

## ▼CONTACT US

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Should you have any further questions, please do not hesitate to contact us.  
We will contact you as soon as possible.

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IoT with Okamoto Electronics



**岡本無線電機株式会社**  
OKAMOTO ELECTRONICS CORPORATION

# Trading company specialized in electronic components

OKAMOTO ELECTRONICS CORPORATION

We provide electronic components, unit products,  
network system and cloud services,  
which are indispensable to society, with our own added value.



岡本無線電機株式会社  
OKAMOTO ELECTRONICS CORPORATION  
おとり株式会社  
OHTORI CORPORATION

## Realizing smart factories with IoT

Smart factories ..... P3	Antenna ..... P8
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LPWA device ..... P6	IoT service for Abnormality grasp ..... P9
Optical wireless communication ..... P7	IoT Unit for Sigfox ..... P10
Network camera ..... P7	Detector for wireless wall and crack change ..... P10

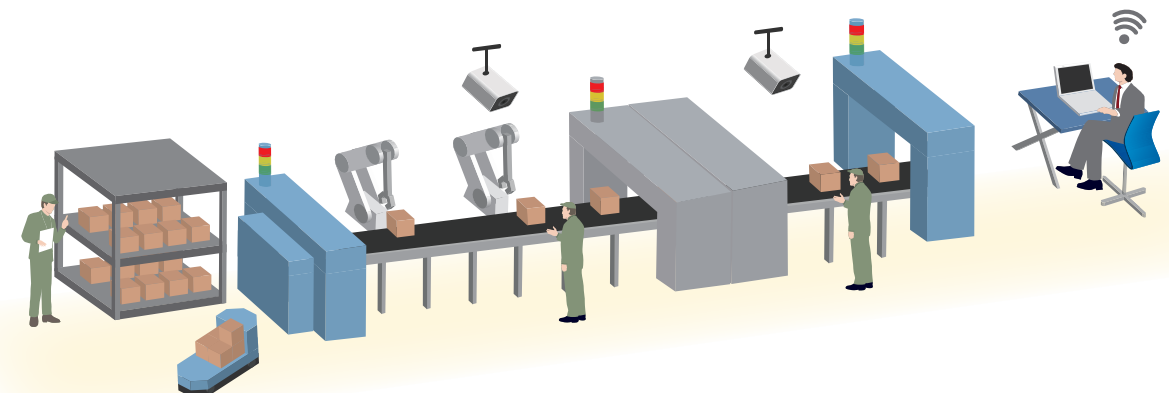
Productivity  
improvement

Automation

Manpower  
saving

Visualization

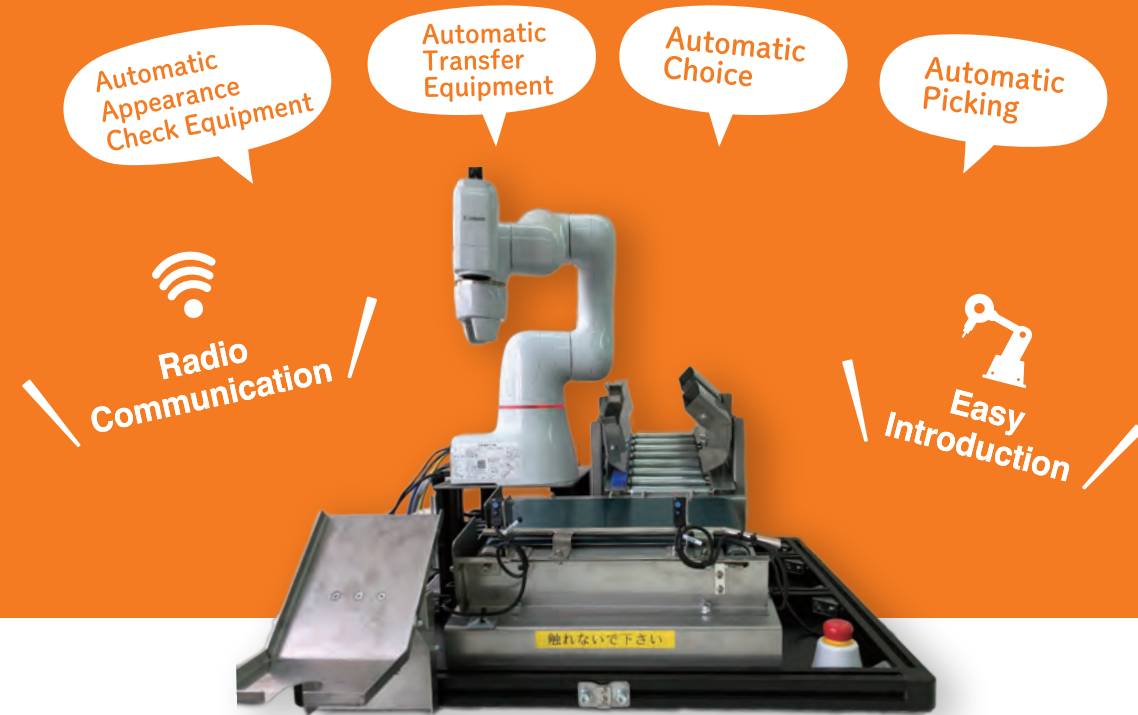
Optimisation





# Using robot which functions with everyone

## Automation Equipment



### POINT

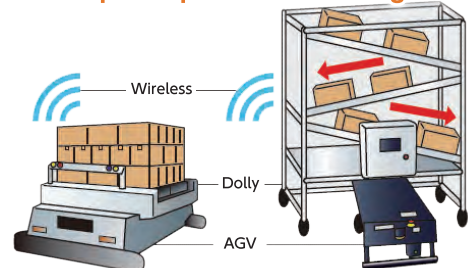
- |   |  |  |
|---|--|--|
| 1 Manpower Saving By Automation of Assembly Process | 2 Quality Improvement By Automatic Image Check | 3 Productivity Improvement By Automatic Conveyance |
| 4 Ensuring Safety                                   | 5 Picking and Place of Products                | 6 Appearance Check                                 |

### Delivery Results

- Automatic Appearance Test Equipment
