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:

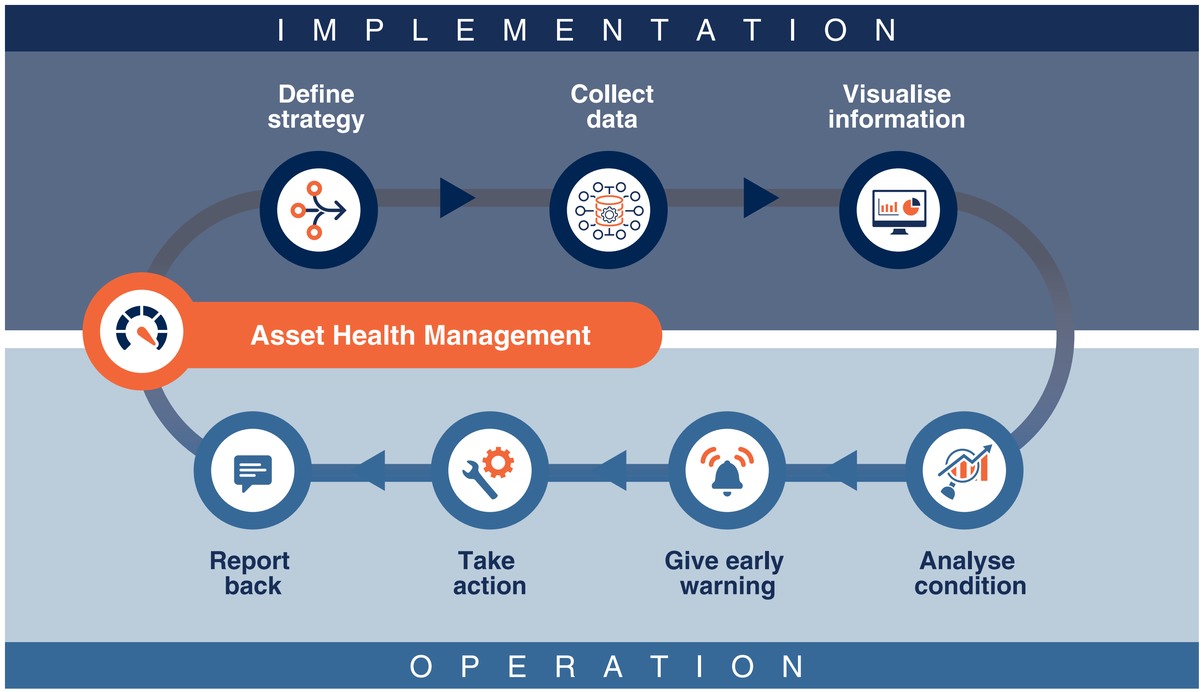
- Predictive work forecasting, use of the optimum
- Maintenance activity mix, and allowing owners to take
- Corrective action before failure occurs.

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 Generators

How can you mitigate the risk of your generators leaving your business without power when you need it most?

Pragma provides an engineering support service that provides:

- Improved generator availability
- Extended asset life
- Reduced business interruption
- Increased cost transparency and predictability
- Lower business risk

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Generator

Spectrum

Assets we cover

- Generators

Industries we serve

- Retail
- Facilities (Buildings)
- Distribution Centers
- Manufacturing Plants

"If generators fail to start when required, it can lead to a loss in trading time, impact perishable stock, reduce service delivery, and much more.

By continuously monitoring these assets, you have factual and real-time information about the readiness of these assets and are able to make quick decisions and act to ensure their availability when needed."

Challenges faced by industry

Generator reliability issues

- Controller not in Auto mode
- "Emergency Stop" activated
- Battery flat or stolen
- Switchgear not functioning correctly

Cost transparency and predictability

- Lack of historical budget information
- High cost of reactive maintenance
- Servicing not done when specified
- Overcharging for maintenance

Running out of fuel

- Fuel theft
- Insufficient monitoring of fuel levels

Impact of poor maintenance practices

- Statutory compliance work not tracked
- Remedial work not managed
- Fluid levels or leaks not monitored
- Maintenance work quality not confirmed
- Warranties not tracked or managed

Value add

Improved business sustainability

- Efficient implementation of digitalised maintenance processes
- Continuous monitoring of asset readiness
- Effective management and control of maintenance contractors
- Monitoring of fuel supply
- Critical information provided to enable agile decision making

Improved cost transparency

- Maintenance spend planned, benchmarked and controlled
- Fuel theft identified early
- Asset life-cycle cost managed based on reliable information

Improved generator availability

- Generator health monitored and early warning provided
- Reactive and predictive maintenance work identified and planned
- Contractors dispatched to perform work under agreed SLA
- Maintenance work inspected to ensure quality

Prioritised risk management

- Assurance provided that generator will be ready when needed
- Load testing done as required
- Services and remedial work scheduled and controlled
- Fuel level monitored and controlled
- Reduced human error
- Monitor operating parameters and react where limits are exceeded

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Generator

What we monitor

Operations Readiness

- Controllers in auto mode*
- “Emergency Stop” activated*
- Monitor running hours*
- Battery health*
- Battery theft alert*
- Alarms generated*

Coolant

- Coolant pressure
- Coolant levels
- Coolant temperature*

Generator operating conditions

- Voltage per phase
- Current per phase

Engine operating conditions

- Oil temperature
- Oil pressure
- Engine Speed

Fuel management

- Fuel level*
- Fuel consumption
- Fuel theft alert
- Re-fueling alert*

Mains power

- Voltage per phase
- Current per phase
- Frequency

*Minimum requirement to deliver the service

What we manage

Monitoring and response

- Monitor and record readings and alarms
- Plan and schedule maintenance
- Initiate re-fueling when fuel level reach trigger level

Maintenance

- Service scheduling
- Proactive inspections
- Load testing
- Close control of reactive maintenance
- Warranty management

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