

# RM EYE

Advanced Asset Performance Management System



AI &  
Asset Health  
Models



Alarm & Alert  
Notification  
in Email & SMS



Supports On  
Prem & Cloud



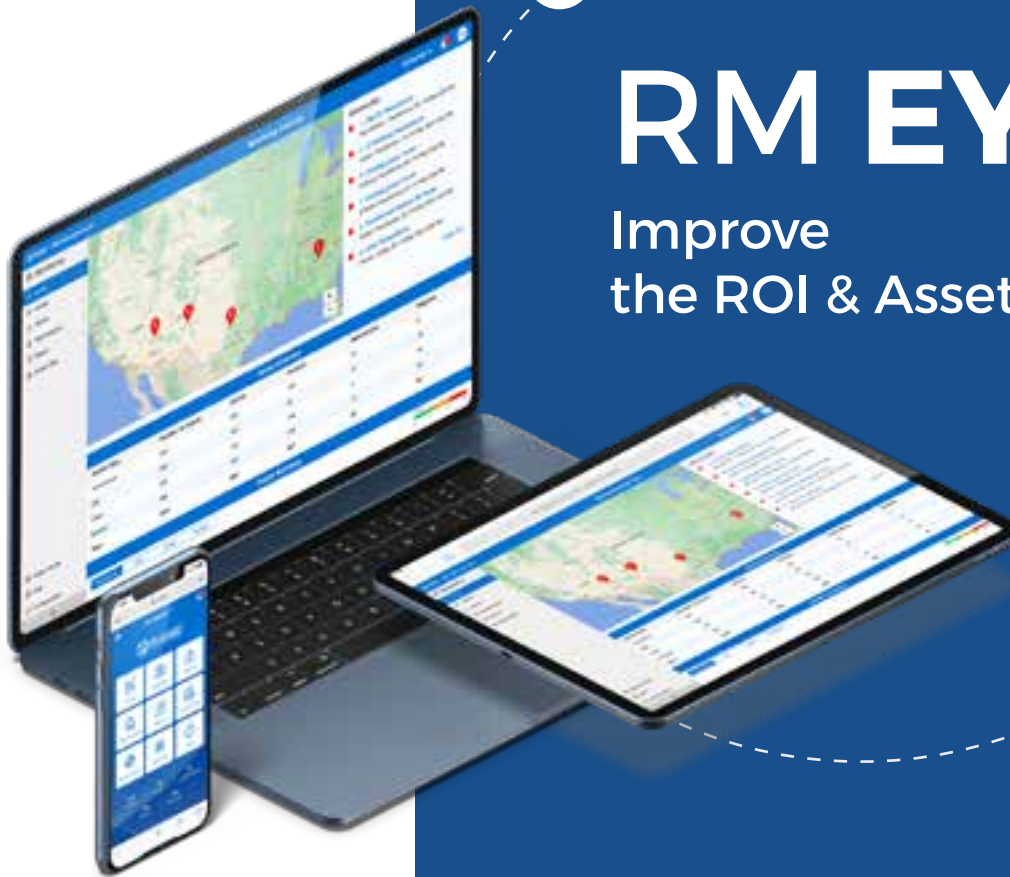
Advanced  
Reporting



Data  
Security



Seamless  
Integration



# RM EYE

Improve  
the ROI & Asset life.



- 1 Advanced Asset Performance Management System
- 2 One solution for all electrical assets
- 3 Remote monitoring of network of assets
- 4 Avoid unplanned outages
- 5 Reduces cost of planned outages
- 6 Extend the life of your electrical asset
- 7 Minimize asset replacement costs
- 8 Most advanced OEM agnostic solution
- 9 On-prem or cloud based monitoring
- 10 Machine Learning and Digital Twin Capability
- 11 ISO 55000 Implementation

Monitor your  
Electrical Assets  
**Now!**

# Industry Solution for



Utilities



Power plants



Solar farms



Wind farms



Battery storage stations



Refineries



Metals and Mining



Data centers



Oil and Gas



Charging station



Steel plant



Industrial plants



Marine



## How does RM EYE help users?

For companies who want to do the condition monitoring of multiple assets across multiple location with one system, RM EYE is the industry leading Condition monitoring system. RM EYE emphasizes technological research, domain expertise, and takes an innovative approach for condition monitoring of the electrical assets. It considers every aspect in condition monitoring of different assets and users to give the best recommendation for longer and better health of the assets.



