March 29, 2019
THK CO., LTD.

THK to Exhibit "OMNIedge" IoT Service for the Manufacturing Industry at HANNOVER MESSE

Keeping Lines Running and Improving Productivity with Predictive Failure Detection

THK CO., LTD. ("THK," President and CEO: Akihiro Teramachi) will be exhibiting at HANNOVER MESSE, held April 1–5, 2019, in Hannover, Germany.

THK's booth will feature its mainstay LM Guides, ball screws, and electric actuators. In addition, a special area of the booth will be reserved for the trade show debut of OMNIedge, a simple, secure, and global predictive failure detection application for the manufacturing industry. A demonstration of this new service will be provided. As the service is scheduled to launch in the European market in during 2020, THK will begin seeking customers to participate in a free trial this year.

Challenges Facing the Manufacturing Industry

With regard to the manufacturing industry in developed countries, the aging of society and other factors have led to turnover, raising concerns about worsening labor shortages. As a result, there is a greater need for automating regular inspections of equipment, which currently rely on manual labor, and creating a system for predictive failure detection. Manufacturers of production equipment are independently attempting to collect data from control devices and visualize the condition of their equipment.

However, even when they can detect overall issues with the machine, those manufacturers must rely on the instincts of experienced maintenance personnel to identify which component has failed. In addition, even when a company can obtain data from each component, they are often unable to predict failures because they cannot analyze the data without possessing specialized knowledge about those components.

Furthermore, companies are often unable to install an IoT system that visualizes machine conditions because of the specialized IT knowledge required to connect the system to the factory's network, as well as the high initial and operating costs.

The THK SENSING SYSTEM

To solve the issues facing manufacturing, THK developed the "THK SENSING SYSTEM." Through the use of sensors, which can be installed on current equipment, this technology collects and visualizes information about the condition of LM Guides* and ball screws, which are critical machine components.

Because this technology directly measures and analyzes the condition of a critical component that can lead to malfunctions, rather than the entire machine, it makes it possible to identify the damaged part.

THK's New IoT Service for the Manufacturing Industry: OMNIedge

Predictive failure detection will be made possible using THK's new OMNIedge service to take data collected by the THK SENSING SYSTEM and a Cisco edge computing router or a smartphone and gather it securely through DOCOMO's mobile network. THK can provide an application that will enable the diagnosis of an LM Guide's or ball screw's condition and the predictive maintenance of equipment by using data collected through the THK SENSING SYSTEM.

The greatest feature of OMNIedge is that it automates the design and setup work necessary for introducing the IoT, including data collection, storage, and analysis. As a result, this system can be quickly and easily installed even in manufacturing facilities without IT staff. Total support is also available for maintenance and operation, which reduces the burden on customers.

*LM Guides, or linear motion guides, enable the linear motion of machines through rolling motion.

THK is the manufacturer with the leading market share worldwide in linear motion guides (according to a 2017 THK study).
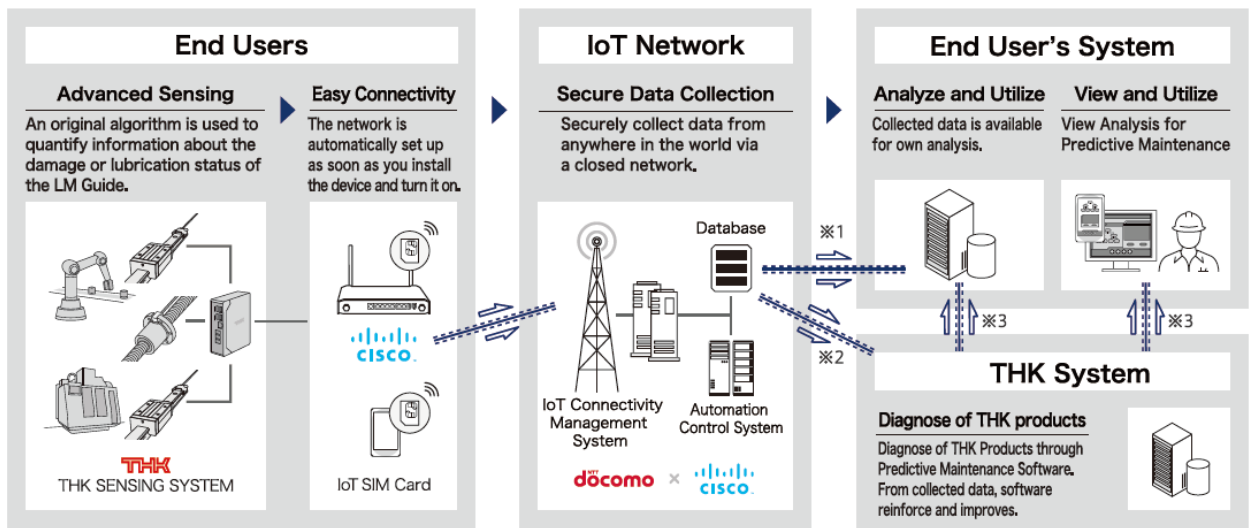
Overview of OMNIedge

