MECWIN®

EMPOWERING FUTURE

MECWIN TECHNOLOGIES INDIA PVT.LTD

Internet of Things (IoT)

About Us

At MECWIN, we are pioneers of the clean energy movement, creating cutting-edge products that empower the people. Our values of efficiency and innovation are reflected in our high-quality, resilient, and trustworthy range of products

Welcome to the forefront of Internet of Things! We're introducing a ground breaking innovation: a solar-operated agricultural water pump integrated with a comprehensive remote monitoring system. This powerful solution not only harnesses the energy of the sun for efficient irrigation but also empowers users and all agencies involved with real time insights, remote control, and intelligent optimization for improved yields, reduced costs, and enhanced sustainability

Milestone

Purpose

Optimizing Energy Management

Increased Efficiency

The remote monitoring system enables users to track pump performance, water usage, and solar energy generation in real time. This valuable data allows for optimized irrigation scheduling, minimizing water waste and maximizing crop yields

Enhanced Maintenance

By continuously monitoring critical system parameters, the system proactively detects potential issues and alerts users to potential problems. This proactive approach minimizes downtime and costly repairs, ensuring the pump operates smoothly and efficiently

Improved Reliability

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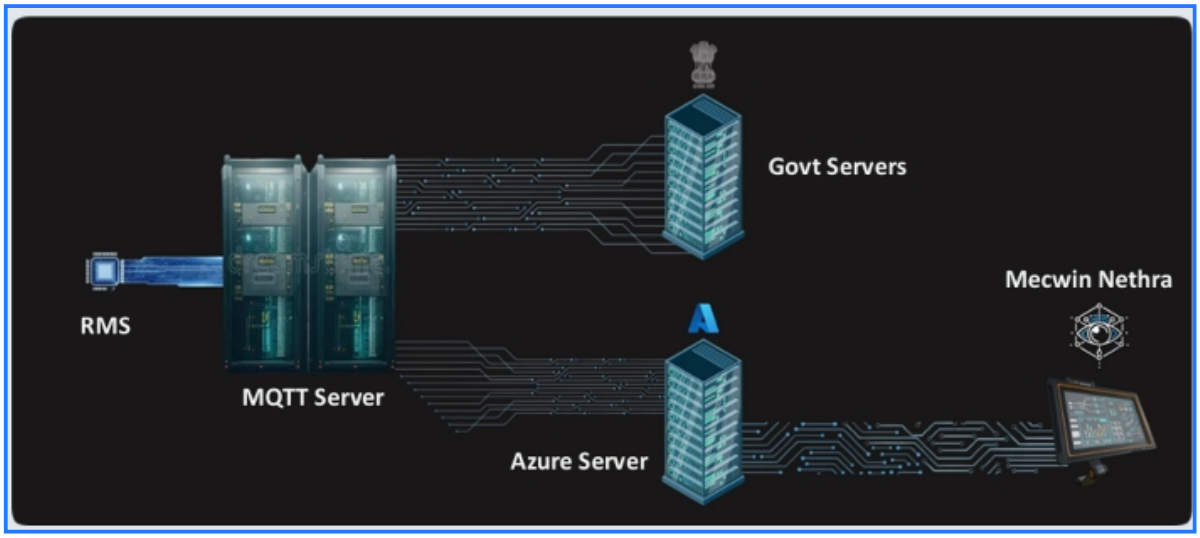
Greater Sustainability

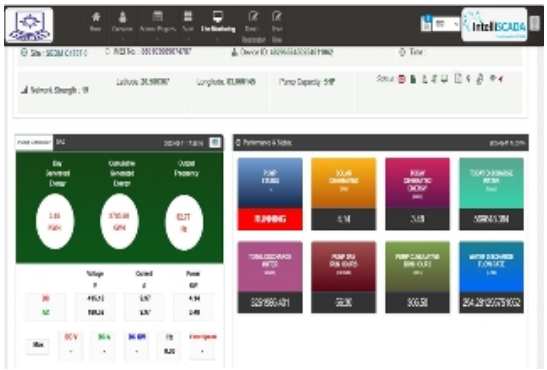
By leveraging solar power and optimizing energy usage, the system reduces reliance on conventional energy sources, promoting environmental sustainability and contributing to a greener future for agriculture.

