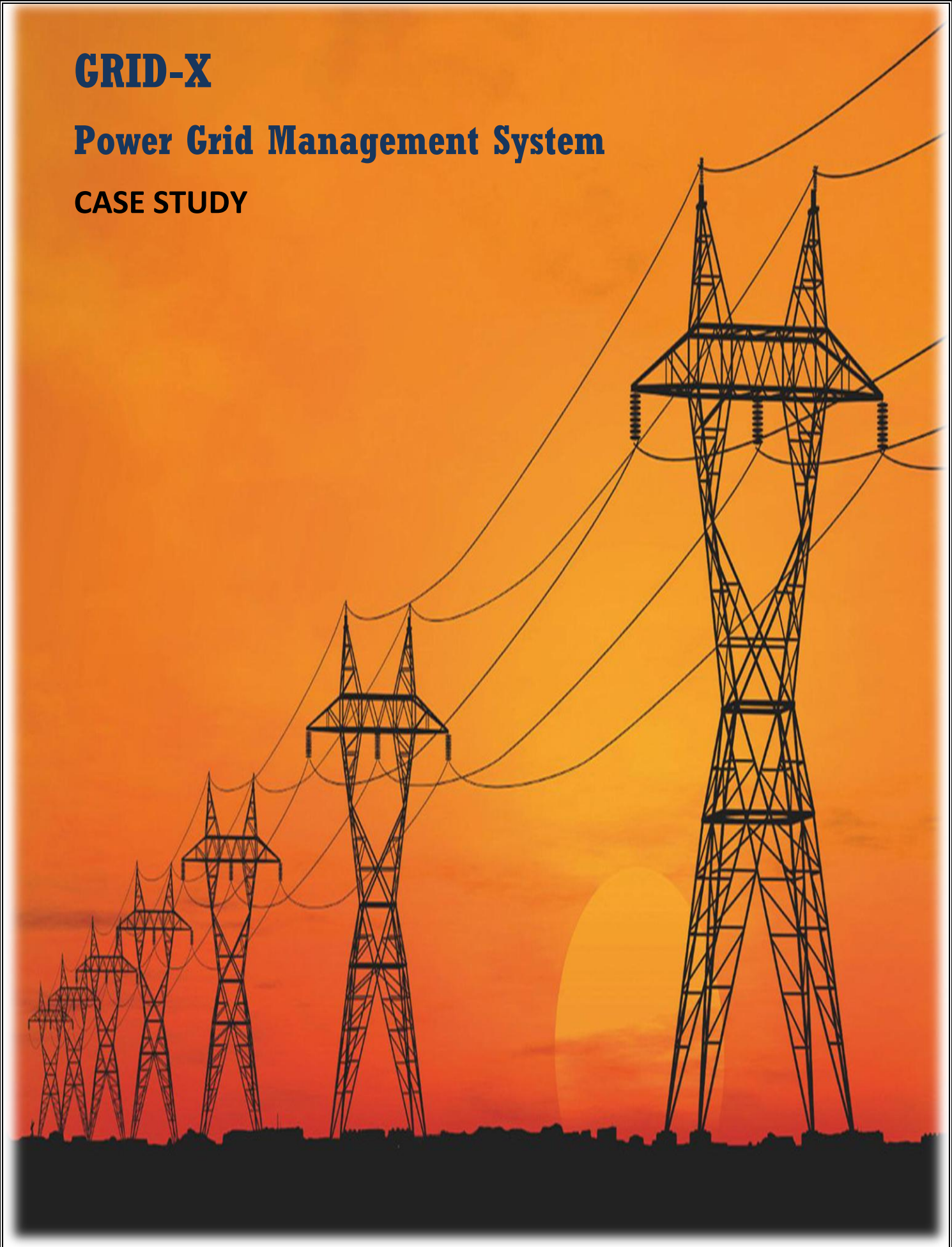
GRID-X

Power Grid Management System

CASE STUDY



INTRODUCTION

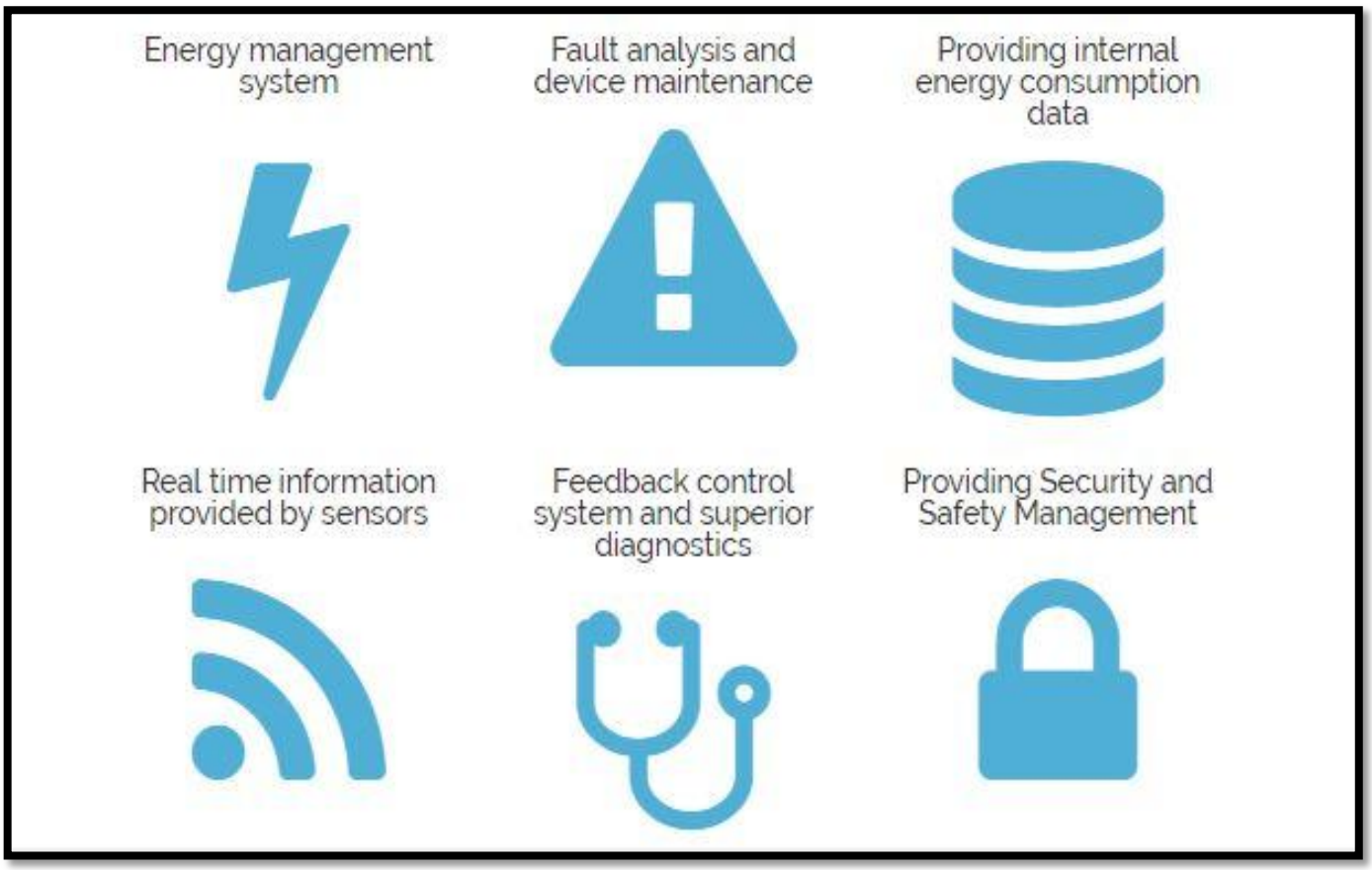
The distribution network is the unsung hero of the electric grid. It is the largest part of a complex network, Due to its size, this portion of the grid has remained largely unmonitored and that has led to reliability issues attributing to outages occurring on the distribution network. As aging assets start to break down, it becomes impossible to troubleshoot grid health without real-time data. And, without situational awareness and real-time intelligence, it becomes nearly impossible for grid operators to bring the electric grid into the 21st century.

GRID X- Our solution for GMS

The grid topology needs to adapt and shift from a centralized source to a distributed topology that can absorb different energy sources in a dynamic way. There is a need to track real time energy consumption and demand to the energy supply for that we are employing our solution GRID X.

