

Meter Data Management for the Smart Grid

Selecting a meter data management system (MDMS) is among the most important decisions a utility will make for its Smart Grid project. An MDMS serves as the connective tissue that binds all of your disparate data collection points, interfaces, and systems together in order to create usable and accurate data that can be used for revenue and system planning purposes.

The idea of a self-healing, resilient power grid has been the vision of the “Smart Grid” for many years, but in 2009 it hit a fevered pitch due to the signing of American Recovery and Reinvestment Act. The promise of federal grants to fund capital technology investments is drawing new market entrants and increasing the development of new technologies. The velocity of change is unprecedented, unavoidable and unstoppable. *Are you ready?*

As a result of the changing industry landscape, an even greater emphasis is now placed on an MDMS being based on Common Information Model (CIM)-standards as well as –

- A common integration point
- A common repository of validated data
- A translator of data into a common format
- A common source for proactively sending metering alarms to the business
- A common engine that will enable the Smart Grid 2.0

This is the Ecologic MDMS. And, more and more leading utilities are turning to the team at Ecologic Analytics for the solution.

To create a great product it takes a thorough, comprehensive, and an ongoing understanding of user needs and priorities. For nearly a decade, Ecologic Analytics has instilled a rigor of discovery and collaboration with customers and other industry leaders to develop, hone and innovate an MDMS to meet the challenges of today and the future.

Meter Data Collection

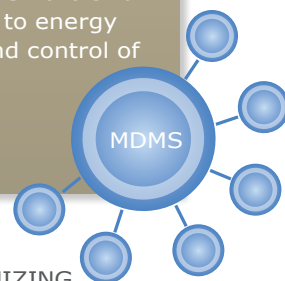
Though it runs contrary to intuition, collecting raw meter reads is not as simple as it was before automation. In any Smart Grid deployment, meter data is collected from an array of AMI system technology platforms. The Ecologic MDMS Gateways and Meter Read Manager (MRM) work together to collect the data from any source and transform it into a source-independent format for use across the utility.

Validating, Estimating and Editing

The Ecologic MDMS validates, edits, and estimates (VEE) register and interval reads using flexible and configurable rules engines. Three modules within the Ecologic MDMS contribute to accurate VEE processing of meter read data – WAVE™, iWAVE™ and Meter Reading Analytics (MRA). The modules have been designed to efficiently process very large volumes of meter read data and interval data of various increments for any utility no matter what the regulatory requirements may be.

Command and Control

Command and control should be the same as know and act now. With the Ecologic MDMS, it is. Using standards-based approaches within our Gateways such as Service Oriented Architecture (SOA) for interoperability and the International Electrotechnical Commission’s (IEC) 61968-9 for meter reading and control within our On-Demand Engine (ODE), the Ecologic MDMS provides utilities pursuing Smart Grid initiatives near-real-time access to energy usage information and on-demand control of end-devices.



Exception Management

When you are consuming meter data for millions of endpoints, exceptions to the rule are inherent to the process. Without the Network Performance Module (NPM) and the Service Order Engine (SOE), exceptions may go undetected for minutes, hours or worse – indefinitely. Tracking the regular performance of endpoints, alerting proper personnel to irregularities and managing service orders is just another core competency of the Ecologic MDMS.

Data Synchronization

The Ecologic MDMS examines the data within the Meter Data Repository (MDR), and crosschecks it to make sure it is accurate. This is accomplished automatically by the Data Synchronization Engine (DSE), as it matches core customer, account, and point-of-delivery data stored in the MDR with utility back office systems and with downstream AMI head end systems. In fact, the Ecologic MDMS synchronizes with multiple systems when the data resides in disparate systems at the utility.

Advanced Billing

The days of one-rate utility billing for mass market electric, natural gas, or water utilities are coming to an end. Within the Ecologic MDMS, the Virtual Metering Engine (VME) and Meter Read Manager (MRM) work together to handle time of use (TOU), critical peak pricing (CPP), peak day pricing (PDP), peak time rebates (PTR) and other advanced rates that are already being implemented in some areas of the country. These concepts have become the hot topic of billing conversation globally. Of course, central to being able to support this billing function is a robust meter reading platform and MDR, such as the ones offered within the Ecologic MDMS.

Enhanced Outage Management

Enhanced Outage Management (EOM) by Ecologic Analytics leverages AMR/AMI assets to detect outage and restoration events in near real time. With EOM, proactive notification and smart scoping means the capabilities of the existing OMS infrastructure and outage business processes are maximized for quicker, more efficient response to customer inquiries, faster issue resolution, and better use of field resources.

MDMS Modules

Enhanced Outage Management Module
Outage tracking and scoping

Data Synchronization Engine
Syncs many meter attributes

WAVE
Register data validating, estimating and editing

iWAVE
Interval data validating, estimating, and editing

Network Performance Module
Identifies meter read anomalies and diagnostic events of interest

Meter Read Manager
Provides best billing determinants, readings or usage

Meter Reading Analytics
Creates customer profiles and calculates current average daily usage

Service Order Engine
Service order generation

On-Demand Engine
End-device command and control

Virtual Metering Engine
Process, aggregate and frame data into larger units

Meter Data Repository
Where the data lives

Gateways
Standards-based AMI system integration points to import data to the MDMS



With Ecologic Analytics your Smart Meter project goals will be met, if not exceeded, by each of the core functional areas of the Ecologic MDMS. This is MDMS done right! This is Ecologic Analytics.



Contact us to learn more about the Ecologic MDMS.

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