



iVision_{max} - MDASTM

An Intelligent Meter Data Acquisition System

Overview

Country or Region: India
Industry: Power

Customer Profile

Tata Power is one of India's largest integrated power company. The Company has an installed generation capacity of 8521 MW in India and a presence in all the segments of the power sector viz Generation (thermal, hydro, solar and wind), Transmission, Distribution and Trading. It has successful public-private partner ships in Generation, Transmission and Distribution in India. As a distribution company it provides power to Mumbai City and its suburbs, has installation base of around 3.5 lakh consumers, both residential and commercial.

The Challenge:

The ever-increasing number of electricity consumers, competition between various distribution companies in Mumbai and ambition to have accurate reporting of billing information meant that Tata Power could no longer rely on manual collection of data and needed a fool-proof system to address issues like Automatic Data Collection and detect meter abnormalities like tampering.

Tata Power needed a smart automatic meter reading solution which would allow them to remotely collect the data of all their energy meters at a central location automatically through use of cellular technology like GPRS and pass on this information to their existing billing system for generation of consumer electricity bills. This would enable the business to move towards a smart grid implementation and also provide a value added service to their LT Level Consumers like incentives for load reduction and saving power by reducing power consumption.

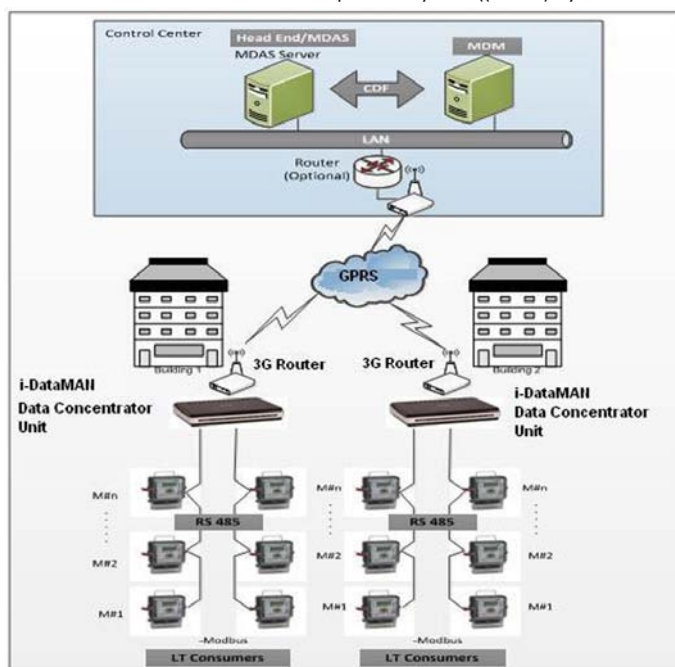
The Solution:

C&A delivered and implemented **iVision_{max} - MDASTM** - Meter Data Acquisition System on time and within the allocated budget, providing Tata power with the ability to improve their operational efficiency. The solution was tested at few selected sites over 8 months and well-accepted by Tata Power.

The solution empowers Tata power to collect real time meter data, like Load Survey, Billing Information and Tamper information from all the consumer locations at a central level via GPRS, at defined intervals.

The Meter Data is collected from energy meters via L&T's Data Concentrator Unit i-DataMANTM, which collects and transfers this data to the MDAS Solution. On failure of GPRS Link between i-DataMANTM and the MDAS, which could be due to low signal strength, the **i-DataMANTM** Unit buffers the data for up to a period of 40 days. On GPRS link retrieval, the

TATA POWER Meter Data Acquisition System ((MDAS) system



System Architecture Diagram

About Us

L&T Control & Automation (C&A) is a Strategic Business Unit of L&T Electrical & Automation. It is a part of Larsen & Toubro – the multi-billion India-based conglomerate. L&T's C&A business is market leader in delivering integrated electrical & automation solutions in India and overseas. With over three decades of experience in diverse industry segments, C&A delivers value through comprehensive solutions based on varied technology platforms and incorporates the benefits of its wide-ranging experience. L&T's state-of-the-art Automation Campus at Navi Mumbai in India has the latest testing and manufacturing equipment. It incorporates a modular manufacturing unit, an application software laboratory and a fully networked office for engineering and project management.

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- ECS & TVM for Metro
- AFC for Metro

Oil & Gas

- Integrated Process Control System
- Pipeline SCADA
- Emergency Shut Down System and Fire and Gas
- Terminal Automation

Power

- Integrated Controls for Boilers and Turbines
- Station C&I for Power Plants
- E&I for main plant & BOP Systems

i-DataMAN™ Unit automatically pushes the data to the MDAS system. Data thus collected at the central location is passed on to the MDM System of Tata Power which is responsible for generating bills for their consumers. **iVision_{max}-MDAS™** also helps in generating user friendly reports which could help Tata Power to

- Monitor Energy Consumption Pattern for consumers
- Get the Data Collection Efficiency
- Get Information on GPRS Connectivity and thereby select appropriate plan with a Telecom Service Provider
- Remotely detect tampering or abnormalities of meters
- Generate reports for visualizing load consumption patterns and for getting the data required to be passed to the MDM system for Billing

Additional Features:

- User friendly GUI with a single front-end for both data visualization and meter configuration.
- Remote configuration of Data Concentrator Unit
- SMS notifications for System Health Monitoring
- Data Conversion to CDF Format as required by the third party billing system of Tata Power.
- Remote update of Serial Communication Parameter like SlaveID of Energy Meter..

- Seamless Built in Integration Compatibility with MS-Excel for report generation.

The Benefits:

In a highly competitive and regulated environment, L&T's **iVision_{max}-MDAS™** has given Tata Power the edge over its competitors to

- Become an efficient utility for supply of electricity to the consumers and also provide value added services like educating the consumers with information on load profile and minimizing wastage of power.
- Minimize its costs incurred on manual data collection and erroneous data reporting.
- Accurate and timely Billing settlements by sharing the required information to MDM System of Tata Power which generates the bills for the consumers.
- A tool for analyzing patterns of consumption and generating reports

Result:

L&T's **iVision_{max}-MDAS™** has enabled Tata power to be the first and only company in India to implement the AMR Solution for LT Consumers. The project which began as a pilot with 2000 Meter will be expanded to an installation base of 40,000 meters.



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