PRYSM ADVANCED METERING INFRASTRUCTURE

Intelligent Digital Solutions for a Smarter India

VELANKANI SMART GRID PRODUCTS

DRIVING INNOVATIVE ENERGY EFFICIENT SOLUTIONS

Smart metering essentially involves an electronic power meter supplemented by full remote control, diagnostics, power peak and consumption analysis, anti-tampering mechanisms, fault alert, time-variable tariffs, and many more possibilities. Using power-line communication (PLC) or/and other wireless technologies to connect the meter to the service provider enables all of the above features to be feasible and compatible with future smart-grid protocols.

A smart grid is widely accepted as being a digital, self-healing energy system that delivers electricity or gas from the energy source, including renewable energies, to the points of consumption. It optimizes power delivery and facilitates two-way communication across the grid, enabling end-user energy management, minimizing power disruptions and transporting only the required amount of power. The result is lower cost to the utility and the consumer, more reliable power and reduced carbon emissions. Velankani's solutions are enhancing the existing power grids by adding intelligence and digital communications.

KEY BENEFITS

Increases reliability

Improves responsiveness

Increases efficiency

Handles present and future demand

Potentially reduces costs for the provider and consumer

Provides the communication platform for new applications

ADVANCED METERING SYSTEMS

Velankani has been actively involved in smart-grid technologies, products and applications from the earliest days, and offers a large product portfolio for smart grid needs. The Advanced Metering Systems developed by Velankani provide unsurpassed two-way, secured internet-based access to real-time usage information between data networks and control systems.

Velankani's state-of-the-art products provide AMI (Advanced Metering Infrastructure) functionality with Smart Meters incorporating the ability to connect the Energy Utilities and Consumers at any given time, providing real-time metering and analytical data with minimum delays and losses; and yet the same such planned AMI network should be scalable to support future applications and requirements.

Our system provides utility companies with open doors to many future business opportunities and applications they currently do not have access to.

SMART METERS

Power line communication, using the electricity infrastructure for data transmission, is experiencing a renaissance in the context of Smart Grid. Smart Grid objectives include the integration of intermittent renewable energy sources into the electricity supply chain, securing reliable electricity delivery, and using the existing electrical infrastructure more efficiently.

PRYSM SINGLE PHASE SMART METERS

MODULARLY DESIGNED SMART METERS FOR SMART ENERGY DATA MANAGEMENT

- Plug-and-play with interchangeable module- PLC(G3)/GPRS/LPRF
- Compliant with DLMS/COSEM
- Modular WAN/LAN capacity and HAN equipment management
- Improved revenue and energy efficiency with advanced measurement with TOU
- Accurate clock and daylight saving time supported
- Disconnect/Reconnect
- Firmware Over The Air upgrade
- Protection from fraud or tampering- alarm and event recording
- High security & reliability
- Advanced design for operation cost reduction, user-friendly interface

REMOTE COMMUNICATION

PLC

LPRF

GSM/GPRS

ANTI-TAMPER FUNCTION DETECTS

- Reverse connection and measurement
- Meter cover open and Terminal cover open
- Magnetic Disturbance
- Current bypass
- Missing potential, auto disconnection once tamper noticed
- Neutral Missing

PRYSM THREE PHASE SMART METERS

FEATURES

- Active & Reactive energy measurement
- Maximum current of 100A
- Load control with internal relay
- Programmable load profiles
- Energy output pulse port
- Choice of post or pay-as-you-use payment scheme
- Secure data transfer with STS encryption technique and protocol
    - Low credit warning, indication flashing and buzzer
    - Last 50 tokens stored and can be recalled
    - Local communication by optical port

