

Industrial Reliability Solutions

MAXIMISE THE RELIABILITY OF YOUR ASSETS
SOLUTION SNAPSHOT



acoem

CREATING ENVIRONMENTS OF POSSIBILITY



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More than a solution provider

Acoem is your total reliability partner

Reliability issues can significantly affect industrial performance, maintenance costs and operational efficiency. More importantly, they can negatively impact the health and safety of your workforce and the environment.

Acoem Australasia is committed to adding value to your industrial maintenance processes and helping you harness the full potential of Industry 4.0 for your plant, factory or manufacturing facility with our targeted reliability consulting services.

BEYOND VIBRATION & ROTATING ASSETS

Although we have garnered a global reputation for the technological excellence of our predictive maintenance and condition monitoring systems in addition to AI-powered data analysis for rotating assets, Acoem is committed to extending its services beyond hardware and software, to offer you complete reliability solutions that are custom designed to meet your specific challenges now and in the future.

Industrial reliability software

Condition monitoring powered by AI for Industry 4.0

ACCUREX™

Automatic diagnosis software

Over the years, a number of condition monitoring equipment manufacturers have tried to design a vibration tool with built-in diagnostic software. No solution ever really met market expectations because of a lack of accuracy or the complexity of its use.

Thanks to its 30+ years of experience, Acoem has successfully introduced its latest Accurex™ automatic diagnosis software. This easy-to-use expert system

improves the efficiency of your condition monitoring program by:

- Helping expert users focus on critical cases, thanks to the confidence level indicator
- Empowering your maintenance team with accurate, automatic & instantaneous results.

Accurex™ automatic diagnosis comes embedded in the Eagle, MV-x, Falcon, SMC and the Machine Defender/Bearing Defender app portable devices.

NEST i4.0

Predictive maintenance software platform

Connect your digital factory with the Nest i4.0 software suite to harness the power of Acoem's Accurex™ Artificial Intelligence (AI) and create a fully integrated predictive maintenance ecosystem.

The only predictive maintenance software you will ever need, Nest i4.0 works seamlessly with Acoem's signature vibration measurement solutions – the Falcon portable analyser, the Eagle wireless sensor, and the almighty MV-x real-time monitoring system for precise vibration measurement data and automatic diagnostics.

WEBPORTAL

Your gateway to total machine maintenance management

A module of Nest i4.0, Acoem WebPortal is a fully web-based solution that adapts to your specific operational requirements and each user's individual needs, providing a customised and holistic overview of critical machinery in a single plant or an entire global network. Advanced functionality maximises access to actionable data collected by Acoem's range of signature portable, wireless and continuous monitoring instruments and apps. It also seamlessly integrates data from other data sources for trending purposes. View information from any fixed or mobile device with a responsive display and no software to download. Store your data on premises or in the cloud, access your tailored interface via a dedicated URL and leverage insightful monitoring data in real-time.







FEATURES

Supervision

The Nest i4.0 Supervision module offers customisable reports to present data to decision makers as well as vibration experts for one or multiple machines at one or multiple sites, no matter which device was used by the technician to collect the data.

Machine Health Matrix

The Nest i4.0 Machine Health Matrix allows you to easily identify the health of your machines in just one screen.

Harmonix™ Index

Full frequency high resolution merged spectrum. Quantifies harmonic families in spectra automatically.

Machine Setup

The Nest i4.0 Machine Setup module is the fastest available, using a simple drag and drop functionality to easily create virtually any machine using built-in or customised templates.

Shock Finder™ Index

Easy shock identification and diagnostic. Qualifies shock automatically in the time waveform.

Open Data Platform

Easily connect your assets health information to your ecosystem.

Accurex™ Matrix

Accurex™ Matrix (Patent Pending Technology) benefits include: accessing machine diagnostics at a glance (knowing what the detects are, where they are located, how important they are, and the confidence level), running speed detection alerts, and expert productivity reporting that will save you up to 50% on reporting time.

