Asset Health Management

for business critical assets

Why Asset Health Management?

Pragma provides an engineering support service that provides:

All businesses are dependent on the reliability and availability of critical assets for the smooth running of their operations. The impact of asset failure ranges in severity, and can include a total loss of production, inefficient service delivery, loss of income, damage to brand equity, or a breach in legislative compliance. What if you could use technology to give these assets a voice to provide vital information for fast and accurate decision making?

Main challenges addressed

Unreliable assets

Critical assets not being available when needed impacts your income, operational safety and reputation

Unpredictable costs

Reactive maintenance is expensive and difficult to plan for

Poor work practises

Incorrect maintenance tactics increases statutory risk, and reduces asset life span

Measurable benefits delivered

Improved availability

Assets are monitored in real time, pro-actively maintained and always available

Transparent information

Asset performance and costs are benchmarked, planned and controlled

Business sustainability

Operational disruptions are reduced, incident response improved, and risk* is reduced

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asset management | engineered

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Enabling Asset Health Management

What is Asset Health Management?

By definition it integrates the benefits of IIoT sensors, data capturing, visualisation and analytics to improve the reliability and availability of physical assets.

Asset health is monitored on line and in real time, allowing the use of advanced asset management techniques such as:

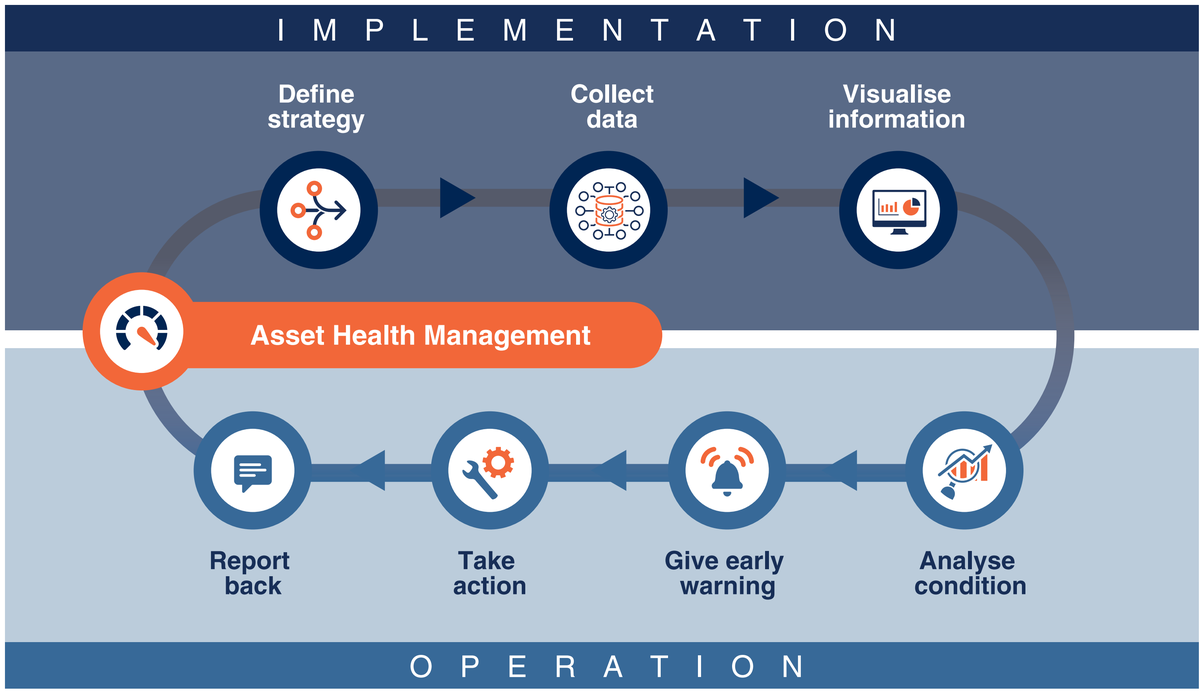
- Predictive work forecasting, use of the optimum
- Maintenance activity mix, and allowing owners to take
- Corrective action before failure occurs.

24/7/365 availability of asset performance information

The Pragma Way | More than just Monitoring

We deliver asset type specific performance management solutions for your business critical assets.

A dedicated team of specialised engineers are ready to support you around the clock, helping you to optimise asset performance through the implementation of the necessary predictive asset management business processes and technologies.