- Automatic Dimension Measuring Equipment
- Automatic Transfer Equipment
- Laser Marking Equipment
- Hydraulic Caulking Equipment etc.

System proposal using AGV (Automatic Guided Vehicle) is also possible

Wide range proposal is possible from operation software to dolly, control panel production and guideless AGV



## Electronic Paper Tag



RFID Tag that is Thin, Light and Battery less, with display function

**Completely Battery Less**  
No maintenance needed!

**Wireless Display rewrite is possible!**

### Implementation effect

- Eradication of operation error
- Labor saving
- Traceability
- Paper less
- Immediacy

PD lable

Operation order

Visitor ID card

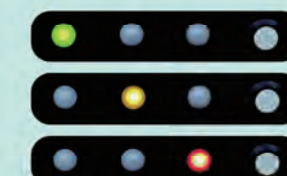
Electronic shelf lable

Inventory management

History & Quality management

## Picking Tag

Wireless control / Battery less



Wireless control and easy installation!  
Reliable operation with 3 color LED!

LED flash setting can be altered

Easily placeable at any place

Maintenance free

### 5 features

- Because it is wireless control the layout can be altered freely and easily.
- Differently from virtual confirmation of letter and paper base, light and color from LED will eradicate operation error. (System info is needed)
- Specified Tag's LED will turn on by wireless.
- Battery replacement is not needed because it is sourced by solar panel.
- By adopting low power consumption design and solar cell, it made possible to be battery and maintenance free.

## The world's smallest class Micro RF Tag

um size



0.9×0.9 (mm)

'Small size' makes more 'Possibilities'



Medical field

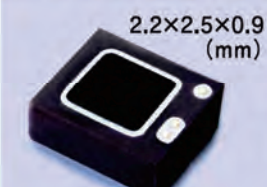


Brand protection, Inventory management, etc.

