

# CONDITIONING MONITORING TECHNIQUES

*The History and Evolution of Condition Monitoring Techniques*

## FROM THE DAWN OF INDUSTRIALIZATION AND BEYOND

### THE EARLY YEARS

#### OUR SENSES



Early on, condition monitoring techniques primarily involved using our senses. This is still utilized today.

### A MAJOR LEAP

#### SAMPLING AND HANDHELD DEVICES

Drawing oil samples and the use of handheld sensors for vibration, ultrasound and temperature.



### BEYOND THE HANDHELD SENSORS



#### FIXED SENSORS

Permanently mounted sensors dramatically improved data consistency and accuracy.

### A BIG ADVANCEMENT

#### WIRELESS SENSORS

Wireless sensors provide high quality data several times a day. In the beginning, cost was very high and this limited installation to critical assets with expensive downtime.



### A STEP FURTHER

#### WIRELESS COMMUNICATION



Numerous wireless communication protocols come to the market. They play a significant role in reducing the high cost of wireless condition monitoring solutions, allowing for use across more assets. This includes assets in unsafe and hard to reach or hazardous locations.

### ACTIONABLE INFORMATION

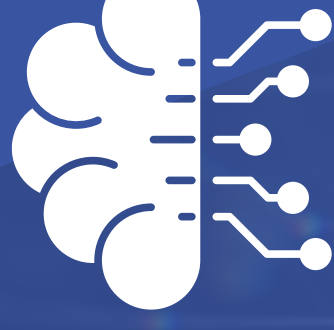
#### CONDITION MONITORING SOFTWARE

Condition monitoring software advances the Industry 4.0 revolution, allowing industrial plants to store the condition monitoring data that is being collected multiple times a day and to turn it into actionable information.



### MASSIVE FAULT DATA

#### BIG DATA



The advancement of technology to capture months and years of fault information, to find insights into machinery health and reliability problems.

Big Data is defined by the three V's: more variety, more volume, and more velocity.

### ACTIONABLE INTELLIGENCE

#### DATA INTEGRATION

Data integration involves passing condition monitoring data along to the plant's Computerized Maintenance Management Systems (CMMS) or other advanced applications including AI, predictive maintenance and asset management platforms.



### END-TO-END SOLUTION

#### TURNKEY WIRELESS CONDITION MONITORING



Solution providers, further advancing condition monitoring technology, with a select few providing an end-to-end solution that includes designing, installing, connecting, monitoring, alerting, and data integration.

