विद्युत मंत्रालय
MINISTRY OF POWER
सत्यमेव जयते

इलेक्ट्रॉनिकी एवं
सूचना प्रौद्योगिकी मंत्रालय
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
सत्यमेव जयते

One day work shop on **24th February 2023 on**

"Development of DLMS/COSEM Testing Tool for Smart Energy Meter"

A first step towards Atmanirbhar Bharat Initiative of GoI for metering protocol testing of Smart Meters in India

under **Smart Meter Integrated Testing and Higher Analysis - (SMITHA) for Bharat Smart Meter Protocol Analysis**

An Atmanirbhar Next-Gen Meter Testing Tool

Organized By

Central Power Research Institute (CPRI)
Bengaluru - 560 080

&

Centre for Development of Advanced Computing (C-DAC)
Thiruvananthapuram - 695 033

CPRI & CDAC

CPRI and C-DAC (T) are jointly carrying out the sponsored project titled 'Development of DLMS / COSEM (Device Language Message Specification/Companion Specification for Energy Metering) testing tool for Smart Energy Meter' of MeitY with an objective of development of automatic testing platform for DLMS/COSEM Smart Energy Meters of different variants like Optical port, NAN & WAN communication modules as per National & International standard requirements for Indian needs. The project has been approved by the Working Group on Industrial Applications, constituted by the Ministry of Electronics and Information Technology (MeitY) for funding along with contribution of funds from CPRI, Ministry of Power (MoP), GoI.

About the Project:

The project aims at development of an automatic test tool software application of DLMS/COSEM for metering protocol testing of Smart Energy Meters of different variants like NAN & WAN communication modules as per the requirements of BIS standard IS 15959 series as part of IS 16444. The DLMS/COSEM open protocol standard is accepted for communication between various devices involving Smart Meters, Data Concentrator Units (DCU), Meter Data Management Systems (MDMS) and Smart Home Appliances, etc, especially in the case of Advanced Metering Infrastructure (AMI). Communication profiles supported by this software for smart meters are HDLC and TCP/IP.

Developed Test Tool Specifications:
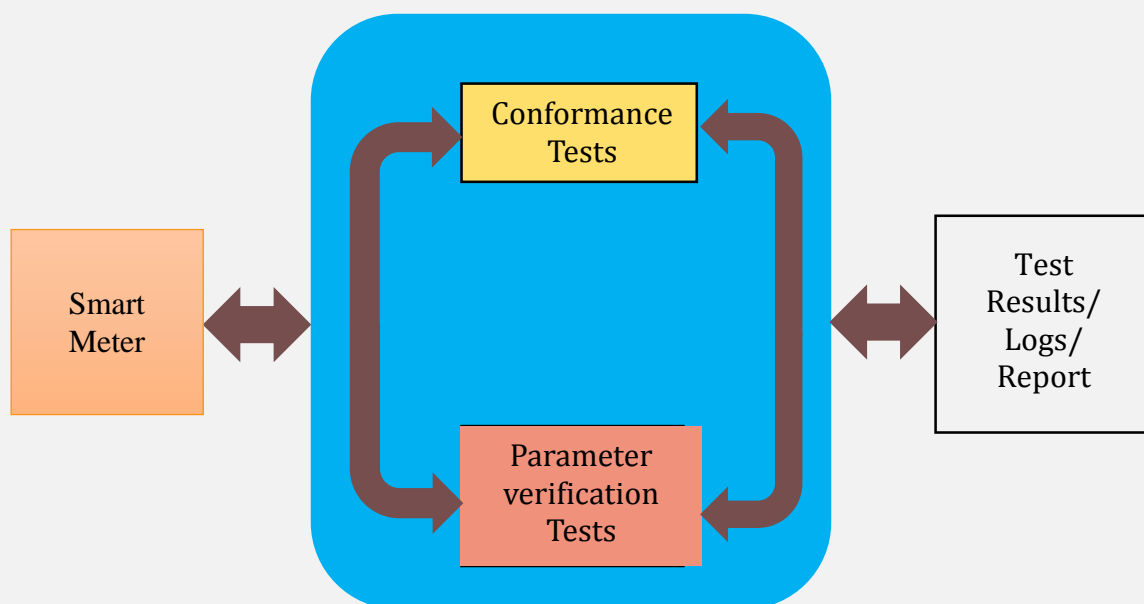
Pic: DLMS/COSEM Test Tool

- The test tool can be divided into two modules i.e. (i) Conformance Testing Module (CTM) and (ii) Parameter Verification Testing module (PVTM).
- **Conformance testing module** will perform tests with the objective to verify whether the smart meters conform to the DLMS/ COSEM open protocol, based on the International Standard IEC 62056.