Device Configuration

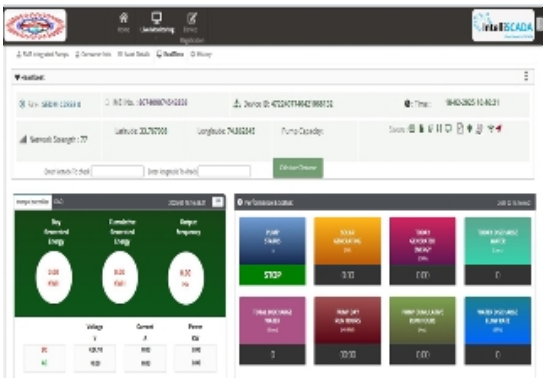
- Intelligent Field Device (IFD)
- Ultrasonic Level Sensor
- Contactor (32A, 55A, 100A)
- Remote Craft Terminal
- Energy Meter
- Pressure Sensors
- Motion Sensors
- Load Sensors
- Humidity Sensors
- Current Sensors
- And More.



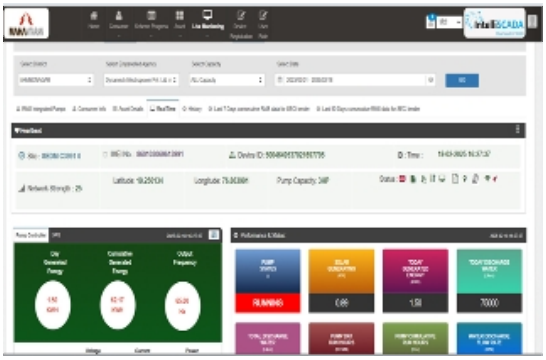
Integrated with State Government and Central Government Portals



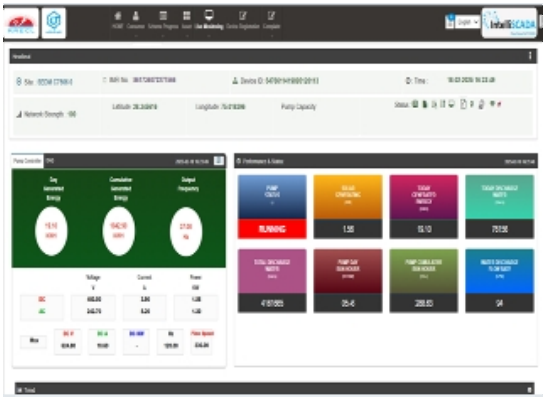
Odisha Govt. Portal



Jharkhand Govt. Portal



Maharshatra Govt. Portal



Rajasthan Govt. Portal

Possible Applications

- Pump Automation and Monitoring
- Lighting Control (Platform and Street Lighting)
- Lift and Escalator Monitoring and Control
- Substation Monitoring
- Traffic Flow Optimization (Air, Water, Land)
- Cloud-Based Monitoring and Control
- Predictive Maintenance
- Energy Management System
- Fault Detection and Diagnostics
- Environmental Monitoring
- Asset Tracking and Management
- Smart Irrigation Control
- Emergency Response Integration

Compatibility and Configuration

Custom Configuration & Scalability:

Mecwin Nethra is designed for flexibility, allowing easy customization to fit specific user needs. Whether it's fine-tuning device parameters, integrating with unique workflows, or scaling for larger infrastructures, the platform ensures a hassle-free configuration process

Seamless Integration & Compatibility

Designed to work effortlessly with multiple IoT devices, different server configurations, and diverse data requirements. It also supports parallel data monitoring & storage across multiple external systems, ensuring real-time insights and enhanced operational efficiency.

