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Mitsubishi Electric Develops AI-based Diagnostic Technology
AI reduces equipment downtime and improves productivity in factories and plants

TOKYO, July 8, 2019 – Mitsubishi Electric Corporation (TOKYO: 6503) announced today that it has developed what is believed to be the world's first diagnostic technology based on the company's proprietary Maisart®* artificial intelligence (AI) technology that uses machine learning to analyze sensor data and then generate a model of a production machine's transition between various operational states, thereby enabling the technology to detect machine abnormalities rapidly and accurately for improved productivity in factories and plants.

*Mitsubishi Electric's AI creates the State-of-the-ART in technology
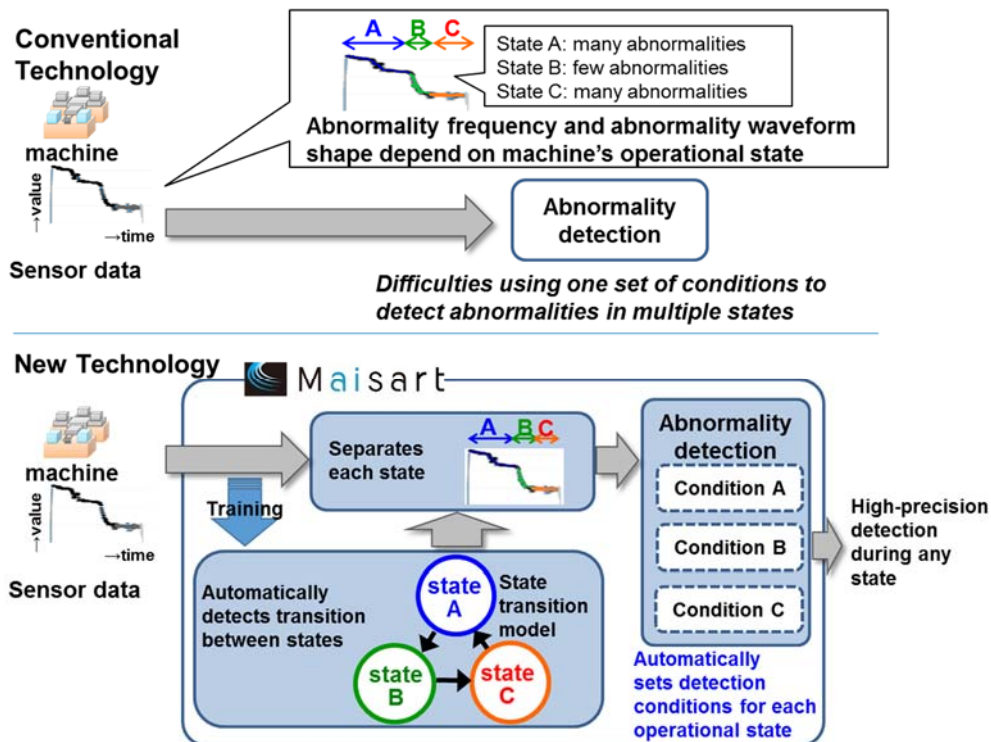
Conventional and new abnormality-detection technologies

Key Features

1) *Uses AI for accurate detection of machine abnormalities based on model of operational transitions*
    - Unlike conventional diagnostic technology, which uses the same conditions for abnormality detection regardless of a machine's current operational state, the new AI technology analyzes sensor data to automatically generate a model of the machine's transition between various operational states, and then uses the model to set optimal conditions for detecting abnormalities during each operation.
    - Signs of machinery failure can be detected accurately prior to actual breakdowns, helping to reduce the labor associated with performing maintenance and dealing with downtime in factories and plants.

2) *AI simplifies introduction of abnormality-detection systems*
    - The new AI technology eliminates complicated manual settings to simplify the introduction of abnormality-detection systems.

Background

The market for predictive maintenance services in Japan is expanding rapidly by 41.5 percent per year and is expected to reach 44.5 billion yen in fiscal 2024, according to MIC Research Institute Ltd. Also, the pattern of maintenance is shifting from time-based periodic maintenance to condition-based situational maintenance. As such, the demand for high-accuracy abnormality-detection technologies is growing. However, the ways that machines are being used is continuously changing, so advance signs of machine abnormalities also are changing according to each machine's usage and current state of operation. Mitsubishi Electric's new AI technology automatically builds a model of a machine's transition between various operational states, which it then uses to apply optimal conditions for detecting abnormalities during each operational state, thereby enabling the accurate detection of any impending machine failure.

About Maisart

Maisart encompasses Mitsubishi Electric's proprietary artificial intelligence (AI) technology, including its compact AI, automated design deep-learning algorithm and extra-efficient smart-learning AI. Maisart is an abbreviation for "Mitsubishi Electric's AI creates the State-of-the-ART in technology." Under the corporate axiom "Original AI technology makes everything smart," the company is leveraging original AI technology and edge computing to make devices smarter and life more secure, intuitive and convenient.

Patents

Pending patents for the technologies announced in this news release number two in Japan and two outside of Japan.

Maisart is a registered trademark of Mitsubishi Electric Corporation.

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About Mitsubishi Electric Corporation
With nearly 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded a revenue of 4,519.9 billion yen (US$ 40.7 billion*) in the fiscal year ended March 31, 2019. For more information visit:
www.MitsubishiElectric.com
*At an exchange rate of 111 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2019