REMOTE COMMUNICATION
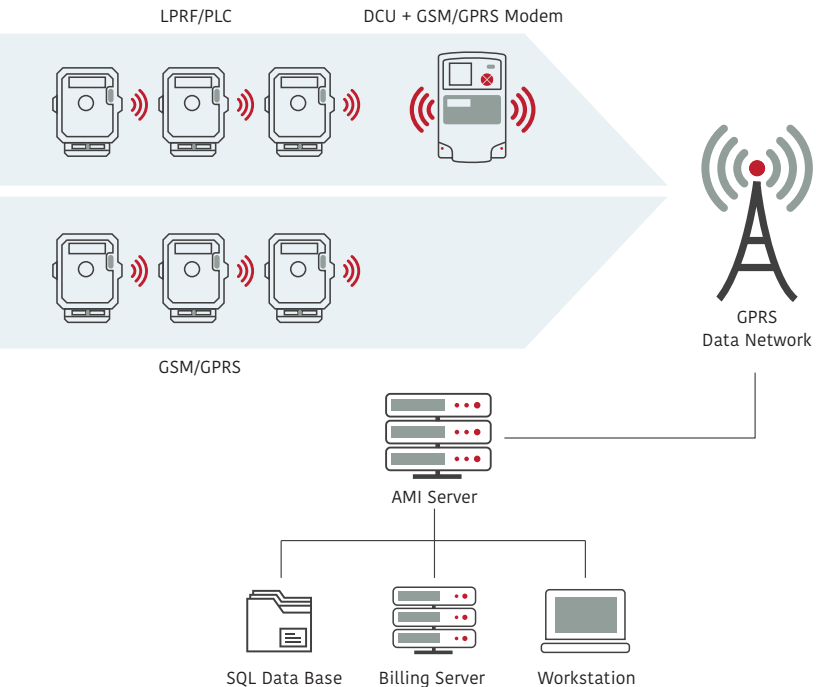

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DATA CONCENTRATOR UNITS (DCU)

DCU, gateway are devices acting as an interface between the utility-controlled smart grid and the Home Area Network. They manage the data exchange between smart meters, utility providers and energy-consuming in-house objects. While a data concentrator manages the information for several homes, a multi utility controller, also known as an energy gateway, manages the data exchange for a single home.

VELANKANI METER DATA ACQUISITION SYSTEM (MDAS)

REAL-TIME DATA ACQUISITION AND MONITORING

SALIENT FEATURES

- Fully automated billing system - No Human Intervention

- Dashboard featured with:

    - Meter Data Report- Instantaneous Parameters data, Billing data, Load Survey data, Tamper data, Outage data, Meter data aggregation, Manual upload of meter data & much more

    - Configuration- Meter Postpaid/Prepaid configuration, Modem configuration, Tariff configuration etc.

    - Alarm & Alerts- Alarm Dashboard, Tamper alerts, Outage alerts etc.

- Easy integration to any make of Smart Meter & adoption for new protocols

- Supports Firmware Over The Air (FOTA) for up-gradation

- Supports Registration, Scheduling, Meter data reading at configurable interval (Push/Pull) features required for AMI functionality

- Secured mode of Data Transfer

- Faster & Reliable data reads from consumer premises

- Turns the services OFF or ON, and Identifies problems remotely

- Captures baseline data parameters viz.

    - Instantaneous Values, Average PF, Energy Values, abnormal events such as voltages/currents Outages & restorations, Modem communication failure, Energy consumption, MD value etc.

- Generation of Graphs pertaining to above baseline data

- Customized report generation on baseline data

- SMS alerts on abnormal events

- Easy integration of Third party modules such as Energy Audit, Asset Management etc.

VELANKANI'S G3 PLC GUI

It's a bi-directional communication software, enabling request-response data exchange between deployed AMI devices and central server.

- Retrieve instantaneous reads
- Remotely disconnect and reconnect individual and bulk meters
- Broad cast, multi cast and unicast messages
- Manage planned and unplanned outage management
- Audit all changes to data
- Supports extensive configuration management
- Billing engine & audit engine
- Engine is designed to calculate energy consumption cost for Individual meters
- It has been augmented with audit engine to constantly monitor energy Flow match with the revenue generated
- Audit engine can determine energy theft, leakage, maximum demand and establish purchase cost/unit v/s gain/unit

Accuracy   Flexible   Cost Effective   Data Secure

BILLING ENGINE DOES

- FLAT BILLING
- SLAB BILLING
- TIME-OF-USE BILLING
- CRITICAL PEAK PRICING BILLING
- TARIFF BILLING/SEASONAL BILLING ETC.

Velankani Electronics Pvt. Ltd.
43, Electronics City, Phase-1, Hosur Road,
Bangalore- 560100, India

Web: www.velankanigroup.com

Tel: +91 80 6614 5807

Email: insidesales@velankanigroup.com