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Development of a Vibration Data Visualization System

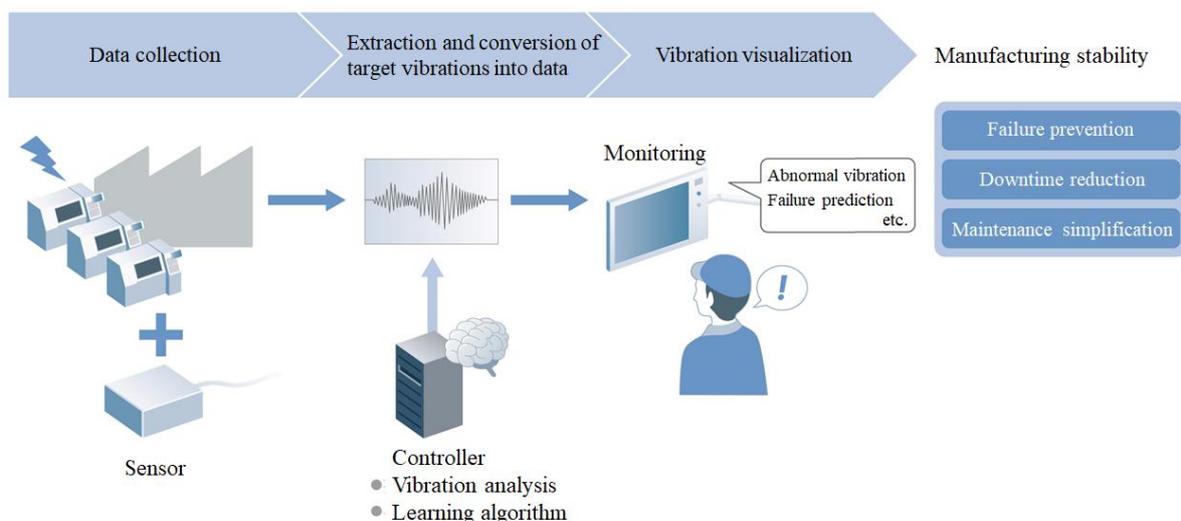
- With an Eye towards Deployment in a Multitude of Applications -

RICOH Industrial Solutions Inc. (President: Katsunori Nakata) have developed a sensing system that visualizes vibrations emitted by equipment and machines.

By combining RICOH's uniquely developed sensors with data analyzing technology, we have made it possible to extract the data necessary to detect problems with both equipment and machines. Users can understand conditions and features that have not previously been understood, such as abnormal manufacturing equipment vibration and sudden shocks affecting product quality, as well as confirming equipment soundness, in real time in a numeric form. This development will find use not only in factories but in a wide variety of other applications, such as monitoring the condition of public transportation and infrastructure devices with continuous operation. The system provides stable equipment operation by preventing equipment failure, reducing downtime, and simplifying maintenance, whilst providing newly added value in preventing future maintenance.

This was made possible by combining RICOH Group's vibration analyzing technology, AI algorithms and industrial device's embedded controller technology.

RICOH Industrial Solutions Inc. will continue to further develop technology in anticipation of the increase in business activity centered around systems for visualizing vibration data. In doing so, we will provide optimal, easy to use systems not only for device manufacturers, but also for device users.



Technological Superiority

1. Unique vibration and acoustic analysis technology that allows users to extract only the components they require

Adapts RICOH's unique analysis technology to extract only the components necessary from the signal buried amongst disturbances and noise. This technology is used to diagnose and detect the various vibration and acoustic data emitted by equipment and machines.

2. AI programming that optimizes data for users

The program generates a useful score for users from the data extracted from vibrations and presents it in a metric form or a message from which valuable information can be gained without users having to directly analyze the vibration data.

3. Controller technology whose high reliability contributes to better productivity and quality

The high quality system is adept at a long term stability of supply and a wide range of customization capabilities. It is used in Factory Automation, finance, health care, infrastructure, and a wide range of related fields. We've adapted technology cultivated over many years of our embedded controller business to this system to provide a highly reliable product.

| About Ricoh |

Ricoh is empowering digital workplaces using innovative technologies and services enabling individuals to work smarter. For more than 80 years, Ricoh has been driving innovation and is a leading provider of document management solutions, IT services, commercial and industrial printing, digital cameras, and industrial systems.

Headquartered in Tokyo, Ricoh Group operates in approximately 200 countries and regions. In the financial year ended March 2017, Ricoh Group had worldwide sales of 2,028 billion yen (approx. 18.2 billion USD).

For further information, please visit www.ricoh.com

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