**RM EYE** is Rugged Monitoring's comprehensive electrical asset condition monitoring solution that provides a 360 degree Accurate, highly reliable, multi-site, multi asset condition monitoring for all the electrical assets like Transformer, Power Cable, GIS, AIS, Motors, Generators, MV Panel, VFD, Battery, UPS, relays etc. The software is modular and flexible condition monitoring solution for utilities and industrial customers around the globe.

RM EYE is an effective intelligent system with user-friendly interface and advanced industry standards. The scalable solution helps in digital transformation of asset condition monitoring, helping the customers in digitizing the condition monitoring for offline testing, periodic testing, and online testing.

The RM EYE solution is a web-based application, which is multi browser compatible, and it is also available on mobile as PWA, enabling 24 x 7 remote access to the assets. It offers health analytics of the complete fleet across multiple locations in terms of Health Index, Risk index and Remaining Lifetime index to help customers plan the maintenance and replacement in more informed manner. The advanced analytics and health indexes help removal of unnecessary maintenance and replacements and improve the ROI.

## Benefits



### Company

- ✓ Single monitoring solutions for multiple assets
- ✓ Avoid unscheduled outages and increase asset utilization
- ✓ Extend asset life, with proper maintenance
- ✓ Reduce insurance premium with most advanced monitoring
- ✓ 24 x 7 remote monitoring, accessible from anywhere



### Manager

- ✓ Decision support system for short term and long term planning
- ✓ Company, region, substation analysis on your fingertips
- ✓ Effective management and tracking of monitoring KPIs
- ✓ Identify problem areas with interactive dashboards
- ✓ Advanced and automatic management/regulatory reports



### Asset Experts

- ✓ Deep analysis of diagnosed faults with advanced analytical tools
- ✓ Complete asset data at one location
- ✓ Customise and generate automatic reports for subscribed assets
- ✓ Ready access to historical data for root cause analysis



### Operators

- ✓ Quick identification of problematic assets in the network
- ✓ Get real time alarm/ alert notifications
- ✓ Realtime updates about the assets on mobile, desktop and emails
- ✓ Quick access to assets with QR code scan on handheld devices

# Advanced Asset Performance Management System

**RM EYE - Unified platform to monitor entire network of electrical assets**

## Features

- **Advanced asset health monitoring** with analysis and recommendations to increase asset effectiveness in addition to maximizing equipment uptime
- **Modern remote monitoring solutions** provide valuable insights to Multiple Assets at Multiple Sites from time to time
- **Establish a real time and consistent monitoring** by getting the right information into right hands
- **Simple and user-friendly interface** providing easy and fast access to all the features
- **Everything about the asset at one place**  
The raw data, analysis and recommendations
- **Advanced asset algorithms** for electrical assets to evaluate asset health
- **Advanced reporting technology with automated alerts**
- **An efficient, reliable partial discharge monitoring for all the assets**
- **A detailed comprehensive DGA analysis**
- **Built on well-established remote and cloud-based monitoring technology**
- **Quick configuration** so that you are not required to configure separately.
- **Protocols: IEC 61850, MODBUS, MQTT**
- **Robust integration with 3rd party systems and devices** with industry standard protocols
- **Bulk configuration imports for fast deployment**
- **Encompasses a secure access to data and configuration**
- **QR code scanner on mobile devices**
- **Accessible on web browser and mobile app**
- **Historical data storage and on demand access** via export feature
- **Extended multilingual support** to handle product inquires or troubleshoot problems proactively
- **Systematic fleet management analysis**
- **Offline test data integration and analysis**

# Parameters Monitored

for different Asset Types



## Transformer



- Temperature monitoring
- NEI & DP analysis
- Complete health indexing
- DGA analysis
- Partial discharge monitoring and analysis
- Thermography
- OLTC monitoring
- Bushing monitoring
- Cooling system monitoring
- Humidity in insulation
- Bubbling temperature

## Switchgear

- Breaker Analytics
- Breaker Monitoring
- Motor Monitoring
- SF6 Monitoring
- Contact wear
- Partial Discharge monitoring
- Temperature monitoring



## Rotating Machines



- Temperature monitoring
- Power monitoring
- Current signature analysis
- Vibration monitoring
- Flux monitoring
- Realtime Process parameters monitoring

## Power Electronics



- Relay monitoring
- Battery Monitoring
- UPS Monitoring
- VFD Monitoring

## Power Cables



- Partial Discharge monitoring
- DTS
- Fault localization
- Sheath Current Monitoring
- Cable Termination and Joint Temperature Monitoring
- Busduct monitoring



