Conceptual input • Financial support for the program (support for travel costs for participants from developing countries (hotel and flight ticket, travel costs for the technical experts)

Program

Time	Activity
First Day: Nov. 26	
08:30	Registration
9:00 -11:00 am	PMUs Calibrators and their uncertainties. ***Dr. Allen Goldstein.*** **NIST**
11:00 -11:30 am	Coffee break
11:30 - am 13:00 pm	PMUs Calibrators and their uncertainties. ***Dr. Allen Goldstein.*** **NIST**
13:00 -14:00 pm	Lunch
14:00 -15:00 pm	ONS Phasor Measurements System. ***Ing. Alexandre Garcia Massaud.*** **ONS**
15:00 -15:30 pm	Coffee break
15:30 -16:30 pm	Use of PMUs in electrical grids. ***Dr. José Eduardo Alves.*** **CEPEL**
Second Day: Nov. 27	
9:00 -11:00 pm	Phasor Measurement Units. ***Dr. Jean Pierre.*** **METAS** - Operation - Metrological Requirements - Standards IEEE C37.118.1:2011 / IEEE C37.242:2013
11:00 -11:30 am	Coffee break

11:30 -13:00 am	Phasor Measurement Units. ***Dr. Jean Pierre.*** **METAS** - Operation - Metrological Requirements Standards IEEE C37.118.1:2011 / IEEE C37.242:2013
13:00 -14:00 pm	Lunch
14:00 -15:00 pm	State of the art on advanced measurement methods for PMU traceability. ***Ing. Marco Rodriguez***. **CENAM**
14:00 -17:00 pm	Evaluation and conclusions