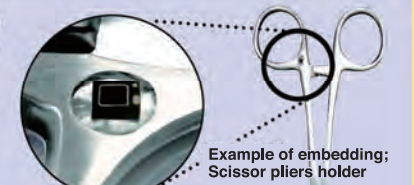


Small animal research

## On-Metal type of Mini RFID Tag



2.2×2.5×0.9 (mm)



RF communication is available even embedded into Metal or Plastic resin



Medical records management



Inventory management or metal products



Real jewelry identification

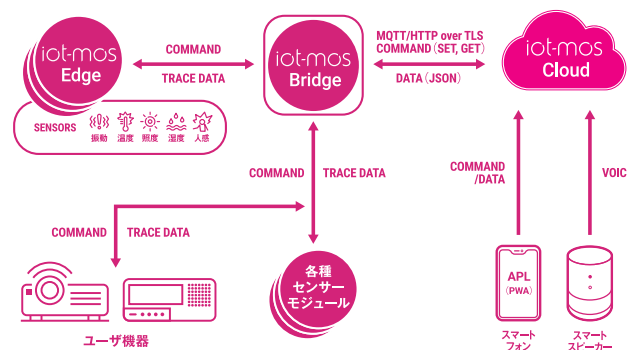
# iot-mos

Easy IOT with the sensor you want to use

IoT platform service to realize from prototype to mass production

## iot-mos Platform

IoT mos is an IoT platform that provides an integrated environment from prototypes to mass production and services for IoT products.  
We provide integrated system construction services using sensing devices, clouds, smartphones, speaker systems, etc.



### Various sensor support



Multiple mounting of any sensors  
Expandable according to the  
conditions

### Various wireless support



Wireless sensor data is  
realized via WiFi/BLE

### Cloud support



Cloud data logging  
is possible

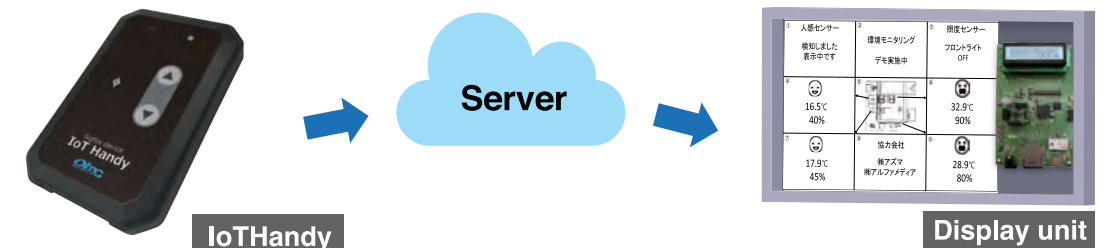
株式会社ダイセン電子工業  
**DAISEN** × **eForce**

岡本無線電機株式会社  
OKAMOTO ELECTRONICS CORPORATION

## LPWA device Environmental monitoring system (DEMO)

We will customize according to various usage scenes.

### System configuration



#### Various functions

LPWA, GPS, Temperature and humidity  
sensor, Acceleration sensor, Barometric  
pressure sensor, Magnetic sensor,  
Illuminance sensor, Battery

#### Various functions

LPWA, Low power consumption  
LCD, Human sensor, Illuminance  
sensor, Watt meter, SD card,  
⇒ Solar panel, Storage battery can  
be installed

※These functions are custom-made.

### Introduction image and effects

	Environmental monitoring		
	Prevention	Cost reduction	
	Working site	Indoor environment	Logistics
Needs	To prevent heat stroke among workers	To manage the environment inside the factory	To control the temperature and humidity inside the truck To know the track position information
Method	IoT Handy + Display development ⇒ Discomfort index, WBGT value analysis	IoT Handy + Display development ⇒ Temperature and humidity data analysis	LTECatM1unit + Display development ⇒ GPS, Temperature and humidity data analysis
After introduction	Collectively manage environmental information of all workers Immediate notification of dangerous area	Collectively manage the factory environment Immediate notification when threshold is exceeded	Streamlining travel routes Immediate notification of abnormal temperature in the car



Azuma **azmc**



## Optical wireless communication unit

The 3rd communication methods follow after  
Wired and Wireless radio.

The world smallest class  
**SOT-TS100A**

100m

100  
Mbps

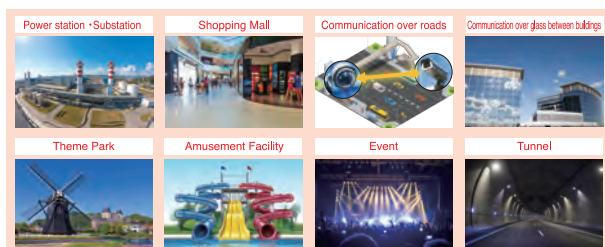


### Features

- No interference from radio waves, no interference from electromagnetic noise.
- High Security for One-to-One communication.
- Stable speed of 100Mbps.
- Almost no delay in communication.

