The diffusion and application of asset management and reliability knowledge through shared, transparent, and innovative thinking.
Since 1988, Monition has provided bespoke services for process and manufacturing companies across the world. Working in close proximity with a plethora of industries ranging from Food Processing to Petrochemical refinement, Monition has in-depth knowledge of the challenges faced within process management and maintenance operations, meaning Monition have the expertise to deliver targeted services to achieve customers’ objectives.

The ever-increasing cost of maintenance and unacceptable high levels of machine down-time remains a serious disadvantage to the competitiveness of industry. Monition’s focused improvement projects have been designed for addressing these factors. With the development of smart technologies in reliability focused asset management we can explore new ways to drive down the cost of maintenance all the while increasing plant availability, improving maintenance and increasing efficiency.

Accredited to ISO 9001 quality standards, and completely independent, Monition delivers a totally-managed condition monitoring and reliability improvement service through a team of highly experienced field engineers and industry accredited analysts.
Monition Total Asset Care (M-TAC) is our vision of service, combining complementary technical methodologies with expertise and training, driving our customers ever closer towards total reliability of plants and machinery.
Our extensive Condition Monitoring service capabilities extends to the following:

- **Preliminary Review, CATS Survey**
- **Survey and Data Collection**
- **Analyse Reading, Trend, Interpret**
- **Review Findings and Act**

### Vibration Analysis
A predictive maintenance method which allows early problem detection in rotating machinery, such as: gearboxes, fans, shafts, motors, compressors, pumps, mixers, driers - in fact, almost any type of active machinery, either by VA survey, or by remote monitoring.

### Oil Condition Monitoring
Analysis of oil samples for the purpose of trending the wear, chemistry and contamination levels of in-service lubricating oil. This is with a view to maximise oil and equipment lifetimes, reduce lubrication expense, catch major faults and minimise downtime.

### Thermal Imaging
A versatile technique, used for identifying faulty/overheating components in mechanical equipment, carrying out electrical safety inspections and for completing building and energy-loss surveys to identify areas of heat loss and air leakage.

### Ultrasonic Testing
Including thickness testing to identify plate thickness flaws and defects, in-service lubrication effectiveness measurement, and energy loss surveys to identify gas and air leaks.

### Multi-Tech
Identifying the best combination of technologies in order to create a robust and dependable multi-technology condition monitoring programme.

**MONITION - FUTURE-PROOFING YOUR PRODUCTIVITY**
Reliability Services

Our maintenance services complement our condition monitoring, oil and energy services in offering a truly mutualistic approach to managing your assets.

Monition works to your current business plan, targets and strategies to offer the following maintenance services:

- **RCM**
  Reliability Centred Maintenance (RCM) is simply a structured, formalised methodology for determining the most effective maintenance policy, and subsequently quantifying the effect of maintenance on performance.

- **RCA**
  Root Cause Analysis (RCA) is a class of problem solving methods aimed at identifying the root causes of problems or incidents. ... While one follows the other, RCA is a completely separate process to Incident Management.

- **RPM**
  Reliability Performance Monitoring (RPM) is a tool which utilises your CMMS data to derive valuable maintenance performance information from technical downtime, to MTBF and MTTR. This provides a performance summary score which is, a weighted normalised score across 7 key internationally recognised maintenance performance KPI's. This is keyed in with a critically study output providing the team with a powerful means to push forward on problems that matter.

- **APT**
  An Asset Performance Tools (APT) programme ensures the efficient management of assets through proactive planning and application of a risk-based approach, rather than relying on a reactive approach to an asset that is failing or underperforming. This is with a view to perform target inspections and to time interventions to pre-empt disruptive and expensive distressing asset failures, rather than dictated by PM-based scheduling. Inspections are driven by delivering the greatest impact on risk reduction at least cost.

- **RAM**
  RAM Modelling is a tool which has the ability to effectively simulate operations of equipment/process line to find is full capability. This allows true simulation of configurations, failures and repairs of equipment. The RAM model typically includes physical components along with their configuration and maintenance strategy, this allows the outputs provided to calculate potential production losses and allows the process of fault elimination from a new or existing system.

