

STAN

## STAN Systems achieves simple, speedy, and powerful edge computing

HPE Edgeline GL20 IoT Gateway enables real-time data acquisition and analysis

### Industry

IT Systems Provider

### Objective

Find a solution that will process, analyze, and control data entirely using edge computing

### Approach

Installed edge computers that make real-time data acquisition and analysis possible

### IT matters

- The compact and durable GL20 is optimum for industrial environments, regardless of where it is installed
- Sensor data is collected using the edge and real-time data streaming is possible, allowing rapid response to the plants
- Smooth system expansion and high versatility enable easy installation, compatibility with various communication protocols and excellent cost-performance

### Business matters

- Business expansion is expected because high-load computing is possible in a variety of edge environments
- Expansion to overseas markets is also possible because data is analyzed in real time and cultivation recipes are established quickly for the various plants
- Revitalization of Tokushima's industry will be supported by the development of farming systems that utilize IoT



Japan's STAN Systems develops a wide range of ICT business solutions. It has been using **HPE Edgeline** GL20 IoT Gateway in a Smart Plant demonstration experiment for an LED plant factory run by the Tokushima Prefecture. Now an HPE OEM partner, STAN Systems plans to apply this solution to other areas and to contribute to industrial development in Tokushima.

### Challenge

#### Computing support for industrial environments

STAN Systems develops a wide range of ICT business solutions, focusing on systems integration and is especially dedicated to providing system solutions to corporations in its local Shikoku region of Japan. One of these is the Tokushima Prefecture. With the regional expansion of **Internet of Things (IoT)**, Tokushima Prefecture launched the Tokushima IoT Promotion Network in 2018. This is a data sharing foundation that saves and organizes data acquired from various sensors in one batch, and is open for free to corporations, municipalities, and universities in the prefecture.



“Systems that prepare and analyze large volumes of data at industrial sites require affordable cost, speed, flexibility, and high durability. HPE Edgeline GL20 fulfills all of these requirements and is an optimum gateway for getting to know your worksite inside and out.”

– Atsushi Manabe, COO, STAN Systems Corporation

**Dramatically improve data processing performance at the edge with HPE Edgeline GL series Gateway**



“In the primary industries working in nature such as agriculture, fishery and forestry, there are major issues like reduced crop yields due to climatic variation and lack of successors,” says Atsushi Manabe, executive director and COO of STAN Systems. “Tokushima is no exception to this, and amidst this sense of impending crisis, industry, government, and academia are cooperating to utilize IoT to support industries and improve the quality of living in a variety of aspects.”

To support this work, STAN Systems has been conducting a Smart Plant demonstration experiment using Light Emitting Diodes (LED). Temperature sensors, humidity sensors, CO2 sensors, moisture sensors, pH sensors, conductivity sensors, LED light devices, and web cameras are installed in the factory and cultivation-related data from each of the devices is automatically collected and analyzed. In one demonstration experiment to grow strawberries from seeds, it was possible to shorten the normal harvest time by 1.4 months. Also, in co-operation with Shikoku University, the Smart Plant was used to grow indigo leaves which are used in dyes.

“The indigo plant is a specialty of Tokushima. We selected this product because there is a lot of attention on Japan Blue for the upcoming 2020 Tokyo Olympics, and this attention will only increase from a health perspective as well, due to the uses of indigo dye,” explains Manabe.

“The Smart Plant achieves stable plant production utilizing IoT and we believe it will become a critical solution in the future of agriculture.”

However, maintaining optimum controls while understanding the plant status in real time was no easy task.

“The cultivation recipes differ for each plant. Therefore, for this indigo plant, eight types of environments are created simultaneously and data is analyzed during the comparison,” adds Manabe. “As the amount of data became larger and larger, we became keenly aware of the extreme importance of processing using edge computing and the industrial environment site in order to achieve real-time analysis and control. Providing quick and appropriate processing using edge can prevent latency and data corruption. However, when considering the spread of future plant factories, there are a number of important points that must be considered when building this system.”

STAN Systems needed a system that would cope with rapid data acquisition using the edge, which is suitable for an industrial environment. The solution needed to be highly cost-effective and easy for most corporations and groups to implement and any device had to be installed quickly and instantly available for use. The problem was that traditional edge computing would not generally fulfill these criteria.





## Solution

### Processing large loads using the edge

Around that time, Manabe's interest was attracted by the HPE Edgeline converged edge system. From among the Edgeline product family, a GL20 IoT Gateway installation was proposed by HPE in Japan.

The manager of Enterprise Account Sales General Headquarters, Central/West Sales says: "Smart Plants are a demonstration experiment for compact facilities. HPE Edgeline GL20 IoT Gateway is highly durable and suitable to operate in this type of environment. It is equipped with the highest rank Intel® Core™ i5 CPU, 4 GB memory, and 64 GB SSD so it can acquire and organize large volumes of data quickly."