- It includes testing of the Data Link Layer using HDLC protocol, TCP/IP protocol, DLMS/COSEM Application layer, COSEM interface objects and Security suite 0 based tests.
- **Parameter Verification testing module** will perform tests based on the National Standards IS 15959 series as part of IS 16444.
- It includes testing of the COSEM Objects of various associations of Smart Energy Meter
- It retrieves real time profile data via HDLC communication profile & TCP/IP communication profile from Smart Meters / Energy devices and the data will be used for analysis.
- The different types of data retrieved from meter are Instantaneous parameters, Block load parameters, Daily load parameters, Billing, Events etc.

Testing & Certification procedure with the Developed test tool software application will ensure quality, safety and interoperability of the tested device.

Developed Test Tool Features:

Currently Working features via HDLC communication profile:

- HDLC protocol based Data link layer testing

- DLMS/COSEM Application layer testing

- Downloading of COSEM interface objects as per IS 15959 series

- Downloading of 1 byte & 4 byte object list of COSEM objects

- Downloading of Profile Parameters and Name plate details from Meters

- Downloading of Event Profile Parameters from Meters
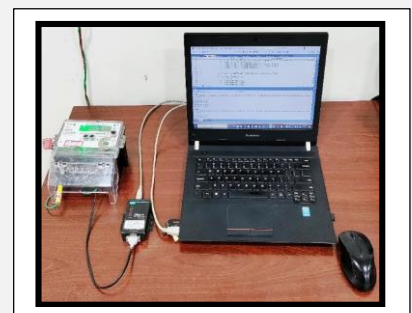
Features in progress:

- Support for TCP / IP communication profile

- Security features with HLS mechanism id_2 and id_5 as per IEC 62056

- Remote connect/disconnect of meters

- Firmware Upgrade

- Load limit functionalities

Utilities can use this developed test tool for Demand side/ load side / energy management purposes, AMI etc., which can be upgraded easily for their specific needs of MDAS & MDMS of HES

Who should attend?

The workshop will be of interest to Meter manufacturers, Power utilities, Service providers, System integrators, Technology & Solution providers, Electricity boards, Engineers, Consultants, Researchers, Academia, etc.

Registration Fees & Discount

The registration fees per delegate as below (INR):

- Rs.5,000/- + 18% taxes for Industries / Manufacturers / Private Organization
- Rs.3,500/- + 18% taxes for Electricity boards / utilities / Faculty members (after 30% discount)
- Rs.2,500/- + 18% taxes for students/ research scholars (after 50% discount)

Group Discount:

To encourage more number of participants group discount is offered for private organisations and registration fee per participant is as below:

- Rs.4,500/- + 18% taxes for minimum three participants
- Rs.4,000/- + 18% taxes for minimum four or more participants

The registration fee includes kit, course material, tea/coffee with snacks and lunch for one day.

Event Sponsorship Opportunities:

We request you to support the event by sponsoring. The workshop may be sponsored by all industries, meter manufacturers & any other interested organizations. The name and logo of the sponsoring organization will be displayed in the venue of the workshop.

Category	Amount (Inclusive of taxes @18%)	Benefits / No. of delegates without registration fee
Gold	50,000/-	3 (Three)
Silver	30,000/-	2 (Two)

Travel & Accommodation: Participants have to make their own arrangements for travel & accommodation.

Payment of registration fee: To be paid via Online mode through CPRI website only with below options: Link: https://cpri.res.in/online-testing/pay_online

1) Net Banking
2) UPI Payments
3) NEFT
4) SBI branch payments through challan created from payment portal.
5) Credit card payments

Note: The transaction details are to be shared separately to shankard@cpri.in / maheshv@cpri.in

Workshop Venue & Date
Central Power Research Institute (CPRI)
Prof. Sir. C. V. Raman Road, Bangalore - 560 080, India
Date: On 24th February 2023

Advisory Team

Dr. Kaliappan Perumal., PhD (NIT, Tiruchirappalli), Joint Director & HoD (MUAD), CPRI

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