This model illustrate the full solution.

Key Features | End-to-End Solution

- **Focused on business critical** assets
- **Risk analyses** using FMEA techniques
- Effective **Asset Care Plans** to describe optimal maintenance practices
- **Edge-to-Cloud** technologies applied to give assets a voice
- Access to **visualisations and "Digital Twin"** performance information
- **Expert analysis** of asset performance data and information
- **Early warning** of eminent functional failures
- **Effective mobile** work management
- **Incident investigation** and improvement recommendations
- **Optimisation** of asset care plans and predictive maintenance strategies
- Management of **contractor performance** to optimise cost and risk

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24/7 monitoring and management service

Asset Health Management on MV Switchgear

Want to mitigate the risks posed by your MV Switchgear failing and leaving your plant without power when you need it most?

Pragma provides an engineering support service that provides:

- Improved MV Switchgear availability
- Extended asset life
- Reduced business interruption risk
- Increased cost transparency and predictability
- Lower health, safety and environmental risk

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MV Switchgear

Our scope

Assets we cover

- MV switchgear

Industries we serve

- Manufacturing
- Mining
- Petrochemical
- Public Sector, Metros, Municipalities, Water boards
- Energy generation, transmission and distribution (incl. Renewable Energy)

Large industrial, mining, petrochemical, utilities and municipal owners are dependent on the reliability and availability of their MV switchgear to distribute and supply their plants or customers with electricity without interruption and to protect the network in case of faults. If MV switchgear fails, it can be catastrophic and lead to a loss of life, business and service delivery interruption, reduced income, brand equity and much more. By continuously monitoring these assets you have factual and real-time information about the health of these assets and are able to make quick decisions and take action.

Your challenges

Asset Reliability Risk

- Catastrophic failures including fires, gas emissions and explosions
- Consequential damage to equipment controlled by switchgear is potentially significant
- Business interruption is a major consequence of switchgear failure

Statutory and Safety Risk

- Significant risk human life in case of catastrophic failure or failure to function as electrical circuit protection and isolation
- Management of statutory requirements, incl. having panels and protection schemes verified, maintained and tested annually or in accordance to network regulations
- Poor compliance to regulatory or risk requirements (also for insurance)

Impact of poor maintenance practices

- Statutory compliance work not recorded
- Remedial work not managed
- Maintenance work quality not ensured
- Reduced asset reliability

Our value

Improved business sustainability

- Efficient implementation of digitalised maintenance processes
- Reduced business interruption risk through reliance on switchgear expert monitoring and advice
- Critical information provided to enable agile decision making

Switchgear availability assurance

- Continuous trending of asset condition parameters, incl. partial discharge, temperature, humidity, load and power quality
- Advanced diagnostics on-site to support fault finding efforts and take corrective action before failure
- Reactive and predictive maintenance work identified, planned and executed by expert field technicians
- Maintenance work inspected to ensure quality
- RCM based maintenance plans

Best-in-class monitoring solution

- Supply and installation of industry leading monitoring technology
- Intelligent Gateway that bridges the gap between edge devices and the cloud irrespective of interfaces and protocols
- Use of cutting edge analytics to process asset condition data
- Web based IoT monitoring platform for easy and remote access to condition parameters

Improved cost transparency

- Maintenance spend planned, benchmarked and controlled
- Asset life-cycle cost managed based on reliable information
- Reduced fixed interval maintenance – only act when required

