

May 18, 2017  
MinebeaMitsumi Inc.  
RICOH Co., Ltd.

## MinebeaMitsumi and RICOH Conclude a Joint Business Development Agreement for a Bed Sensor System

High precision monitoring of biometric information  
such as the weight, body movement and respiratory status

MinebeaMitsumi Inc. (MinebeaMitsumi; Yoshihisa Kainuma, Representative Director, President and Chief Executive Officer) and RICOH Co., Ltd. (RICOH; Yoshinori Yamashita, President and CEO) have concluded a joint business development agreement to commercialize a bed sensor system for monitoring biometric information. It provides a bed sensor system and information service with high added-value by linking MinebeaMitsumi sensor module technology and RICOH Group know-how on systemization technology, production, sales and maintenance support. MinebeaMitsumi and RICOH have concluded this agreement toward commercialization for the nursing care market this fiscal year, with the aim of realizing a business scale of 3 billion yen (nursing care facilities in Japan only) by FY2020.

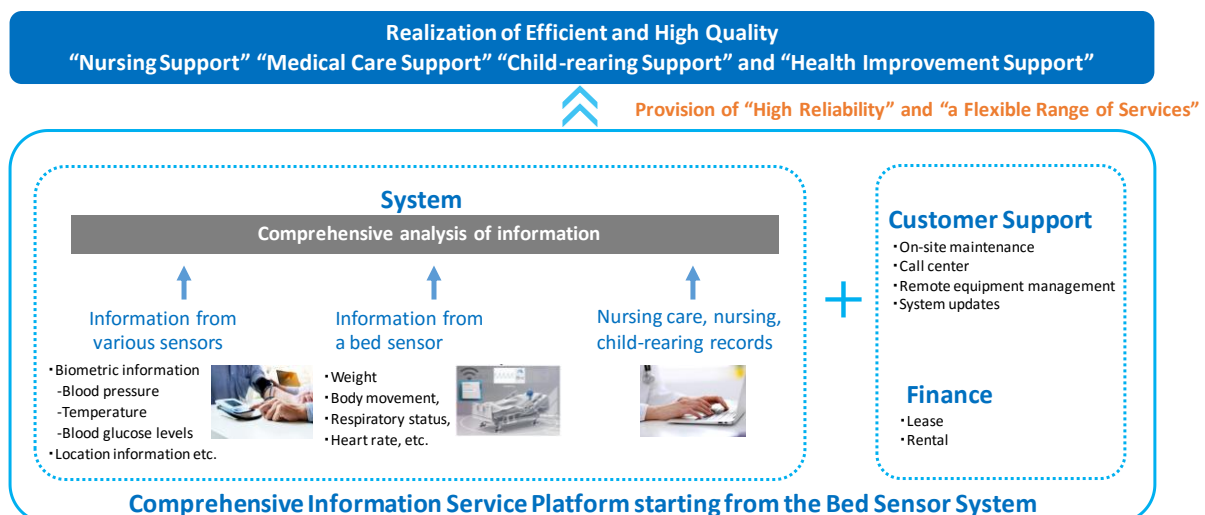
In the first phase of the project, a monitoring platform to watch over elderly persons will be built through cooperating with various nursing systems in the nursing market. In the second phase, in addition to making it possible to provide heart rate information, we are considering to utilize AI etc., in the nursing and medical markets. In the third phase, we plan to expand the business to an integrated information service platform that utilizes various sensors and position measuring information in nursing care, medical care, child-rearing and other markets.

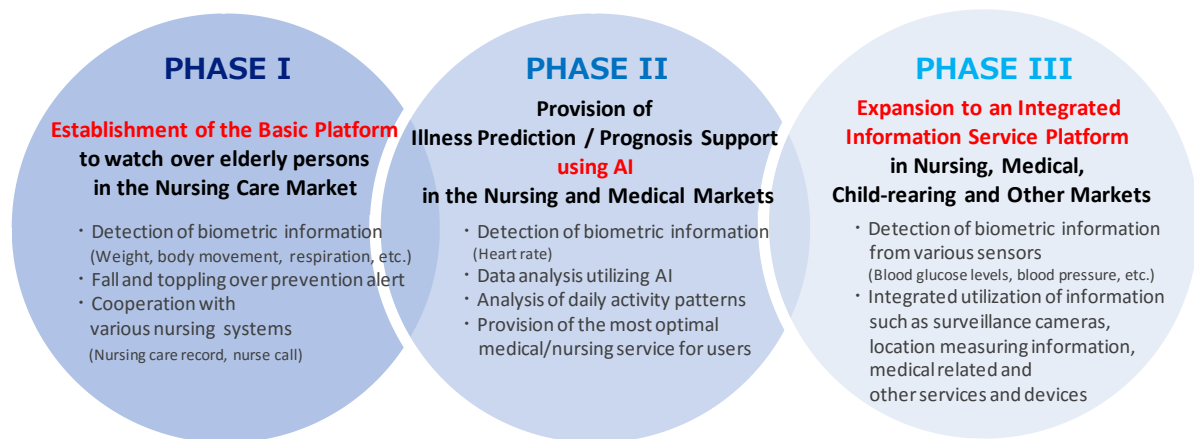
This bed sensor system provided in the first phase is a high precision monitoring system using sensors that can be retro-fitted onto an existing bed, and enables contactless and non-invasive\*1 monitoring of biometric information such as the weight\*2, body movement and respiratory status of the person in the bed. It makes possible to “monitor (as a safety measure against falls or toppling over) a person in the nursing/medical care site”, “detect anomalies in respiratory status in the nursing/medical care site” and “reduce a burden of measurement and recording work, such as the body weight measurement.” We are aiming to have the full-scale development in fiscal year 2018.