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MONITION Reliability and Condition Monitoring Services
Monition lubrication services are underpinned by a philosophy of a scientifically derived and data-driven service, utilising the M-TAC Four-Phase Strategy for Lubrication:

1. **PHASE 1 - MEASURE-UP / DEVELOP**
   - Review Store Controls
   - Schedule Review
   - Select Lubricants
   - Application Review
   - Machine Condition “as is”
   - RPS

2. **PHASE 2 - TRACE AND ANALYSE**
   - Performance
   - RCA
   - PM Optimisation
   - Intelligent System Input
   - Lubrication Trials
     (Condition Based)

3. **PHASE 3 - APPRAISE / IMPLEMENT**
   - Supply Lubricants
   - Purge Systems
   - Implement New
     Schedule

4. **PHASE 4 - CONTROL AND OPTIMISE**
   - Best Practice Application
   - Control Adherence
   - Implement Audit Controls

Monition conduct detailed surveys to verify that the right lubricant is used for the right job. We achieve this by capturing fundamental parameters, environment detail and utilising a combination of experience and ultrasound technology to assess lubrication needs.

Best practice lubrication scheduling based on the foundation provided by the initial lubrication survey, ensuring lubrication with the correct product and at a suitable periodicity. The aim is to avoid over/under lubrication, linking with onsite PMs and CMMS where possible.

Using the principles of 5S as a basis for a world-class lubrication programme, paving the way for creating a well organised working environment with base operating standards, removing wastage and potential for contamination in the process.

Adopting a completely transparent approach to working with the onsite engineering team to ensure that best practice is followed. This is with a view to achieving a sustainable and embedded culture of continuous improvement education, key to a successful lubrication programme.

**MONITION · FUTURE-PROOFING YOUR PRODUCTIVITY**
Monition offers a professional, personalised and fully-independent fluid analysis testing service to help you make the most of your oil analysis program.

- Specialists in used lubricant analysis by ICML certified professional chemists.
- Choose from a huge range of techniques and test-slates.
- ASTM, ISO, IP and AdHoc methodologies available.
- Extended investigations through Monition’s Oil Forensics service.
- Specialists in component failure and root cause.
- Backed up by 30 years in the field of reliability.

**We Analyse**

- Oils
- Greases
- Coolants
- Fuels
- Unknowns
- Debris and Deposits
- Residues and Build-Up
- Filters and Swabs
- Much Much More

**AdHoc Testing**

ASTM, ISO, IP and AdHoc methodologies available – ensure both compliance and data integrity between labs. Ad-hoc testing is usually done to discover the issues or defects which cannot be found by following the formal process.

**Forensic Analysis**

In addition to a fully functional OCM laboratory for routine oil and fluid analysis and trending, Monition also offer advanced capabilities to investigate wear fragments and anomalous material recovered from lubricant samples.

**Lubricant Analysis**

Choose from a huge range of techniques and test-slates to get the testing service you need. This allows our clients to gain much more insight than might be available from routine oil testing to pinpoint the precise identity of wear particles and how they were formed.

**Root Cause Analysis**

Monition are specialists in component failure and root cause analysis. Root cause analysis (RCA) is a systematic process for identifying “root causes” of problems or events and an approach for responding to them.
Intellioil is a powerful, yet flexible, cloud-based lubricant condition management software system designed to store all of your oil analysis data in a single easy-to-access location, allowing utilisation of your data to the fullest.

Monition’s comprehensive web-based package provides advanced analytical tools to aid decision making to help advance your oil analysis regime to a world-class standard.

**Intellioil**

**OIL CONDITION MANAGEMENT MADE EASY**

**Plan and Organise**
A dedicated scheduler to plan and manage your oil samples. Allocate tasks to equipment and monitor sample progress through our sample tracking and feedback tools.

**Report and Analyse**
User-adjustable alarm sets and data filters which can be personalised with multiple analysis report formats to choose from. Mine your data with advanced charting tools.

**Manage Results**
A results inbox, trend monitoring tools, alarm setting capability, automated email alerts and database tree viewer combine to make your oil analysis programme effortless to manage.