MV Switchgear

We monitor

Temperatures

- Busbar
- Breaker
- Cable Terminations

Partial Discharge detection

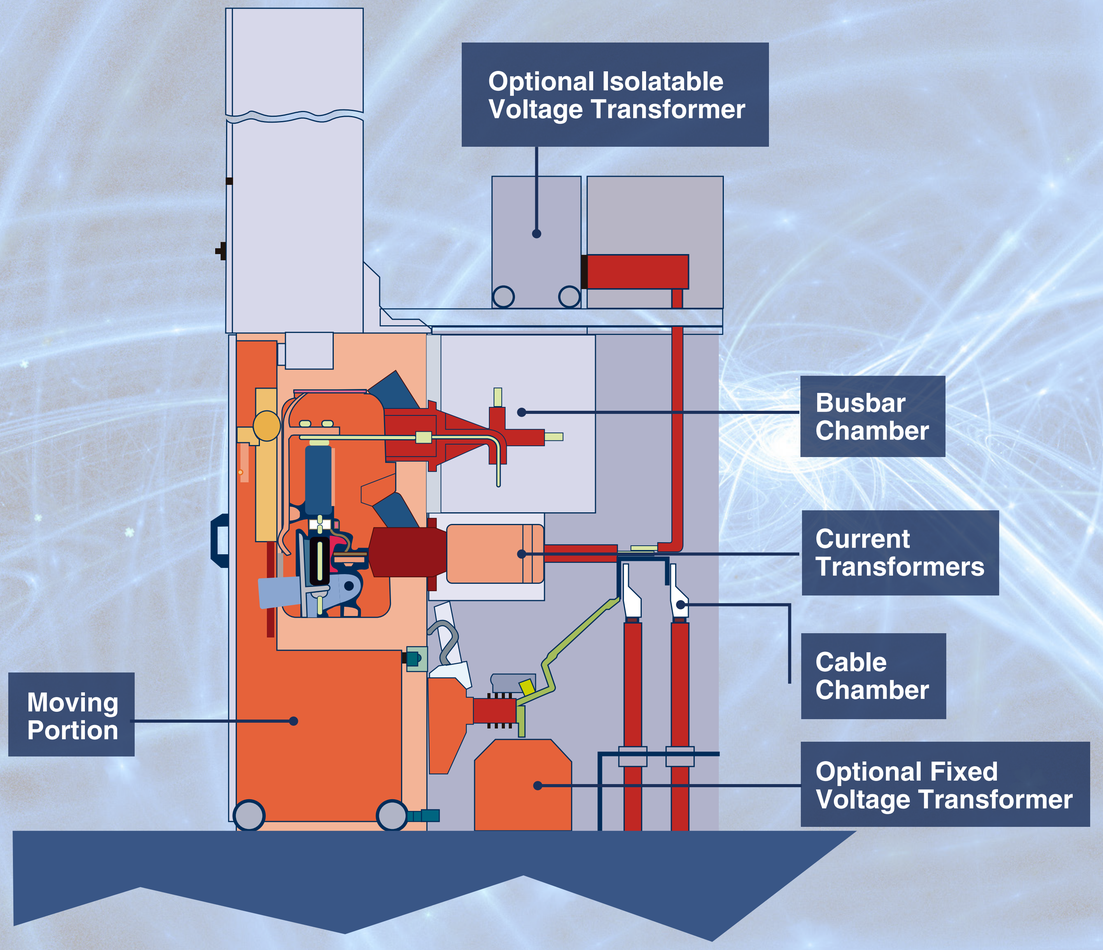
- Busbar
- Circuit Breaker
- Cables Terminations
- Cable and Joints
- Connected equipment

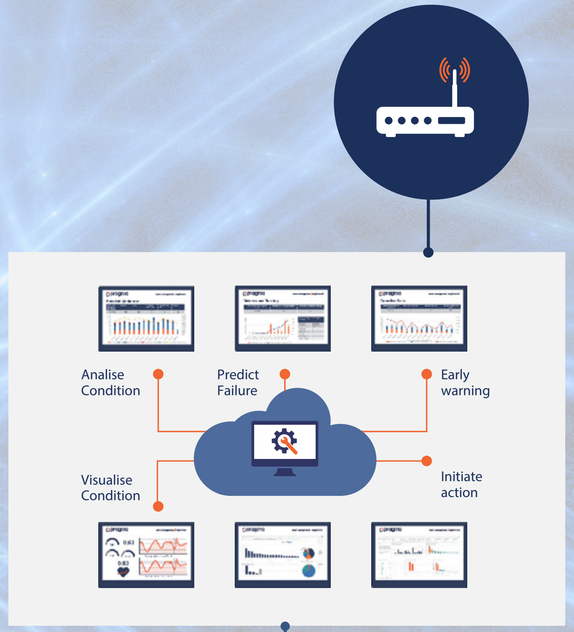
System Health

- Threshold and Alarm limits internal Self-Checking, with email and SMS communication

In-time Condition

- Monitoring, Trending and Alarms
- PD (electrical discharges)
- Load conditions
- Switching Cycles/ Operations
- Diagnostics and Expert recommendation
- Confirmation after restorative action
- Web-based access to information and reports





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