Optical wireless communication can be used in,

- Areas where electromagnetic interference occur.
- Areas where it's difficult to establish wired facilities.
- Areas where needs frequent setup/remove of wired facilities.
- Areas where radio waves interference occur.
- Areas where landscape preservation is needed.
- Areas where radio waves can not reach.



TAIYO YUDEN

## Standard Antenna Lineup (LTE•LPWA•920MHz band)

### External antenna

**IP67**



MPN:1019-008A  
Operating frequency:916 - 928 MHz

### LTE antenna (Single type)

**IP56**



MPN:1018-473A  
Operating frequency:814-960 MHz/1428-2170 MHz

### LTE antenna (MIMO type)

**IP56**



MPN:1018-458A  
Operating frequency:814-960 MHz/1428-2170 MHz

MPN 1018-418A	MPN 1018-391A	MPN 1018-456A	MPN 1018-474A	MPN 1018-472A
Operating frequency 815 - 960 MHz / 1428 - 2170 MHz	Operating frequency 815 - 960 MHz / 1428 - 2170 MHz	Operating frequency 814 - 960 MHz / 1575.42 - 2170 MHz	Operating frequency 814 - 960 MHz / 1428 - 2170 MHz	Operating frequency 814 - 960 MHz / 1710 - 2170 MHz

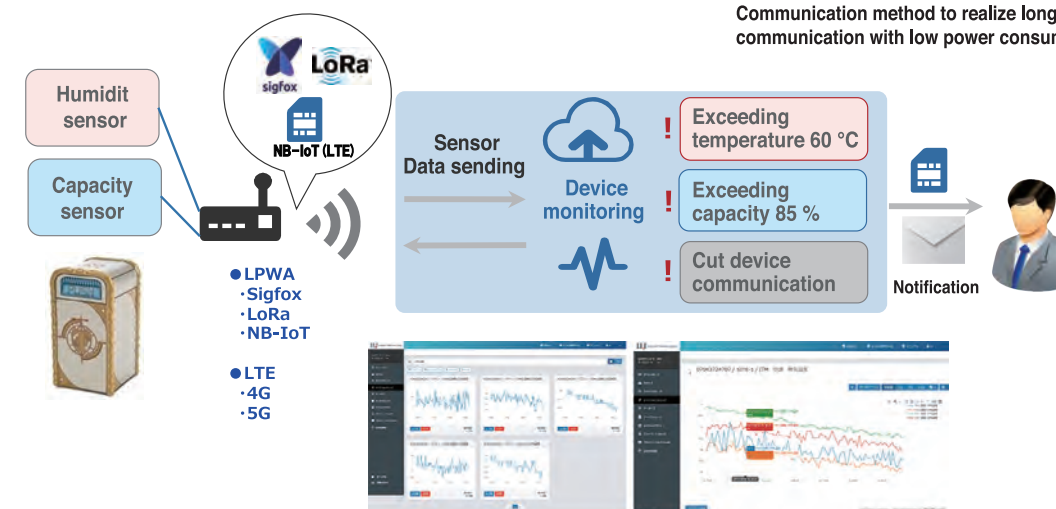
Staf corporation

## Proposal for IoT business by the collaboration between Okamoto Electronics and IIJ Global Solutions Inc.

We offer basic function needed when you are considering IoT system by **one-stop** service.