About the Service

"OMNIedge" is a package service that takes information collected by the THK SENSING SYSTEM, gathers it through a Cisco edge computing router or smartphone, and sends it through DOCOMO's mobile network to a THK data center for monitoring.
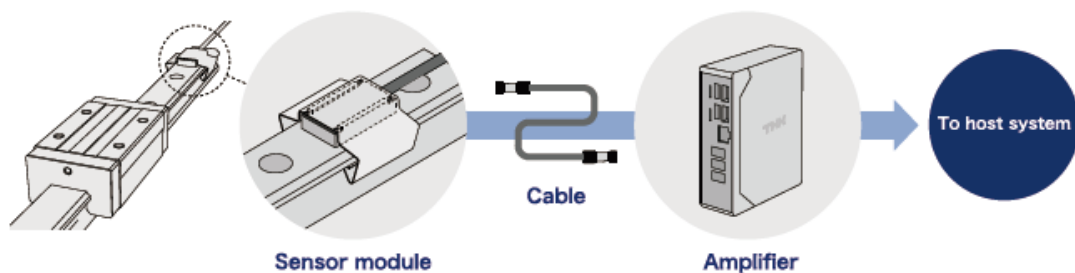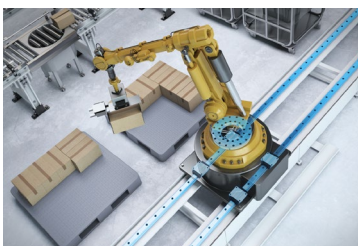
OMNIedge Website

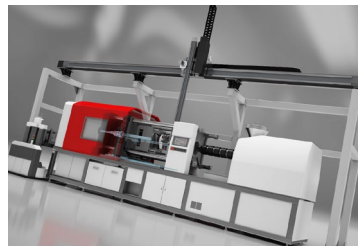http://www.thk.com/omniedge/en/

OMNIedge
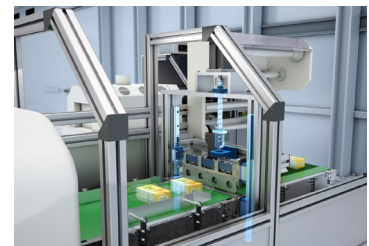

THK SENSING SYSTEM

Example Industry and Equipment Applications*

Transfer robots

Injection molding machines

Automatic wrapping machines

*OMNIedge will be made available for various other types of general industrial equipment.

What Each Corporation Does

THK	• Provides OMNIedge service • Develops IoT products • Analyzes collected data • Provides consulting about sensor devices for components suited for data collection
NTT docomo	• Provides expertise and service related to LTE and other wireless communications • Provides network service for the centralized collection of IoT data
CISCO	• Provides consulting and develops systems for manufacturing industry IoT networks • Provides related products, such as edge computing routers and automatic control systems

Corporate Outlines

THK	
Company Name	THK CO., LTD.
President/CEO	Akihiro Teramachi, President and CEO
Location	2-12-10 Shibaura, Minato-ku, Tokyo
Capital	3,140 million USD （as of December 31, 2018)
Establishment	April 10, 1971
Number of Employees	3,773 (Consolidated total: 13,478) (as of December 31, 2018)
Main Operations	• Manufacture and sale of various bearings and machine components • Manufacture and sale of machine tools and their parts • Manufacture and sale of automotive, bicycle, and transportation parts • Manufacture and sale of industrial robots and related parts, etc.

NTT DOCOMO	
Company Name	NTT DOCOMO, INC.
President/CEO	Kazuhiro Yoshizawa, President and Chief Executive Officer
Location	Sanno Park Tower, 2-11-1 Nagata, Chiyoda-ku, Tokyo
Capital	8,616 million USD (as of March 31, 2017)
Establishment	July 1, 1992
Number of Employees	7,767 (Consolidated total: 27,464) (as of March 31, 2018)
Main Operations	• Telecommunications business • Smart life business • Other businesses

Cisco	
Company Name	Cisco Systems, Inc.
President/CEO	Dave West, President and General Manager
Location	Midtown Tower Building, 9-7-1 Akasaka, Minato-ku, Tokyo
Capital	41 million USD
Establishment	May 22, 1992
Number of Employees	1,180 (as of August 2018)
Main Operations	Sale of network systems and solutions and provision of related services