Collection Core Module
Modam®
Meter Data Management Software

Overview

Collection Core is one of the Modam platform modules that is able to collect data from measuring equipment and provide innovative a comprehensive solution for energy suppliers, energy network operators, electricity, water and gas networks, meter companies, etc. This module benefits from powerful, fast, reliable and advanced collection core. This module has the ability to manage the collected data and provide various and practical reports. In case of collection fault due to reasons such as offline equipment, invalid data, out of range data and etc., these consumption data is estimated using standard and also special estimation rules, thus ensuring the accuracy of the data are guaranteed.

Advantages

○ Modular design principle and the Modam Modules ensure easy adaptation to new requirements and your own business goals

○ Fast and reliable collection of data from energy meters installed in the energy grid

○ Estimation and Validation of the collected data

○ Energy Grid Management

○ Comprehensive and Dynamic reports

○ Offline geographical customers map

○ SaaS, cloud concepts or non-site installations enable implementations seamless scaling from small pilots to large scale roll-outs

○ Intuitive user interface, reducing training and operating costs

Smart Energy Grid

Having a smart network that collects volumes of data from residential and commercial electricity, water, gas and heat meters and is able to configure them, utilizing a robust communication core, data and customer management, and billing solution is essential for the utility sector. Providing secure, accurate and reliable data, Modam delivers operational efficiency that defines new frontiers to the business value.

Systems that operate with multiple isolated systems and databases, are prone to great bottlenecks, data losses and IT problems which lead to unoptimized resources, increasing staff and management costs thus reducing the efficiency of the whole system. Making the whole system as one integrated smart, fast, reliable and optimized smart network reduces the costs of field service, transferring data, providing real-time data needed for managing and growing the grid infrastructure to whole utility sector and customers.
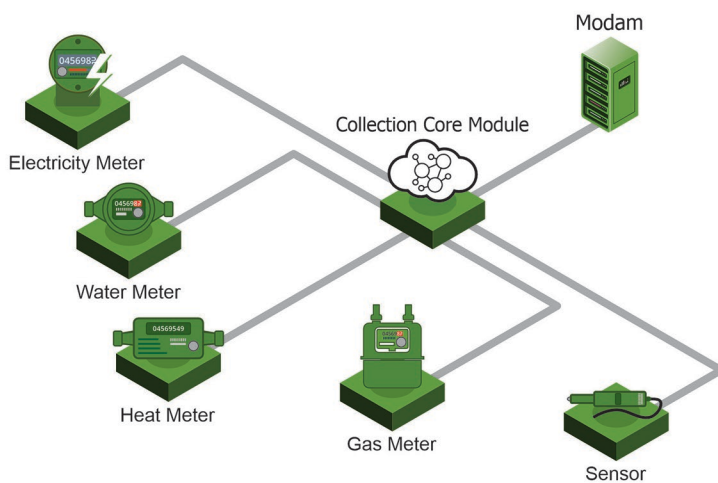
Improving grid reliability, operations and customer satisfaction means collecting, validating, analyzing and acting on quality smart device data securely maintained in your data management system. To make these business activities function seamlessly, utilities rely on a data management system. Data management systems provide an ideal remedy that creates a system of record where consistent, secure and auditable processes are enforced, and where all users and external systems can access accurate and reliable data from smart meters.

Reliable Collection

The most important part of an MDM system is the data and more important the reliability of it. Reliability means data being accurately read from meters in predefined schedules without any system faults using powerful engine, resulting in regular, valid flow of data used to monitor, manage and develop the electricity grid providing operational efficiency and revolutionizing business value.

Modular Design

Collection Core is a powerful engine based on advanced architecture that does the core scheduling, collection and estimation of consumption data from metering equipment (e.g., energy meters) and has the capability to configure meters.

This module has the ability to manage energy grid, the collected data and provide various and practical reports. Collection Core Module is also modularly designed and implemented, and consists of three sub-modules:

- Energy Grid Management
- Operation and Scheduling System
- Communication Drivers for collection and configuration of metering equipment

In the Energy Grid Management Module, utility managers can define, monitor and moderate grid production and consumption. Modam provides of all grid physical and virtual equipment, grid elements and reference meters with all related attributes from communication details to business characteristics for each node in the grid management sub-module. Modam is capable of managing virtual equipment, sensors, meters and DMAs, enabling utility managers to manage production, consumption and waste or leakage efficiently. This Module enables calculation of waste and leakage between reference and sub-meters in the energy grid.

With Scheduling and Operation System Module, all system operations can be set and scheduled e.g., equipment data collection and configuration, estimation, VEE, virtual meter calculations and etc.

Collection and configurations for each metering equipment is handled using communication drivers which can be deployed separately providing customers with choice to have only means to communicate with their installed or intended metering equipment model and also dynamically define which of the parameters they want to collect or configure. This will result in much lesser and efficient purchase and also if more meter model collection or configuration feature is requested by customer, then only the new driver will be added to the system without disrupting any other driver functionality.