Bearing Defect™ Factor

Evaluates the roller/ ball bearing health automatically. Continuously grows during the bearing life cycle. Early fault detection.



Online remote condition monitoring

Unrivalled diagnostics for continuous real-time vibration monitoring of low-speed rotating assets

Continuous online condition-based monitoring makes evaluating the current status of your low-speed rotating equipment and detecting abnormalities easy and efficient in real time. Moreover, it gives you the right data to take corrective measures to prevent machine failures.

Preventative maintenance via continuous monitoring and event recording provides information on your equipment's response to normal and emergency conditions and helps you coordinate machine specifications and ratings, determine limits and optimise facility operations.

THE BENEFITS OF REAL-TIME MONITORING

Condition-based maintenance advocates continuous monitoring of machinery at periodic intervals, using various vibration indicators.

Acoem goes even further, with the capacity to monitor indicators in real time, ensuring:

- No monitoring event will be missed (no gaps in data acquisition)
- Constant responsiveness
- The slightest anomaly is detected in real time
- The ability to detect transient or spurious events
- Pre-trigger functions to enable raw signals from just prior to the event.

Acoem's real-time automatic diagnostic analysis of your vibration data is your key to eliminating operational risk.

At the forefront of Industry 4.0, Acoem's online condition monitoring equipment makes capturing data easier for low-speed rotating machines as well as those that operate under variable process conditions – providing a system that intuitively records the right data at the right time to reliably analyse and predict failures.



WIRELESS ONLINE SYSTEMS POWERING INDUSTRY 4.0

The evolution of vibration monitoring: from portable to wired to wireless

Prior to the introduction of a wireless vibration monitoring system, historically there were only two measuring options for condition monitoring of your equipment.

The first was a portable, manual method – which, at best, provided a single measurement each month because it involved going into the field to take measurements. It was also a safety risk.

The second was an online version with permanently installed wiring, which was generally expensive and labour intensive to install. Likewise, it was not always dependable due to placements in difficult locations and under potentially hazardous environmental conditions.

The introduction of wireless solutions by Acoem complements and significantly enhances these monitoring strategies, resulting in a more frequent set of data than portable measurement can produce.

Wireless solutions also facilitate a more accurate assessment of the health of your critical assets and prevent any unexpected failures that may occur between monthly portable measurements – ensuring that your machine will operate with maximum efficiency and reliability until its next scheduled maintenance.

Acoem's wireless remote diagnostic solutions are a game changer in terms of reliability strategy, seamlessly creating environments of possibility.

PORTABLE SYSTEMS

Our integrated range of smart vibration monitoring solutions

An accurate vibration analyser measures vibration as part of your thorough preventative maintenance program for critical machinery and equipment.

Acoem's range of vibration analysers also assesses your machine's axis of rotation, indicating if there is a rotating unbalance that can rectify during scheduled machine downtime.

Vibration diagnostics are critical to safeguarding your machinery – like electric motors, fans, pumps, compressors and giant rollers – from potential safety incidents or breakdowns.

With accurate vibration data captured by one of Acoem's portable or handheld vibration analysers, in addition to unbalance, you can alert your maintenance team to other impending defects, such as misalignment, bearings issues or even gear problems.

Easily determine the possibility of future damage before your equipment becomes unrepairable and avoid incurring replacement costs that will negatively impact your business.

The ability to monitor, diagnose and control your machinery's vibration levels quickly, accurately and safely using a single intuitive device is a major advantage of Acoem's range of predictive maintenance tools, apps, sensors and cloud-based software.

More importantly, these solutions allow you to make fast and immediate decisions to improve your production cycle, protect your equipment and avoid downtime and shutdowns that can impact your business.



VIBRATION MONITORING PRODUCTS:

Acoem Nest i4.0

Predictive maintenance software suite that uses AI and automatic diagnostics to assess asset health and schedule maintenance.



Acoem WebPortal

Predictive maintenance platform that uses AI and automatic diagnostics to leverage monitoring data and help make prioritised and informed maintenance decisions in real time.