### IoT Business model ; Monitoring by using communication module such as LPWA\*

\* LPWA : Low Power Wide Area  
Communication method to realize long distance  
communication with low power consumption



● Screen image of device monitoring

岡本無線電機株式会社 OKAMOTO ELECTRONICS CORPORATION X IIJ Global

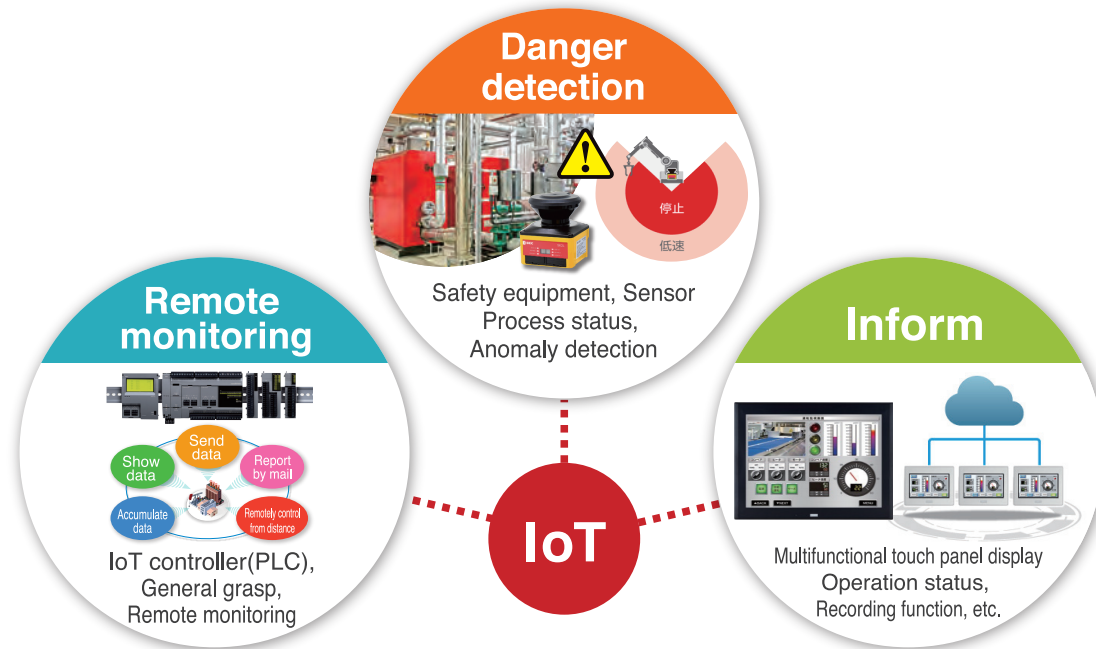
Network Camera System to next generation  
through further evolution

# TRIFORA

[High Image Quality] [Long Time Recording] [High Sensitivity]

TOA

# Safety management with IoT!!



Make IoT more closer and easier **Easy connect**



# Sigfox IoT Unit with 2 Analog and 4 Digital input

Prototype under development

Connect up to 6 signals to sensor and switch

Environment/  
Energy

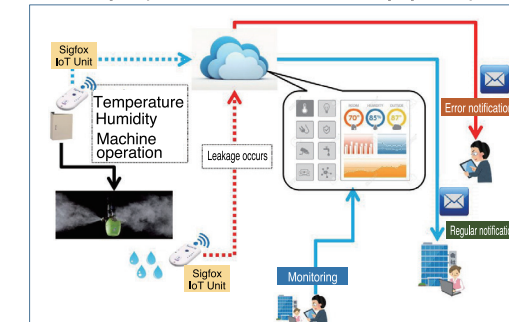
Facility operation/  
Operation time/  
Malfunction

Error notification/  
Regular notification

Monitor the atmosphere, water quality, facility operation status and notification alert with just one unit.

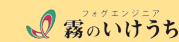


Example (Monitor humidification equipment)



Specification

Model number	SF0D1 (temporary)
External dimension	65x130x25.8 (mm)
Antenna	External dimension
Communication	Sigfox
Power supply	DC 24V (Spring type terminal)
IF input	Analog (DC 0-5V) x2 点 Digital x4 e-Con Connector
Mounting method	Magnet
Optional accessories	1.5m extension cable for antenna



