

## *For Immediate Release*

### **IIJ Launches LoRaWAN® Solution for HACCP Temperature Management**

*- Providing low-cost IoT solutions for food-industry temperature management of refrigeration equipment and warehouses --*

TOKYO—June 15, 2020—Internet Initiative Japan Inc. (TSE1: 3774), one of Japan's leading Internet access and comprehensive network solutions providers, today announced the release of the IIJ LoRaWAN® Solution for HACCP Temperature Management, an IoT solution for automatic temperature monitoring and management of refrigerator-freezers and warehouses in the food industry, in response to the mandate for hygiene management under HACCP\*.

This solution provides the entire range of products and services necessary for temperature management—including temperature sensors, LoRaWAN® gateways (wireless base stations that send temperature data to the cloud), cloud services and applications that store and visualize data, SIMs for communications, and support. This solution integrates Kiwi Technology's "Kiwi Temperature Box" with IIJ's services to enable customers to check real-time temperature readings on a smartphone or PC remotely; the system can then send notifications via email or the app when a temperature exceeds the predetermined threshold value. Customers can thus respond immediately to any problems that may arise and restore proper temperature control. Whether freezers and refrigerators at supermarkets, convenience stores, hotels, warehouses, and other sites that produce, store, sell, or serve food, customers can easily and cost-effectively implement the most important HACCP-compliant temperature management systems, including automated temperature data collection and anomaly monitoring.

(\*) HACCP (Hazard Analysis and Critical Control Point): A hygiene management method for controlling important processes to ensure food safety. It analyzes factors (risks) that could easily result in the introduction of microorganisms, foreign substances, and other hazards, from the point of the arrival of raw materials to the shipment of products. Many countries, especially the developed nations, have mandated or encouraged the application of this important hygiene management standard. In Japan, the Food Sanitation Law, amended in June 2018, made it law in June 2020. The grace period ends in June 2021, after which conformance with HACCP will become fully mandatory for all food businesses.

### **Background**

IIJ launched the IIJ IoT Service in 2016 and has been diligently promoting the IoT business ever since. The Group focused in particular on LoRaWAN®, a wireless system that boasts low power consumption, long-distance communications, and unregulated use without a license. Through collaboration with Taiwan-based Kiwi Technology, a leading LoRaWAN® company, the Group has been providing LoRaWAN® solutions that linked the technologies of both companies, such as the LoRaWAN®-based IoT for water management in the field of smart agriculture. Based on this knowledge and experience, IIJ has developed an IoT solution of temperature monitoring, which is the critical control point in complying with the HACCP requirements.

## Service Features

Can be introduced as a single package for easy and low-cost HACCP compliance

The solution provides all the systems in one package, including temperature sensors, LoRaWAN® gateways, temperature management applications, and cloud services for data storage. Because the sensor is battery powered, no power supply work is required, and the system takes care of the device settings and management. Customers need only turn on the device to start, which IIJ's unique "SACM"\* makes it possible. By automating temperature management, which is an important management item in HACCP, the burden of handling the required temperature inspection work is greatly reduced.

\*SACM(Service Adaptor Control Manager): It is a centralized management system service for network devices developed and provided by IIJ. Devices can be automatically connected to and centrally managed.

Highly scalable LoRaWAN® allows this solution to be used in many other applications.

The communication LoRaWAN® uses in this solution is an open standard, so it is compatible with a wide variety of sensors. A single gateway (base station) can be connected to sensors at distances ranging from a few meters to several kilometers. Since various types of sensors scattered over a wide area can be managed centrally, it can be easily expanded to other applications, such as data collection from vibration sensors, GPS trackers, and CO2 sensors, for example.

## Functions List

Function	Description
Alert notification	It can be configured to notify you by email or apps when a certain value is exceeded. This will help you respond immediately to problems that arise.
Visualization	The temperature data can be centrally visualized in a table format. You can also check your alert history and other information at any time.
Remote monitoring	Easily manage your temperature information from your smart device app and desktop browser. You can check the temperature data anytime, anywhere, without having to record the temperature every time.
Reports Feature	Accumulated temperature data can be exported daily or monthly.

## Plan Details

IIJ offers two plans as noted below.

- Lite plan to manage up to 10 locations
- Premium plan to manage up to 20 locations.

<Lite Plan>

Kiwitec's "Kiwi Temperature Box Lite" is combined with IIJ services, including a data communication SIM and gateway management system.

Kiwitec's Lite package includes;

- Box-Type Temperature Sensor LAS-603 x 10 units  
Temperatures can be measured every five minutes and data is sent to the cloud at hourly intervals.
- Indoor LoRaWAN® gateway TLG3901BLV2 x 1
- Temperature management application fees (five-year plan)
- Cloud Services Fees (five-year plan)

Price: estimates are available on request

< Premium Plan >

Kiwitec's "Kiwi Temperature Box Premium" is combined with IIJ services, including a data communication SIM and gateway management system.

Kiwitec's premium package includes;

Box-type temperature sensor LAS-603 x 15 units, Probe-type temperature sensor LAS-604 V2 x 5 units

Temperatures can be measured every five minutes, and data are sent to the cloud at hourly intervals.

- Indoor LoRaWAN® Gateway TLG3901BLV2 x 1
- Temperature management application fees (five-year plan)
- Cloud Services Fees (five-year plan)

Price: estimates are available on request

## Product Image



Box-type temperature sensor



Probe-type temperature sensor



Indoor LoRaWAN® base station

IIJ has been continuing to develop its own technologies such as centralized control system and automated device-connection system, and to expand its IoT business with proceeding studies using LoRaWAN®.

It will continue to achieve high-value-added LoRaWAN® solutions for various IoT fields in the future.

## About IIJ

Founded in 1992, IIJ is one of Japan's leading Internet-access and comprehensive network solutions providers. IIJ and its group companies provide total network solutions that mainly cater to high-end corporate customers. IIJ's services include high-quality Internet connectivity services, systems integration, cloud computing services, security services and mobile services. Moreover, IIJ has built one of the largest Internet backbone networks in Japan that is connected to the United States, the United Kingdom and Asia. IIJ was listed on the First Section of the Tokyo Stock Exchange in 2006. For more information about IIJ, visit the IIJ Web site at <https://www.ij.ad.jp/en/>.

*The statements within this release contain forward-looking statements about our future plans that involve risk and uncertainty. These statements may differ materially from actual future events or results.*

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