# RM EYE

# Asset Monitoring : Enterprise Architecture

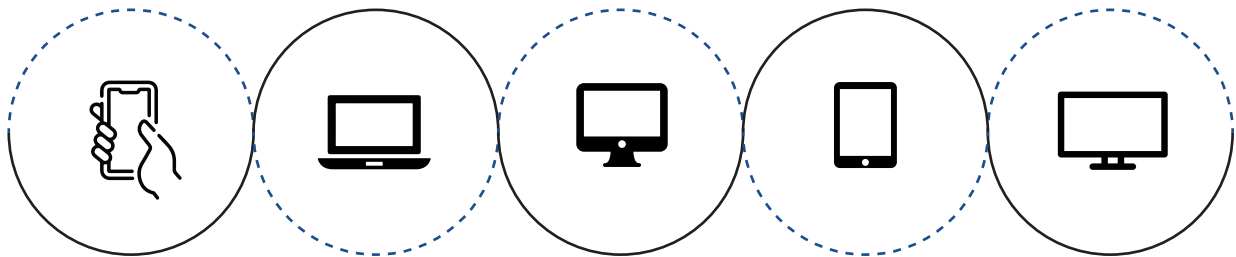
Compatible with Rugged Monitoring Enterprise Solution

## UI/UX



- Data Layer
- Analytics
- User Interface
- Custom Dashboards
- Reporting
- Email/SMS Notifications

## RM EYE



Private Cloud (Customer Cloud),  
Rugged Monitoring Cloud

**IEC 60870-104**

**IEC 61850**

**FTP/SFTP**

- XML, JSON

- CSV, COMTRADE

**Data Collection**

**ODBC**

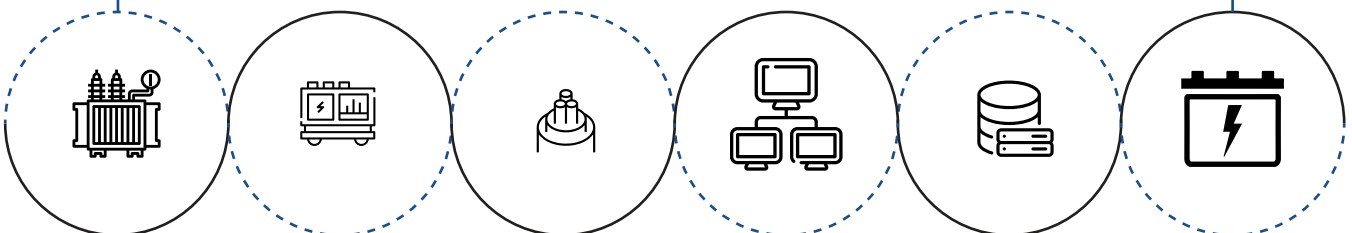
**MODBUS**

**DNP 3.0**

**HTTPS**

**MQTT**

## Asset Data



Transformer  
Monitoring  
System

Switchgear  
Monitoring  
System

Power Cable  
Monitoring  
System

- Offline Test Results  
- Inspection Records  
- Name Plate

- Historian  
- CMMS  
- SCADA/ DCS

Power Electronics  
(Battery, UPS,  
VFD, Relay)