Uncompromised Security & Privacy:

Security remains a top priority, with robust encryption protocols and stringent data privacy measures in place. Mecwin ensures that all user data is protected from unauthorized access, reinforcing trust and reliability

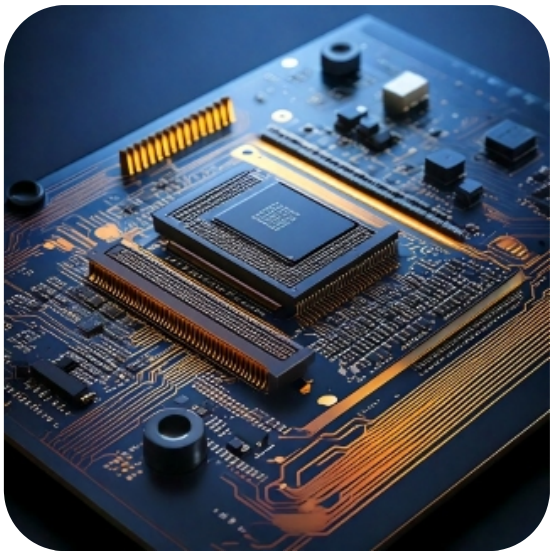
Core Components

Cellular Modem

A Quectel 4G LTE module provides reliable long distance communication for real-time data transmission and remote control

Solar Controller

A dedicated solar controller manages energy flow between the solar panels and the pump motor, ensuring efficient energy utilization and optimized performance



Computing Core

An advanced microcontroller processes local data, manages communication protocols, and ensures seamless operation of the system's various components.

Data Acquisition

The system offers flexible data logging intervals, allowing users to adjust the frequency of data collection based on their specific needs, ranging from real-time monitoring for critical situations to daily reports for long-term trend analysis.

Solar Panel Output : Voltage, current, and power generation data provide insights into solar energy availability and efficiency

Pump Operation : Motor speed, water flow rate, and system status information enable real-time monitoring and analysis of pump performance.

System Architecture

Hardware Design : The system's hardware components are designed to be robust and reliable, ensuring long-term performance in diverse environments. The micro controller acts as the central control unit, interfacing with sensors, managing data processing, and coordinating communication protocols. The solar controller efficiently manages energy distribution between the solar panels and pump motor, maximizing energy efficiency and optimizing pump operation.

System Architecture

Software Design :The software design prioritizes ease of use and functionality. The cellular modem enables seamless data transmission using MQTT and HTTP protocols, facilitating communication with the cloud and local control interface The system features a user friendly mobile app and web interface, allowing users to easily monitor and control the pump from any location

Real-time Analytics

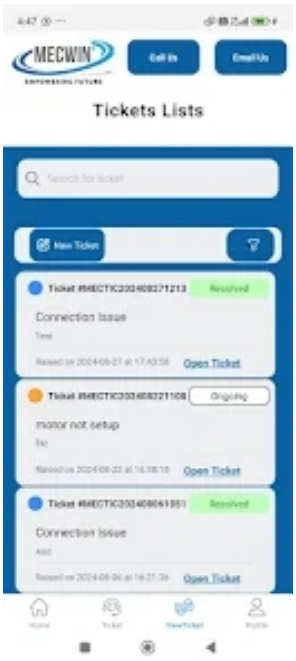
- **Real-time Analytics:** Gain insights into pump performance, solar efficiency, and environmental data.
- **Optimized Operations:** Improve water use, reduce energy, and boost crop yield through informed decisions.
- **Secure & Scalable:** Reliable data handling for irrigation, defense, and other IoT systems with timely updates.

Remote Monitoring System & Mecwin Nethra

Mecwin Nethra is an advanced remote monitoring system (RMS) developed for real-time monitoring and control of IoT motor systems, supporting multiple user roles. Key features include detailed motor performance reporting, remote motor operation, and a robust service ticketing system.