\*1 Not accompanied by pain or discomfort.

\*2 Reference weight.

[The Vision of this Joint Business Development]





With the aim of expanding the business area of high precision load sensors, MinebeaMitsumi has been developing its biometric information monitoring system jointly with Chiba University Graduate School of Medicine since 2015. MinebeaMitsumi enters the nursing care market, where demand is anticipated to expand significantly in Japan in the medium- to long-term, based on the judgment that this system can contribute to reducing the work burden of nursing care institutions and staffs, as well as providing safety and security to users such as patients and elderly persons. In future, the MinebeaMitsumi Group intends to improve algorithms and sensors and utilize the Group resources to scale up to provide products that play a central role in MinebeaMitsumi's vision for the IoT (Internet of Things) market.

RICOH decided the value proposition to offer to its customers as "EMPOWERING DIGITAL WORKPLACES" and announced it this April. The value focuses to expand from general offices toward workplaces, and society and support customers' knowledge creation by digitizing work and transforming data into intelligence. In this business starting from the bed sensor system, data obtained from sensors are analyzed and converted into intelligence and we will develop and offer value to support customers' problem solving. In the medical field, RICOH entered into the indoor (under non GPS environment) location information business in June 2016. In the future, new business improvement will be offered by grasping the movement of medical staffs and patients as data and making analysis of the accumulated location information together with additional information.

In this way, the two companies' respective strengths are in a mutually complementary relationship: the technology of MinebeaMitsumi with high precision sensing devices to provide biometric information as the analysis result of signal, while the technology of RICOH efficiently and appropriately processes this information and delivers it to users. In addition, RICOH also possesses the know-how and resources fostered over many years to realize the highly reliable customer support that is required for providing critical information services concerning human life.

This platform starting from the bed sensor system, which will be developed with this joint business development agreement, contributes to realizing a high-level monitoring service by providing a fall/toppling over alert and services to provision biometric information cooperating with nursing care record systems and nurse call. In future, we expect to enter into the medical market and provide heart rate information. With utilization of technologies such as AI, we will develop a business that provides the most optimal medical/nursing service for users and support prediction/prognosis of illness which can be obtained from analysis of daily activity patterns.

In addition to the bed sensor system, we plan to expand the business into an integrated information service platform by comprehensively utilizing biometric information such as blood glucose levels and blood pressure, etc., surveillance cameras, location measuring information, and also information of other medical-related services and devices. We will contribute to “maintenance of Quality of Life (QOL)” and “extension of healthy life expectancy”.

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**About the MinebeaMitsumi Group:**

On Jan. 27, 2017, Minebea Co. Ltd., whose business focuses on machined components such as bearings and electronics devices such as motors and sensors, etc., made Mitsumi Electric Co. Ltd., an electronic devices and components manufacturer, a wholly-owned subsidiary to integrate our operations. We changed our company name to MinebeaMitsumi Inc. and embarked on a new start.

By this integration, MinebeaMitsumi was reborn as a comprehensive precision components manufacturer with 59 production bases in 16 countries worldwide and manpower of over 100,000 employees. (MinebeaMitsumi Group consolidated net sales for the fiscal year ended March 31, 2017 was 638,926 million yen).

As provider of Electro Mechanics Solutions™ which contribute to the IoT (Internet of Things) era, MinebeaMitsumi combines a broad range of advanced technologies—from ultra precision machining technologies such as bearings, to motors, sensors, semiconductors, and wireless technologies—to create new value with "difference" beyond the realm of common sense.

For further information, please visit [www.minebeamitsumi.com](http://www.minebeamitsumi.com)

\* “Electro Mechanics Solutions” is a registered trademark in Japan of MinebeaMitsumi Inc.  
Its registration No. is 5322479.

**About RICOH:**

Ricoh is a global technology company that has been transforming the way people work for more than 80 years. Under its corporate tagline – *imagine. change.* – Ricoh continues to empower companies and individuals with services and technologies that inspire innovation, enhance sustainability and boost business growth. These include document management systems, IT services, production print solutions, visual communications systems, 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](http://www.ricoh.com)