Fujifilm to build a new “smart” endoscope manufacturing facility using AI and IoT technologies to double production capacity

Tokyo, May 28, 2019 — FUJIFILM Corporation (President: Kenji Sukeno) has announced that it will build a new “smart” manufacturing facility in the site of FUJIFILM Techno Products Co., Ltd. (President: Masakazu Nakajo), which is one of Fujifilm’s production bases for endoscopy products. The new manufacturing facility will be in full operation this September, and will employ AI and IoT technologies to achieve significant high production efficiency. The facility will manufacture endoscopes compatible with Fujifilm’s endoscopy systems such as “ELUXEO” and “LASEREO”, which use two distinct light wavelengths for observation to support detection of minute lesions. Fujifilm has invested approximately 4 billion yen (36 million US dollars) for the construction, doubling the site’s endoscope production capacity.

<Exterior view of the new manufacturing facility (image picture)>

The new site will support the global increase in demand for endoscopy that facilitate direct in-vivo observation that are designed to provide reduced stress on patients. Fujifilm provides the “ELUXEO” and “LASEREO” series of endoscopy systems to the global market which support diagnosing inflammation and detecting minute lesions with image-enhancing functions including “BLI[*1],” that highlights fine blood vessels and structures in the mucosal surface of organs, and “LCI[*2],” that accentuates subtle tonal differences in red coloration in endoscopic images. Medical institutions have praised this technology, especially for their application in observing changes in fine blood vessels and in mucosal surfaces, characteristically seen in early stages of cancer. This technology has greatly increased the global demand for Fujifilm’s endoscopy systems.

The manufacturing of endoscopes requires refined and highly precise processing technology, considering their application requires their insertion into patient’s body for inspection and treatment. Complex

manufacturing processes are also required to deliver high performance in operability, ease of insertion and durability. Boosting production capacity has become necessary to meet the fast-growing demand. Yet, significantly raising production efficiency has proven to be extremely difficult as manufacturing requires know-how and outstanding skills of experienced technicians for installing tiny lenses and visually inspecting focus and color accuracy of endoscopic images.

The new endoscope manufacturing facility will be cutting-edge using the Internet of Things (IoT) to control the movements of workers and goods as well as the condition of equipment, A centralized platform gathers not only conventionally managed data such as man-hours, manufacturing / inspection records and parts inventory, but also additional information such as equipment operation status and workers' traffic, using sensors installed across the facility. The ability to monitor the equipment and the production progress in real-time speeds up the cycle of analysis and improvements for streamlining the facility's operation.

Artificial Intelligence (AI) can also automate the equipment inspection process by learning judging criteria applied by experienced technicians to endoscopic images during visual inspections leading to significant reduction in inspection steps. Such experts' work can also be filmed with a video camera and projected onto "smart glasses[*3]" along with supplementary information obtained from sensors in support of frontline production operation, thereby achieving significant work efficiency improvement and stability in product quality at the same time.

Fujifilm will continue to meet diverse needs at the medical frontline, thereby streamlining medical tests, improving the quality of healthcare and contributing to the promotion and enhancement of people's health.

<Overview of the new manufacturing facility>

Name of the facility	FUJIFILM Techno Products N-1
Address	700 Konaka-cho, Sano-shi, Tochigi, JAPAN
Total amount of investment	Approx. 4 billion yen (36 million US dollars)
Production item	Endoscopes
Total floor area	11,275m^2 (Steel-reinforced two-story building)
Completion	End of June 2019
Operation commencement	September 2019

*1 BLI stands for "Blue Light Imaging" and "Blue LASER Imaging."
*2 LCI stands for "Linked Color Imaging."
*3 Spectacle-type wearable device that uses augmented reality (AR) technology to overlay virtual visual data (text and image) onto actual scenery

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