With a user-friendly interface and seamless data integration, Mecwin Nethra enhances operational efficiency and ensures reliable management of irrigation systems

Available in all digital platforms: Desktop, iOS and Android

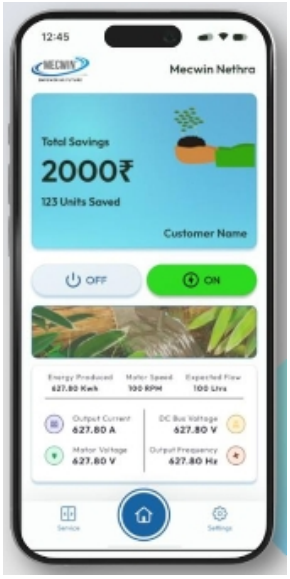


Remote Monitoring System & Mecwin Nethra

Key Features (End Users)

- **Control via Mobile App**
  Users can remotely switch the pump on or off through our user friendly app with a click of a button with ease.
- **Scheduling, Automated Fault Detection and more**
  The system allows users to set automated irrigation schedules, get fault alerts in case of failures, raise tickets immediately with our state of the art escalation matrices tickets management system – that also shows the relative service status
- **Real Time Data**
  View and track energy consumption, cumulative water flow, voltage, rotor frequence and much more

End-User Level Control

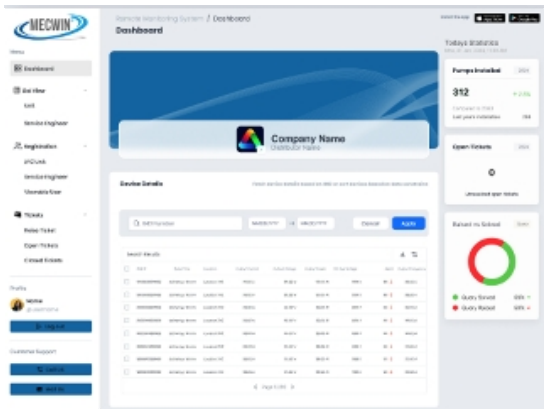


Remote Monitoring System & Mecwin Nethra

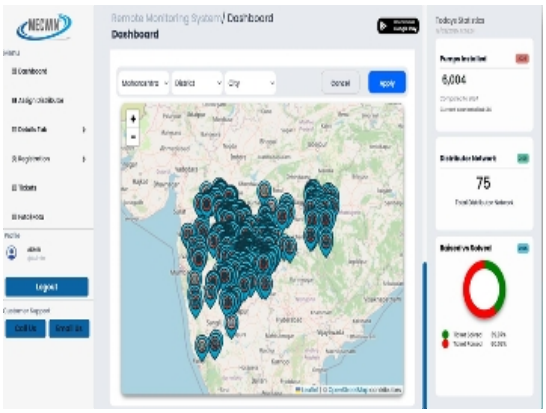
Key Features (Admin)

- **Smart Ticket Management System**
  Sit at ease with Mecwin's intelligent ticket management system with built in chat system. Enhancing Enhancing serviceability and simplifying issue identification. Automated priority assignments, asset geo
- **Smart Grid Integration**
  The system is integrated and tailored to show all relevant data of all your pumps along with precise geographical location of each pumps with multiple filters and sorting mechanism.
- **Asset Management**
  In-depth details at a single point where you can view or modify the assets assigned to the specific distributor at your fingertips.