# Technical Specifications

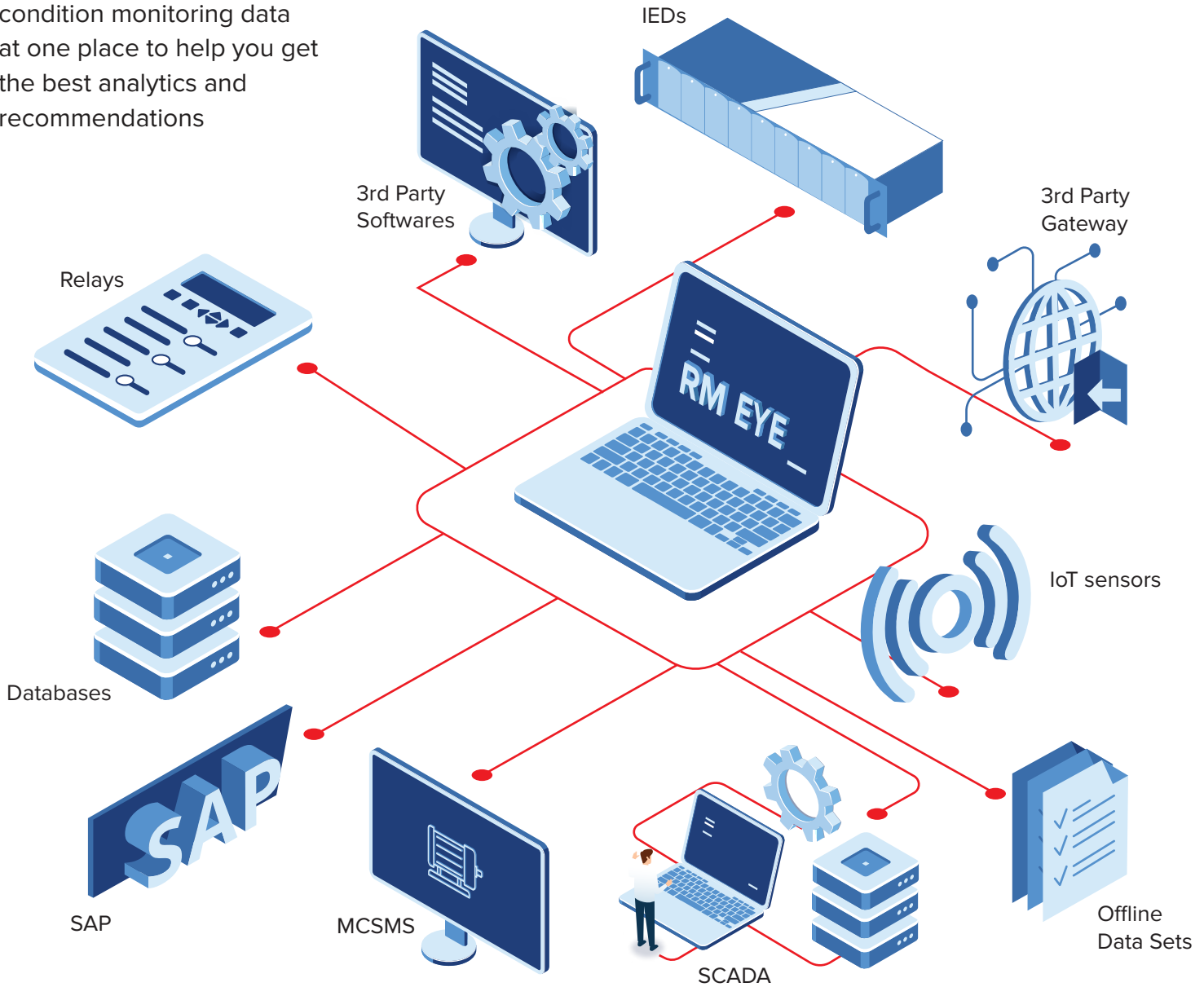
Asset Types Monitored	<ul style="list-style-type: none"> <li>- All types of Transformers</li> <li>- Switchgears (AIS, GIS, MV Switchgear Panels)</li> <li>- Power Cables</li> <li>- Generators and Motors</li> <li>- Surge Arrestors</li> <li>- Capacitor Banks</li> <li>- Battery Banks</li> <li>- Protection Relays</li> <li>- Variable Frequency Drives (VFDs)</li> <li>- Towers and Overhead lines</li> </ul>
Number of Asset Monitored	<ul style="list-style-type: none"> <li>- Depends on hardware platform</li> <li>- Software can support monitoring of Less than 10 Assets to 1 Million+ Assets</li> </ul>
Scalability	<ul style="list-style-type: none"> <li>- Scalable to add additional assets at later stage</li> <li>- Will require licences to add more number of assets in future</li> </ul>
Modularity	<ul style="list-style-type: none"> <li>- Modular to add more features (Dashboards, Reports, users etc.)</li> <li>- Modular to add new assets and asset types on existing installation</li> <li>- Supports SaaS model, easy to integrate third party analytics</li> </ul>
Hosting / Installation Options	<ul style="list-style-type: none"> <li>- On-Prem (into Customer Data Center)</li> <li>- Customer Cloud Hosting</li> <li>- Rugged Monitoring Hosted Cloud (Subscription based)</li> </ul>
Analytical Models	<ul style="list-style-type: none"> <li>- Asset health Assessment Analytics for Fault Identification and Categorization</li> <li>- Advance Health Index, Risk Index and Criticality Index Analytics for Fleet of Assets</li> <li>- Asset Aging Analytics and Remaining Life Assessment</li> </ul>
Alarm / Alert Notification	<ul style="list-style-type: none"> <li>- Real-Time Alarm and Alert Notification using Traffic Light Indications</li> <li>- Alarms related to issues with Assets, Communication Failure, Power Failure, System Fault, Sensor Failure etc.</li> <li>- Alarm summarization for Substation, Region and Company Level</li> <li>- SMS / Email Notification (Optional)</li> </ul>
Visualization and Dashboards	<ul style="list-style-type: none"> <li>- User configurable visualization for different roles, Company, Region, Substation and Asset Level</li> <li>- Advance Analytical Visualization for all Assets</li> <li>- Easy to navigate to the problematic Asset</li> </ul>
Reporting	<ul style="list-style-type: none"> <li>- Advance reporting engine with flexibility to configure different Reports</li> <li>- Automatic Report Generation on User defined criterion / time period</li> <li>- Automatic Email feature for Reports</li> </ul>
Data / Cyber Security	<ul style="list-style-type: none"> <li>- Compliant to NERC CIP5 standard</li> <li>- Complaint to IEC 62443</li> </ul>
User / Role Management	<ul style="list-style-type: none"> <li>- Easy Integration with Customer Active Directory Control</li> <li>- Functionality to create roles and users for limiting access to the system</li> <li>- Provides flexibility to limit data access and screen level access</li> <li>- Latest Password Protection Practices</li> </ul>
Data Input Protocol Supported (for Third Party Monitoring System Integration)	<ul style="list-style-type: none"> <li>- Modbus, DNP3.0</li> <li>- IEC60870-101, IEC60870-104, IEC60870-105</li> <li>- IEC61850</li> <li>- OPC-DA, OPC-UA</li> <li>- MQTT</li> </ul>
Data Input File Supported	FTP/SFTP of following file formats: CSV / Excel, JSON, XML, and PDF
Data Export Protocol Supported	Modbus, DNP3.0, IEC60870-104, IEC61850, OPC-DA, OPC-UA, MQTT
Data Export File Supported	FTP/SFTP of following file formats: CSV / Excel, JSON, XML, and PDF