Portable vibration monitoring

Acoem Bearing Defender

First level of bearing health assessment can be achieved by all levels of personnel.



Acoem Machine Defender

Wireless vibration measurement of industrial machinery with built-in automatic machine diagnostic Accurex™.



Acoem Falcon

Signature vibration measurement and analysis system that puts condition-based maintenance within the grasp of all users by using AI diagnosis.



Online vibration monitoring solutions

Acoem MV-x

Fully automated, online system to monitor data in real-time that can identify defects.



Acoem Eagle

Wireless monitoring system that automatically measures vibration in three directions as well as the bearing temperature for critical rotating machinery.



Acoem Sparrow

Compact, powerful and connected, an affordable, entry-level gateway to Acoem's condition monitoring ecosystem.





TRADITIONAL VERSUS ONLINE VIBRATION MONITORING

For slow shaft, low & variable speed machinery

One of the main challenges with performing condition monitoring on large assets with slow turning bearings is that the energy generated from a potential defect is often too weak to be detected by traditional vibration measurements.

Other difficulties include possible non-stationary operating conditions, low kinetic energy and increased distance from fault to transducer. These pose a critical problem for high value assets, such as drilling machinery, grinders, mining equipment, rollers, wind turbine rotors and helicopter swash plates.

An undetected bearing fault can shut down production, disrupt service, cause delays, reduce productivity or result in a safety hazard.

Reliable condition monitoring results for this type of equipment are only possible using high resolution data and advanced vibration analysis tools.

The right solution will also reduce operational and maintenance costs associated with bearing faults.

The range of Acoem online condition monitoring equipment, including remote sensors, software and automatic diagnostics, provides unrivalled fault detection at a very early stage – giving you the information you need to make immediate decisions.

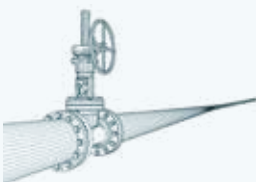
We have designed our online vibration systems specifically for continuous multi-channel monitoring of your critical rotating equipment.

All Acoem online condition monitoring equipment seamlessly connect with Nest i4.0 software to harness the power of Acoem's Accurex™ (AI) and create a fully-integrated predictive maintenance ecosystem. The latest diagnostics and maintenance recommendations will always be available in real time – no matter your location, anywhere worldwide.



Acoem Piping module

Works seamlessly with Acoem vibration solutions and applicable industry standard algorithms to ensure pipe integrity by delivering real-time data with key safety, efficiency, operational and productivity insights.



INDUSTRIAL RELIABILITY CORRECTIVE SOLUTIONS

Connected systems: AT series

Acoem AT-400 Ultimate

Acoem AT-400/D/T + Acoem T21 . Add capability to measure rectangular flatness. Use the M9 sensor as receiver.



Acoem AT-400

High-end dual-axis shaft alignment system with dual sweep for precise shaft rotation calculations and programs for horizontal, vertical, flatness and soft foot conditions.



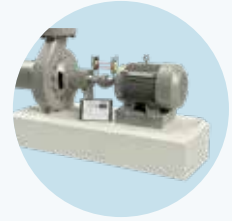
Acoem AT-300

Next-generation digital line laser system with extensive software functionality, streamlined user interface and intelligent sensor technology.



Acoem AT-200

A smart app-based alignment solution making it a tool for short response time between machine failures and corrective actions.



Classic systems

Acoem NXA Pro

Advanced functions and capability laser-based shaft alignment.



Acoem AT-100

App-based entry-level alignment tool with easy connectivity.



Acoem ECO and EVO

Entry-level horizontal laser-based shaft alignment.



Acoem NXA Ultimate

Ultimate instrument for alignment applications and geometric measurements.



Precision systems

Acoem AT-010 ROP

A pre-alignment tool with a multitude of applications with which you can determine if your machine is really suffering from a misalignment, or a pre-alignment condition, e.g. soft foot.