Manabe adds ease of use is a big advantage. "HPE Edgeline GL20 is a product that disrupts the concept of high-performance gateway as we know it. In addition to those high specs, what interests me is the various uses that can be developed depending on the project scale and user situation. Data processing is also possible at the edge, so you can achieve control while data is being acquired by the GL20.

This means that if the system expansion advances, it will be possible to quickly analyze the data acquired by GL20 and integrate Artificial Intelligence (AI) to deepen the analysis further."

## Benefit

### HPE Edgeline is a tool for expanding possibilities

At HPE Discover Las Vegas 2018, HPE announced that it would invest \$4 billion in edge computing over the next four years and STAN Systems has now entered into an OEM agreement with HPE. It will continue to develop their cooperative working relationship and by using the HPE Edgeline products as a foothold, the goal is to build a mutually beneficial relationship. Manabe speaks of exploring the possibilities of what the edge can do for future business development: "HPE is involved in partnerships with various corporations having the latest technology and is adding value to its own products but if HPE Edgeline were to be fused with AI, I am sure that an entirely new value will be created. If there are more options for wireless communication and analysis tools, I believe that HPE Edgeline is an important piece in the IoT platform puzzle."

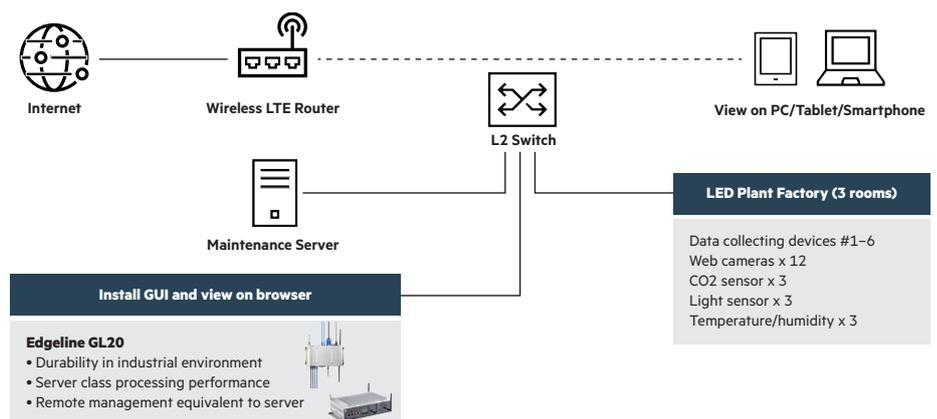


**Atsushi Manabe**, COO, STAN Systems Corporation



**Takahiro Kitamoto**, category manager IoT & Converged Edge System, HPE Japan

## LED Plant Factory Smart Plant



“The HPE concept is to use the edge for handling loads that conventionally could only be handled using a data center or the cloud. The HPE Edgeline product family can achieve this.”

– Takahiro Kitamoto, category manager IoT & Converged Edge System, HPE Japan

## Customer at a glance

### Hardware

- HPE Edgeline GL20 IoT Gateway

Takahiro Kitamoto, Hybrid Cloud Products Division of Hewlett Packard Enterprise in Japan says: “We believe that in the future, data will not be made at a data center but at the edge. As you can see in this Smart Plant example, data generated by the plants is loaded from devices. If you have the highest performing IoT edge computer, a data center isn’t required on a daily basis in the industrial environment where that cultivation is utilized. There is actually value in focusing on the edge in order to provide a speedy response.”

STAN Systems will also apply the Smart Plant concept to other projects. There is a facility called “Waza no Yakata” in Tokushima’s Kamaitachi district that offers indigo dye crafting experiences. STAN Systems is proposing to install Smart Plant on the first floor of that building, so that fresh indigo leaves can be cultivated all year long and believes that HPE Edgeline GL20 can be used in the project.

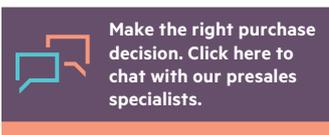
“We want to collect as many successful examples as possible and accelerate IoT,” says Manabe. “The benefit of plant factories is that they make cultivation of high-quality crops possible without relying on the climate or location, creating a solution for a health-conscious and pesticide-free society.”

“At the very least I believe it’s possible to cultivate plants that can reach GLOBALG.A.P. standards. Recently inquiries from throughout Asia, including South Korea, have been increasing, as they have taken notice of these new possibilities, so we would like to make this a stable core business.”

Among the HPE Edgeline product line, the Gateway type GL series is equipped with a high-performance CPU that has never been used in gateways in the past, dramatically improving data processing performance at the edge. Similarly, the EL series is equipped with server grade performance, functions, and environmental resistance not seen in other edge computers and they are proof of the strong HPE commitment, which underlines the importance of edge computing.

“In my opinion, HPE Edgeline is essential for an IoT system that connects seamlessly from the edge to the cloud. I hope we can create a strong dialog with our customers and determine how to utilize this, how to turn it into a business and create added value in the process,” concludes Kitamoto.

Learn more at  
[hpe.com/info/edgeline](https://hpe.com/info/edgeline)



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