# Seamless Integration

Seamlessly integrates with any system communicating over the industry standard protocols like IEC 61850, MODBUS, DNP3, MQTT etc. Robust and swift integration allowing superfast data acquisition from any IED or software, and distribution of data to multiple IEDs and systems.

Helps to keep all the condition monitoring data at one place to help you get the best analytics and recommendations



## Technological strengths



Realtime Updates



Responsive UI



Robust Architecture



Cyber Secure



Future Proof Techstack

# Why Customers Choose Us?

RM solution, the trusted monitoring solution for over 10000+ assets across 50+ countries. We are a leading High Value Electrical Asset Monitoring Company integrating fibre optic technology to the assets.



## Attention to Detail

It's our attention to the small stuff, scheduling of timelines and keen project management that makes us stand out from the rest.



## A plan for Success

Our Customers are well satisfied with the advisory services that we offer to help them with best in class technological performance and a long durable life.



## Experts only

We bring-in our diversified experienced team with over 100+ years of experience in Asset Monitoring



## Meeting Deadlines

Work with us, and you'll work with seasoned professionals – vigilant of deadlines, and committed to exceeding client expectations.



## Money Matters

We protect you against currency fluctuation with competitive and fair market prices



## Rugged Monitoring Services

Rugged Monitoring provides customization of sensors, monitors & software. In addition we offer on-site commissioning services, maintenance contracts and technical support to all customers worldwide.

## About Rugged Monitoring

Industry's leading team of asset condition monitoring experts with 100+ years of combined experience committed to delivering customizable solutions for challenging applications. We offer a range of reliable, high performance, customizable sensors and monitoring solutions that are immune to external influence.

# Certification



ISO 9001



ISO 14001



ISO 45001/  
OHSAS 18000



Lloyd's  
Register



ATEX  
Certification



IEC 62443



NERC CIP-5


# Our Presence Across the Globe



## Head Office

 **Canada**

1415 Frank-Carrel, Suite  
230, Quebec, QC - G1N  
4N7, CANADA

 +1-418-767-0111

Asia Pacific | China | India | Middle East and Africa | Europe | North America | Latin America



 [ruggedmon](#)

 [info@ruggedmonitoring.com](mailto:info@ruggedmonitoring.com)

 [www.ruggedmonitoring.com](http://www.ruggedmonitoring.com)

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