**Interactive Dashboard**
Easy to use dashboards for high-level monitoring of assets, from a fleet/plant level, all the way down to individual components. Easily spot problematic areas.
A Monition Energy Loss Survey and Repair Programme is the fastest and most cost effective route for achieving rapid, verifiable savings by reducing wasted energy and CO₂ emissions, with payback typically attainable in under six months.

Using sophisticated acoustic detection equipment, Monition’s non-intrusive Ultrasonic Air-leakage survey can quickly identify leaks from all types of high pressurised pipework and systems, without any disruption to production or process.

A full survey of your building may reveal simple, low cost measures which will make a significant impact on your energy usage. This might include the use of thermal imaging to identify areas of heat loss and air leakage.

A Mechanical Thermography Survey enables you to prevent equipment failures and save hundreds of hours of wasted time in routine testing of components.

Monition’s steam and hot water energy Loss Surveys uses Thermography combined with the Energy tablet to identify & quantify Energy Losses from Steam Heating Pipelines, Refrigeration Pipelines, Boilers and Hot Water Systems.

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Ensuring equipment is correctly aligned, balanced and set-up in line with best practices from day one is key in ensuring your equipment keeps running effectively for longer.

Monition provides a range of specialist corrective services geared towards reducing operation costs and avoiding unplannedshutdowns, allowing our customers to repair minor issues before they become major problems.

**Motion Amplification**

Imagine a video recording where every pixel works like a vibration sensor. This is the essence of motion amplification, where high-speed video footage is used to detect subtle motion in rotating equipment and amplifies that motion to a level visible with the naked eye.

**Inspection**

An experienced mechanic can “feel” when a motor has a problem by placing his hand on the casing. Using vibration sensors, a specialist can identify which internal component is starting to wear and the magnitude of the problem.

**Fan Balancing**

Fan balancing is essential to improving efficiency and extending the life of your industrial fan. Vibration problems can be a result of increased production requirements or buildup of material on the impeller during normal use, which can cause industrial fans to become subject to increased vibration and imbalance.

**Shaft Alignment**

Monition’s on-site Shaft Alignment service ensures that rotating plant machinery, such as motors, pumps and gearboxes, are coupled together in perfect alignment to ensure a perfect rotational centre-line is achieved, mitigating potential for alignment related failures.

**Machine Health and Reliability Measurement**

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**MONITION · FUTURE-PROOFING YOUR PRODUCTIVITY**
By utilising VCT (video camera technology) coupled with our software and processing algorithms to extract meaningful data. This technology turns every pixel in the camera’s view into a sensor that is capable of measuring vibration or motion with high levels of accuracy.

The results lend themselves to a visualisation of the motion. We can measure and quantify any structural assets that a camera can see. Motion Amplification is a PVPA (proprietary video processing algorithm) that detects subtle motion then amplifies that motion to a level visible to the naked eye which enhances the understanding of the components and interrelationships creating the motion.

- **Visualise**: Motion Amplification is a proprietary video processing technique that detects subtle motion and then amplifies that motion to a level visible with the naked eye.

- **Communicate**: Enhance the understanding of the components and interrelationships creating the motion and provide a communication tool for technical and non-technical resources.

- **Measure**: Measure and quantify mechanical or structural assets that a camera can see with the same accuracy as a contacting displacement sensor.

- **Troubleshoot**: Filter your data and visualise motion at specific frequencies to find the real source of a problem and position your team to fix it.
Building on our vast experience of delivering high-quality training courses, our ambition is to enhance the technical and soft skills of maintenance engineering practitioners seeking new skills and experience.

With increasing demands on business, the contribution from its people increases. The ability to manage data, to analyse, to prevent and solve problems is crucial.

The British Institute of Non-Destructive Testing is an accredited certification body offering personnel and quality management systems assessment and certification against criteria set out in international and European standards through the PCN Certification Scheme.

Monition provide scheduled training sessions throughout the year – please visit our website www.monition.com for more details on upcoming course dates.

Monition offers a comprehensive range of training that covers every aspect of machine reliability - from the shop floor to the executive office.