

# News Release

## **Hitachi Acquires Kyoto Robotics, a Start-up Developing Intelligent Robotic Systems**

*The acquisition enables Hitachi to provide one-stop and speedy robotic systems integration using unique, advanced technology for an entire automated line in the fields of logistics and Factory Automation*



Intelligent robotic system of Kyoto Robotics

**Tokyo, April 8, 2021** —Hitachi, Ltd. (TSE: 6501, "Hitachi") today announced that it had acquired approximately 96% of all issued shares of Kyoto Robotics Corporation (Gang Xu, President & CEO; "Kyoto Robotics"), a start-up developing intelligent robotic systems and made it a subsidiary on April 1. The need for automation is rapidly increasing due to the COVID-19 pandemic. Against this backdrop, Hitachi acquires Kyoto Robotics and its unique, advanced technologies, including three-dimensional vision and a control system of robots using AI. This enables the Hitachi Group to provide one-stop and speedy robotic SI<sup>(1)</sup> for an entire automated line in the fields of logistics and factory automation (FA). Hitachi will contribute to the enhancement of the value of the customer's business by providing total seamless solutions for overall optimization using digital technology centering around robotic SI, which connects workplace and management.

In recent years, the need for automation has been increasing rapidly and digital transformation (DX) has been accelerating in the fields of logistics and manufacturing, reflecting the development of digital technology and a labor shortage due to the declining birthrate and aging population and a decrease in the working-age population in addition to the COVID-19 pandemic. Against the backdrop of the rapid expansion of demand for e-commerce in recent years, distribution centers, which store goods and ship them to consumers in a timely fashion, must ensure the safety of employees by mitigating the three Cs, closed spaces, crowded places and close contact with other people, and require further sophisticated operations using robots and digital technology.

Kyoto Robotics is a start-up that was founded in 2000 and has been developing

intelligent robotic systems that are masterless<sup>(2)</sup> and do not require teaching<sup>(3)</sup> that recognize objects using three-dimensional vision like humans and think and carry objects using AI control systems, aiming for full automation at logistics and manufacturing sites. The three-dimensional vision system based on sophisticated image processing technology developed by Kyoto Robotics supports intelligent robots as their eyes, and has a 99.99% object recognition accuracy rate<sup>(4)</sup>. High-precision loading algorithms and AI technology of motion planning which work as a brain enable robot control according to a wide variety of package types and loading conditions. With the significant technology development capabilities, Kyoto Robotics partners with a wide range of robot manufacturers and has a proven track record of delivering more than 400 robotic systems in Japan primarily for palletizing<sup>(5)</sup> and depalletizing<sup>(6)</sup> operations that are difficult to fully automate with robots because of handling objects of many different shapes and weights at logistics and manufacturing sites.

The basic policy for the Industry Sector of Hitachi, one of the priority sectors in terms of investment, is to globally provide total seamless solutions that solve boundary issues existing between the workplace and management and between different entities in the supply chain to create new business value, taking advantage of having products, OT<sup>(7)</sup> and IT and leveraging Lumada<sup>(8)</sup>. In the fields of manufacturing and logistics, the need for automation through the use of robots at workplaces is increasing. At the same time, the field of robotic SI, which involves a huge amount of data, is playing a central role in the connecting of management and workplaces to achieve overall optimization. In this environment, in 2019, Hitachi acquired U.S.-based JR Automation<sup>(9)</sup> and Hitachi Industrial Equipment Systems Co., Ltd. acquired Japan-based KEC Corporation<sup>(10)</sup>. The Hitachi Group is globally expanding and strengthening its capabilities in the robotic SI field.

By acquiring Kyoto Robotics, Hitachi obtains advanced intelligent robotic systems technology and expertise. The Hitachi Group will be able to provide one-stop and speedy robotic SI for entire automated lines in the fields of logistics and FA, and add significant value to the robotic SI that it provides.

Specifically, Hitachi will provide robotic SI that applies Kyoto Robotics' intelligent robotic systems automating palletizing and depalletizing at distribution centers and will also provide an entire automated line, including a compact and low-floor automated guided robot called "Racrew", produced by Hitachi Industrial Products, Ltd., and other conveying equipment. Furthermore, by connecting the systems and automated lines to warehouse control systems (WCS) and warehouse management systems (WMS), which is a combination of products, OT and IT. Hitachi will provide sophisticated solutions connecting workplace and management for distribution centers.

