

The **heavy-duty industry** has been using the vibration signal collected from the rotor machines to manage mechanical operational quality. Most **Petrochemical plants, Oil refineries, and Power stations** have their own maintenance staff dedicated to maintenance and repair. Among those works, it's crucial to collect and analyze vibration signals on a periodic basis. Operators, adopting inspection instruments, measure in-situ vibration raw data of rotating machinery. Then through the data analysis process, they are able to know the operational condition of the target object and determine whether there's an anomaly or not.



However, there are way too many rotor machines to be monitored for the above-said scenarios considering the realistic allocation of human force and professional analysts. It's always been an unsolved problem when talking about the effectiveness and large extensive inspection of the majority of the rotating machines in plants.

A minor unplanned failure can cause a decline in production, an unsatisfactory yield rate, and even worse, an economic loss. On the other hand, a severe rotor shutdown, for example, on a cooling tower or chemical air extraction equipment, can lead to a devastating safety issue.



RM-IO-B | Predictive Maintenance Solution
Rotor Online Monitoring

LoRa LPWAN

- Rotor Quality
- Vibration Value Threshold
- Temp. Monitor
- AI Degradation Inference

In recent years, benefiting from the rapid development of IoT tech, each heavy-duty industry has been deploying a long-time, continuous monitoring system for machines' operational conditions. **RM-IO-B is an online monitoring solution, based on IoT structure, meanwhile, integrating rotors vibration characteristics as well as regulation-based criteria.**



ISO10816 / 20816 / 2372 norms



Spots and data of each sensor on the machine

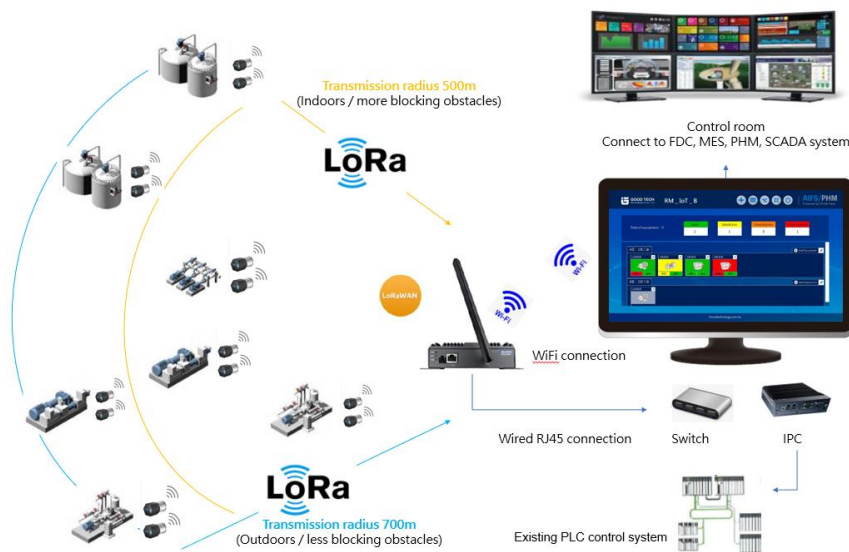


Trend visualization



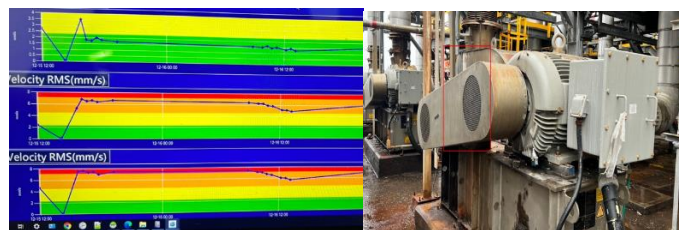
AI degradation trend

RM-IOT is capable of **highly intensive** and **auto-vibration key parameters measurement** for the rotating machinery. To cope with a great number of rotors, the system is designed for **scalability** to expand measured nodes at any time and for a clear **health hierarchy of Good, Normal, Alert, and Danger**. Through real-time conditional info on the assets, users can accurately arrange future maintenance and repair schedules, meanwhile, dramatically decreasing unscheduled stoppage, increasing stable production quality and output, yet effectively avoiding safety risks at work.



You will find, from the following, the real case that RM-IOT stopped the destroying damage in the petrochemical scenario:

- Under the circumstances of alarm notification, users check for the vibration condition and realize that machine is in danger.



- Send staff for onsite checking and witness the smoke and spark. Should immediately stop the machine, unplug and inject cold water to cool it to prevent a bigger loss and possible safety concern to happen.

