NATIONAL INSTRUMENTS

Hear Failure From Miles Away

TECH**INSIGHT** | Condition Monitoring

Read this TECH**INSIGHT** to see (and hear) how NI InsightCM™ software for machine monitoring helps experts hear vibration problems from anywhere with web access just as clearly as if they were on the plant floor.

Duke Energy tackles its 66,000 monthly manual routes using Industrial IoT technology.

READ HOW

Learn more about InsightCM.

LEARN MORE

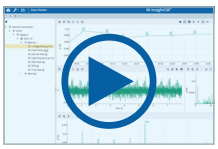
Try InsighCM live and online.

TRY IT NOW

It's difficult to replace the value of machine analysts walking the plant floor using their human senses to detect problems. Moving that expertise into artificial intelligence (AI) will take a while, but you can move sensor data today.

What you hear when walking on the plant floor is the vibration of machine components transmitted through air. They may be vibrating only fractions of an inch, but it's enough to push air at a frequency the human ear can pick up. New continuous monitoring (CM) software packages, like InsightCM from NI, take the full waveform spectrum from the accelerometer, digitize it, and send it through the web to your laptop or phone. There, it's converted back to vibrations you can hear through a speaker. IoT technologies are making it easier for reliability engineers to spend more time analyzing and less time managing instrumentation or collecting data.

The following two recordings are from the same equipment. A standard machine rotor kit including a bearing with a known inner-race fault was set up in a lab. The first recording was taken using a smartphone from about four feet away. The second recording is from exporting the waveform using InsightCM. For the intent of hearing the bearings impacting the inner-race fault, they sound the same.



Microphone recording made near machine

WAV file converted from accelerometer data

An added benefit of starting with the data from an accelerometer is that the sound is filtered to that one specific point, meaning you don't have to strain to hear machine faults through the ambient noise on the factory floor.

This is just one tool helping maintenance teams keep their businesses running with better productivity. Routes have long been the standard for collecting data from only the most critical machines. Today, more maintenance teams are using technology to connect equipment and automate asset health data collection. Automated measurements mean engineers spend less time walking around, collecting data, and getting the right instrument case in front of the right machine and more time analyzing data and making decisions that impact operational availability.

In Partnership with intel IoT Solutions Alliance

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