For FA, the Hitachi Group will combine its robotic SI and Kyoto Robotics' intelligent robotic systems to provide automated lines.

The Hitachi Group will integrate Kyoto Robotics' intelligent robotic systems and Hitachi's advanced research and development techniques and resources in the field of robotics to add significant value to the data-oriented robotic SI business. Leveraging Lumada, Hitachi will provide total seamless solutions for the overall optimization of the value chain, including between management and workplace and supply chains to maximize the value of customers' businesses from a management perspective.

**Statement by Kazunobu Morita, Vice President and Executive Officer, CEO of the Industry & Distribution Business Unit, Hitachi, Ltd.**

"We are very pleased that Kyoto Robotics has become a member of the Hitachi Group. During this new normal caused by the COVID-19 pandemic, the acquisition of Kyoto Robotics' advanced technologies and expertise related to intelligent robotic systems, which are the key to the automation of logistics and manufacturing sites, is an important milestone. We will integrate Hitachi's products, OT and IT, Lumada, which uses advanced digital technologies, and Kyoto Robotics' robotic SI, including their intelligent robotic systems and connect cyber space and real space. This will enable us to contribute to the solutions to customers' issues and maximize the value of businesses from a management perspective while enhancing social, environmental and economic value."

**Statement by Gang Xu, President & CEO, Kyoto Robotics**

"We are very pleased that Kyoto Robotics has become a member of the Hitachi Group and it paves the way for our faster business growth and increasing customer satisfaction. Kyoto Robotics began as a spin-off from Ritsumeikan University. We have been a world leader in the development of technologies in the field of three-dimensional vision, robot vision and robot control. We have won the Grand Robot Award and the Grand Logistics Award and are a certified J-Startup. On the other hand, the three-dimensional sensor and intelligent picking controller we develop provide value to the customer only after they are embedded in robotic systems through robotic SI. Becoming a member of the Hitachi Group, which is heavily investing in the robot system integration business, we now have a larger platform to deliver our technology to much wider customers, which would have been difficult if only Kyoto Robotics alone. Currently large Japanese companies rarely acquire high-tech start-ups. We hope that this acquisition will become a precedent and contribute to the promotion of open innovation in Japan."

(1) SI: Systems Integration

(2) Masterless: Operations that do not require the advance registration of information such as the weight and size of objects.

(3) Does not require teaching: No teaching operations or programming to control the operations of robots is necessary.

(4) In case of single depalletizing. Capacity measured using boxes selected by Kyoto Robotics in an environment specified by Kyoto Robotics

(5) Palletize: Loading pallets

(6) Depalletize: Unloading pallets

- (7) Operational Technology
- (8) Lumada: General name of solution service technology using Hitachi's advanced digital technology to generate value from customer data and accelerate digital innovation  
<https://www.hitachi.com/products/it/lumada/global/en/index.html>
- (9) Hitachi, Ltd. news release titled "Hitachi Agrees to Acquire JR Automation, a Robotic System Integrator in the US" announced on April 24, 2019.  
<https://www.hitachi.com/New/cnews/month/2019/04/190424.html>
- (10) Hitachi Industrial Equipment Systems Co., Ltd. news release titled "Hitachi Industrial Equipment Systems Entered into Agreement to Acquire KEC, Robotic System Integrator" announced on March 22, 2019.  
<https://www.hitachi.com/New/cnews/month/2019/03/190322.html>

■Profile of Kyoto Robotics Corporation

Name	Kyoto Robotics Corporation
Location	1-15-5 Noji, Kusatsu City, Shiga, Japan
Title and name of representative	President & CEO: Gang Xu
Business description	Development and sale of intelligent picking robots
Established	2000
Capital (as of the end of March 2021)	99.8 million yen
Total number of employees (as of the end of March 2021)	Approximately 40

**About Hitachi, Ltd.**

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, is focused on its Social Innovation Business that combines information technology (IT), operational technology (OT) and products. The company's consolidated revenues for fiscal year 2019 (ended March 31, 2020) totaled 8,767.2 billion yen (\$80.4 billion), and it employed approximately 301,000 people worldwide. Hitachi drives digital innovation across five sectors – Mobility, Smart Life, Industry, Energy and IT – through Lumada, Hitachi's advanced digital solutions, services, and technologies for turning data into insights to drive digital innovation. Its purpose is to deliver solutions that increase social, environmental and economic value for its customers. For more information on Hitachi, please visit the company's website at <https://www.hitachi.com>.

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