Acoem Level

Accurate measurement results for levelling machines or machine parts during installation.



Acoem RT-300

On-the-spot machine diagnostics with a complete precision shaft alignment tool and cloud connection.



Acoem OL2R

For flexible offline-to-running measurements of critical machines.



Acoem PAT II

The solution to all your belt alignment needs.



Acoem Offset

Precision alignment of Cardon shafts.



Industrial reliability services

Our personalised reliability consulting process

Before developing a thorough Industry 4.0 reliability improvement strategy, we assess how your current practices compare with reliability best practice.

The first step is to engage with you and learn about your business. Our expert technical team will visit your site or multiple locations to fully explore your organisation, from the boardroom to the factory floor.

Our total reliability appraisal includes a plant survey and gap/barrier analysis that ensures that we fully understand your priorities, pain points, risks and Key Performance Indicators (KPIs). We dig deeper to implement the right changes, liaising with OEMs and machine manufacturers to gain superior knowledge of all your systems.

This audit¹, conducted over a number of days, will help us identify and prioritise:

- What your critical assets are
- What challenges you are facing
- Which solutions can be delivered (conventional or customised)
- How implementing changes will benefit your business (impact on your KPIs).

The strategy we formulate and present to you will always be sustainable, consistent and scalable – with a prioritised action plan that will allow you to choose which elements to implement immediately.

We will also identify how you can further extend your planning in the future to consistently add value and make your reliability programs simpler and more efficient. We cover every aspect of your maintenance from infrastructure to staff competencies and governance to technology to make sure that all parts are aligned and can be integrated seamlessly into your operations.

Our focus is on optimising your assets, leveraging technology and providing you with a detailed road map to reliability success.

Acoem Advisor

Advisor is a single, cohesive reliability solution for managing and controlling your machinery's maintenance program.

Our hybrid, multi-technology approach identifies your priorities and provides expert advice based on accurate data – highlighting what actions need to be taken, when and for how long, to achieve the highest level of asset reliability. Don't wait until your equipment fails to gather actionable data.

Custom-designed and adapted to meet your specific industrial operations, Advisor is a condition-based maintenance strategy that seamlessly integrates into your organisation's existing maintenance program to increase asset integrity and productivity.

Powered by a tailored selection of user-friendly wireless, portable, offline and online data collection tools, combined with instantaneous access to your data and Accurex AI diagnoses via the Advisor Dashboard, Advisor factors in every aspect of your operations – from security protocols to communication.



¹ Terms of audit are to be communicated & agreed to prior to engagement to ensure a clear understanding of responsibilities of the parties, the objectives of the audit, access to information and the reports to be provided.

Partner with Acoem

Achieve measurable & quantifiable benefits

- Greater efficiencies
- Lowered environmental impact
- Enhanced flexibility
- Upskilled staff
- Reduced costs
- Improved safety
- Minimised risk
- Ability to quantify the value add.

We work at sites and locations across Australia, New Zealand and Asia-Pacific, within a variety of sectors some of which include:

- Mining and Minerals
- Manufacturing
- Medical and Pharmaceuticals
- Energy Resources
- Energy Generation
- Airports
- Renewable Energy
- Renewable Power
- Paper and Pulp
- Maritime
- Food and Beverage Processing
- Mechanical Services
- Bulk Handling
- Steel
- Heating, Ventilation and Air Conditioning (HVAC).
- Oil and Gas
- Water Treatment



About Acoem

At Acoem, we **create environments of possibility** – helping organisations find the right balance between progress and preservation – safeguarding businesses and assets, and maximising opportunities while conserving the planet’s resources. We deliver unrivalled, interoperable AI-powered sensors and ecosystems that empower our customers to make enlightened decisions based on accurate information.

Together with 220 distributors, our 850+ employees work across 28 offices, 6 manufacturing facilities and 5 R&D centres in 9 countries, to provide trusted, holistic data solutions for customers worldwide.

Acoem links possibilities with protection.

For more information visit
acoem.com/australasia/industrial-reliability



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