Sub-Admin Level Control



Manager DashBoard

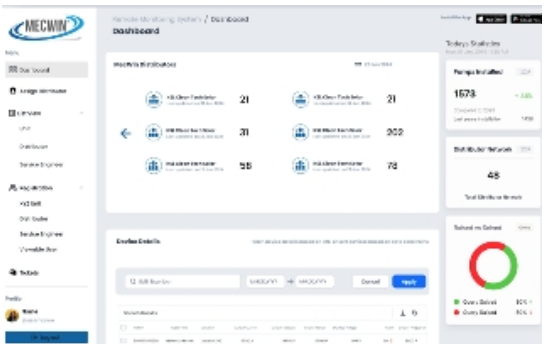


Geo Locating and Smart Fencing

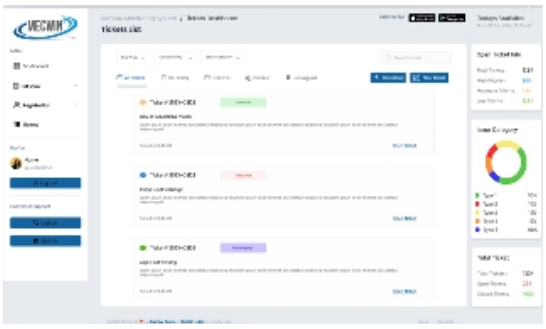
Special about Nethra

- **Advanced Real-time Analytics:** Monitors pump, solar, and environmental data via IoT.
- **Predictive Insights**: Enables proactive decisions to reduce downtime and extend lifespan.
- **In-house R&D Integration:** Uses analytics to enhance and evolve product offerings.
- **Continuous Evaluation:** Tracks asset performance with real-time diagnostics and issue detection.
- **Sustainable Solutions:** Delivers reliable, future-ready products through tech-driven innovation.

Admin Level Control



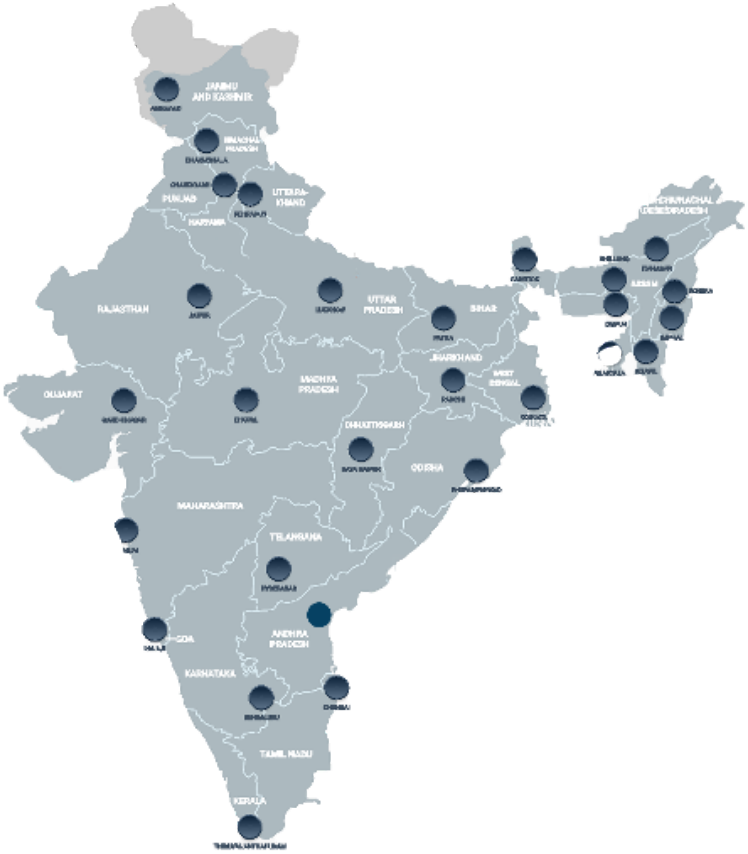
Admin Dashboard



Smart Service System

Service And Support

Our Service & Support team are directly accesible in Pan India.



MECWIN GLOBAL PRESENCE

- Sudan
- Uganda
- Phillippeness
- Dubai
- Nepal
- Bhutan
- Bangladesh
- Bhutan

Contact Us

Mecwin Technologies India Pvt.Ltd

{ Manufacturing Plant }

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