# Abnormality grasp IoT service by Sigfox

Tilt & impact remote monitoring system

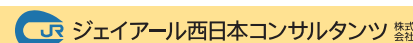
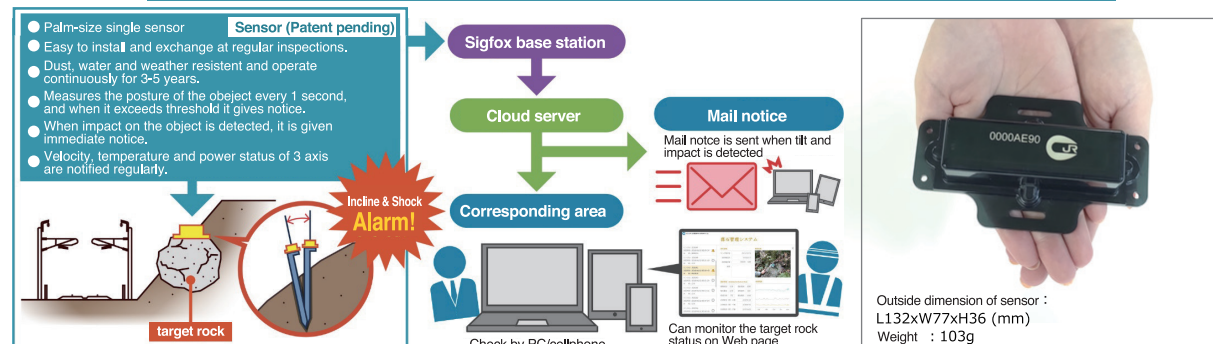
This abnormality grasp IoT service uses Sigfox's sensor, communication and monitoring system to detect rockfall on slope or mudslide around rail or roadsides, and residential areas. Also remotely monitor collapsed structures from extensive disaster danger points by labor saving inspection, maintenance and disaster grasp.

## Features

- Can remotely grasp status and detect tilt/impact cheaply.
- Can make sensor management in broad and several areas by Sigfox.
- Can choose any place because no big installation work is needed.
- With built-in battery it can run 3-5 years without maintenance.

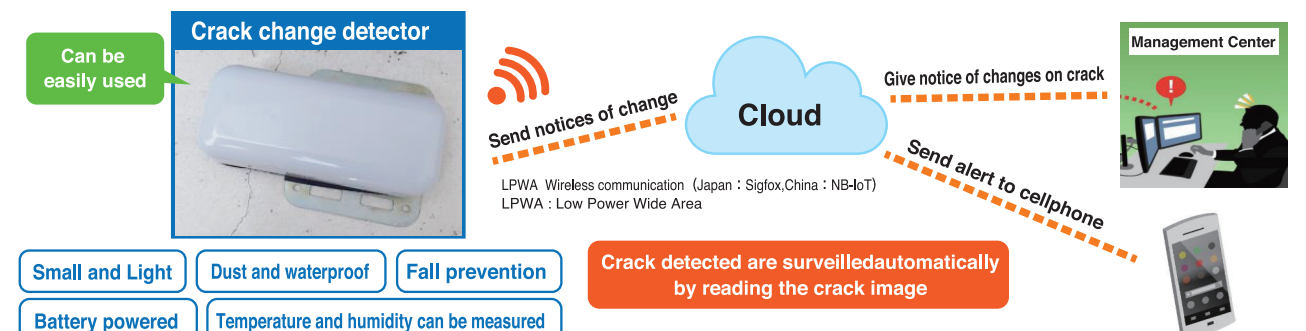


## Labor saving to inspect extensive disaster danger points

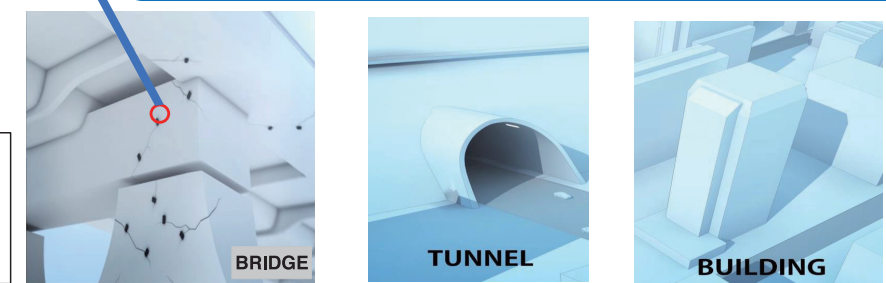


# Wireless wall crack change detector

Can significantly save time for maintenance!



Can be installed to any kind of concrete structures



Utility Model Registration :  
Japan Registration No.3221635  
China 201920263150.X  
Patent Application :  
China 201910157007.7

威海華菱光電股份有限公司 (WHEC)