There are cases in which customers collect meter data using another HES software or data is collected using hand-held devices. In these situations, customers will only get this module without communications driver sub-module, enabling them to collect data from external APIs into Modam MDM system.
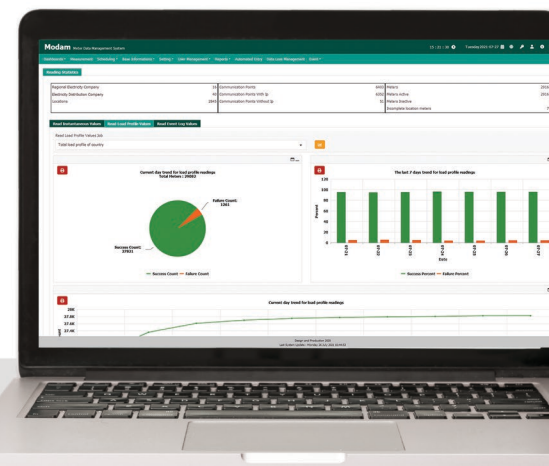
VEE Analytics

In monitoring and reading meter data, there are times that faults in the grid network or meter itself can cause missing data or wrong data. In these cases, Modam has validation and estimation scenarios that are implemented in the engine and are customizable in many options by the customers, that depending on the configuration, it intelligently recognizes the false or missing value, calculates and replaces the data.

Validation rules help recognize the meter faults resulting into invalid data such as value in the future, data being lower or greater than average, data being lower or greater than a defined value per meter, negative consumption, value in the future and etc.

Estimation rules help fill missing or invalid data according to the configured values. Missing data can be caused by power outages and meter malfunction. Invalid data on the other hand, can be caused by many situations including meter malfunction in tariffs, load profiles, date and time errors that can cause value in the past or future by the configured interval, faults in defined ratios and etc.

VEE also can help identify faults in the network and meters, resulting in great missing values reduction and providing reliable data to the customers.

Non-site installations (SaaS)

Having a comprehensive software also generates the need for a set of servers to be installed and maintained on. There are customers with certain degree of security guidelines which are obligated to purchase and maintain a local datacenter and install the MDM software on that configuration. On the other hand, there customers which do not wish to purchase and setup such costly datacenters. There are many reasons that convinces customers not to setup a datacenter locally, such as setup and maintenance costs, limited number of metering points, no hardware upgrade needed when number of metering points grow, workplace availability over the internet making it possible to work from anywhere, not needing to upgrade to newer versions provided by developer, and etc.

Modam is designed to be installed both on-site and non-site, providing customers with variety of choices in utilizing it to their benefit, as it diverts the implementation costs towards business growth.

Intuitive user interface

The operation education costs are of highest resource wastes that many companies endure. Also operating with multiple isolated systems and databases increases the education costs of employees and more than that, the rate of human errors leading to not reliable data thus reducing the business value. This normally increase when migrating to a new system.

Having an intuitive user interface that is designed by years of experience in the field and study over user experiences, reduces the costs of education by a great measure. An intuitive user interface provides a user-friendly environment that user performs all business-related processes without need to be educated. The only education needed for the employees will be the business itself.

Meter Data Management Benefits

- O Reduced field service costs through remote connect and disconnect and on-demand read capabilities.
- O Effortless management of energy customers such as electricity, water and gas
- O Reducing the number of maintained systems between collection, billing, outage, engineering and work management systems by having a stand-alone comprehensive system.
- O Increased quality of data by operating a single, central system, instead of separate and inconsistent systems.
- O Reduced IT implementation and maintenance costs
- O Improved data reliability with automated, valid data reading straight from the meter
- O Reducing data losses through VEE implementations
- O Reducing manual intervention for residential customers, leaning focus on your most demanding customers
- O Improved security and accountability through consistent auditing and versioning of all data

Technical Specifications

- O System architecture: Layered with logical subsystems, and SOA based
- O Implementation platform: Web Base, Browser and device Independent
- O Database: RDBMS with SQL Server 2019
- O Communication with other related systems: SOAP with WCF
- O Framework: .Net Framework 4.5
- O Programming language: C#

Applications

Modam platform has the ability to communicate, collect, send and receive information of various types of equipment such as smart meters (electricity, water and gas), remote reading modems, sensors, measuring equipment, instrumentation, etc. It can be used in various businesses such as:

- Electricity generation and distribution companies
- Water production and distribution companies
- Gas production and distribution companies
- Petrochemicals
- Refineries
- Airports
- Industrial estates
- Business centers
- Passages
- Residential complexes
- etc.

German Metering GmbH
Reuterweg 65
60323 Frankfurt am Main
Germany
Telephone: +49 (0)69 / 77062206
Fax: +49 (0)69 / 77062226
E-Mail: info@german-metering.de