- ✓ **Deployment of more remote sensing equipment capable of measuring monitoring and communicating energy data that can be used to implement a self-healing grid.**
- ✓ **Integrating new modern tools and technologies for transmission and distribution.**
- ✓ **Incorporate extensive capacity, rapid, centralized communications superior diagnostics, and feedback control that rapidly return the system to a stable state after interruption or instability.**
- ✓ **The level of self-monitoring and decision making.**

Features of Grid-X:-



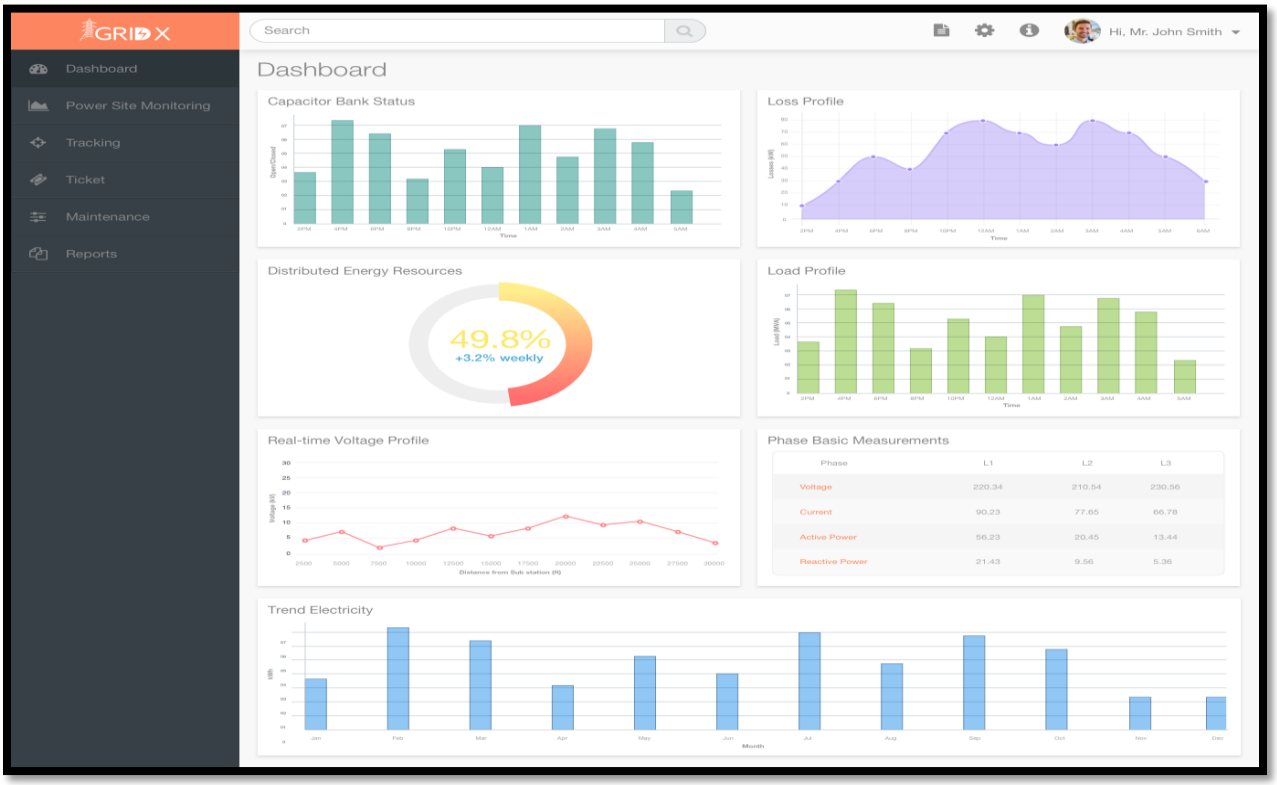
With GMS (Grid-X), you can do the following:

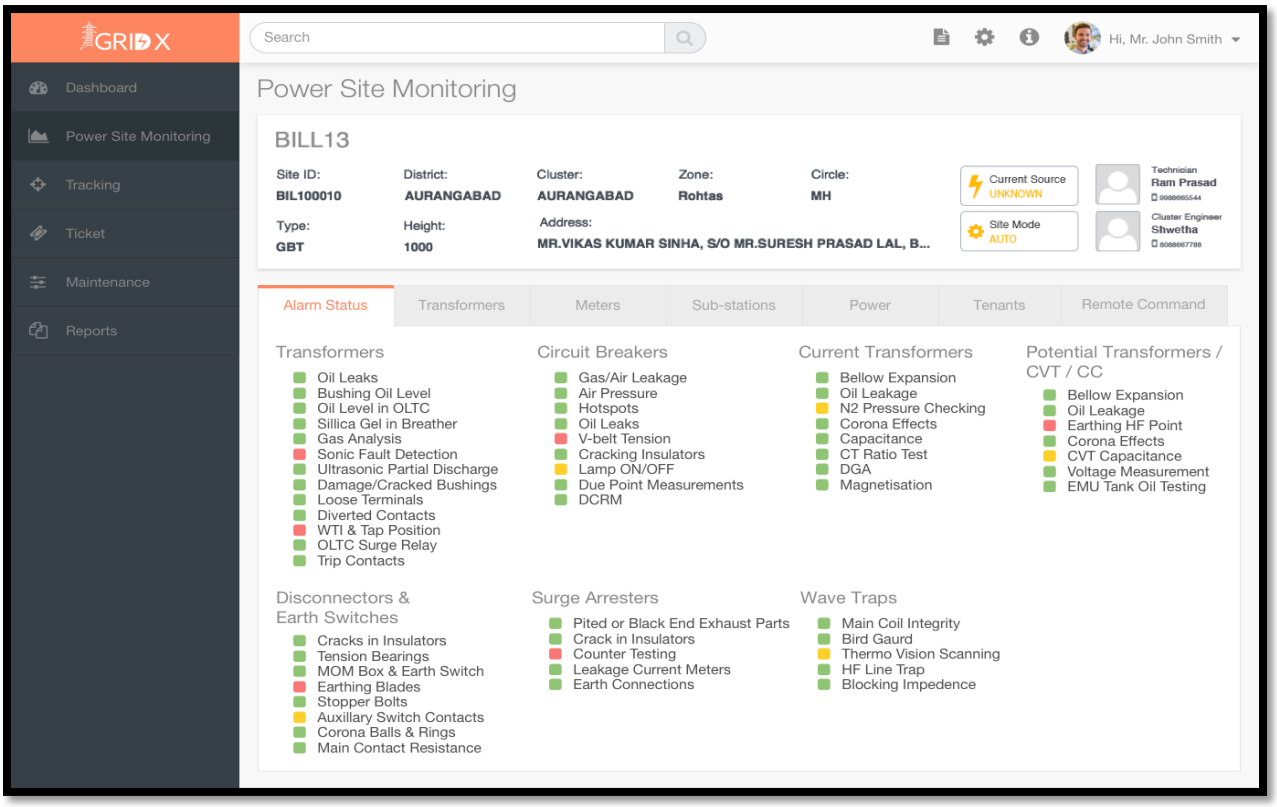
- Sensors, remote diagnostics and parameter settings
- User Interface (UI) and visualization tools
- Reporting dashboards and alarms
- Analytics functions to filter out or suppress data before it is passed to higher level systems
- An archive database of waveforms and fault events, available anytime to your engineers for post-event analysis
- Fault detection and location with predictive grid analytic

GRID-X BENEFITS

- **Improving Power Reliability and Quality**
  - Better monitoring using sensor networks and communications
  - Better and faster balancing of supply and demand
- **Minimizing the Need to Construct Back-up (Peak Load) Power Plants**
  - Better demand side management
  - The use of advanced metering infrastructures
- **Enhancing the capacity and efficiency of existing electric grid**
  - Better monitoring using sensor networks and communications
  - Consequently, better control and resource management in real-time
- **Improving Resilience to Disruption and Being Self-Healing**
  - Better monitoring using sensor networks and communications
  - Distributed grid management and control
- **Expanding Deployment of Renewable and Distributed Energy Sources**
  - Better monitoring using sensor networks and communications
  - Consequently, better control and resource management in real-time
  - Better demand side Management
  - Better renewable energy forecasting models
- **Automating maintenance and operation**
  - Better monitoring using sensor networks and communications
  - Distributed grid management and control
- **Increasing consumer choice**
  - The use of advanced metering infrastructure

UNIFIED SITE DASHBOARD





Why GRID-X for Grid Management

- **Grid-x is uniting diverse monitoring, communications, intelligence and action technologies into information-age solutions which allow for new operations and customer-side applications of the electric grid.**
- **Our smart grid technologies are also helping reduce the price of electricity through more reliable communication between consumers and suppliers. We're also using the smart grid to enhance operation, make more efficient use of grid assets, and help plan more cost-effective expansion of the electric grid.**
- **All these systems and experiences are now combined into a comprehensive vision for a unified system architecture that covers many critical Smart Grid requirements.**