

CHINOINT
SENSE CONNECT

AIOT



SENSE CONNECT

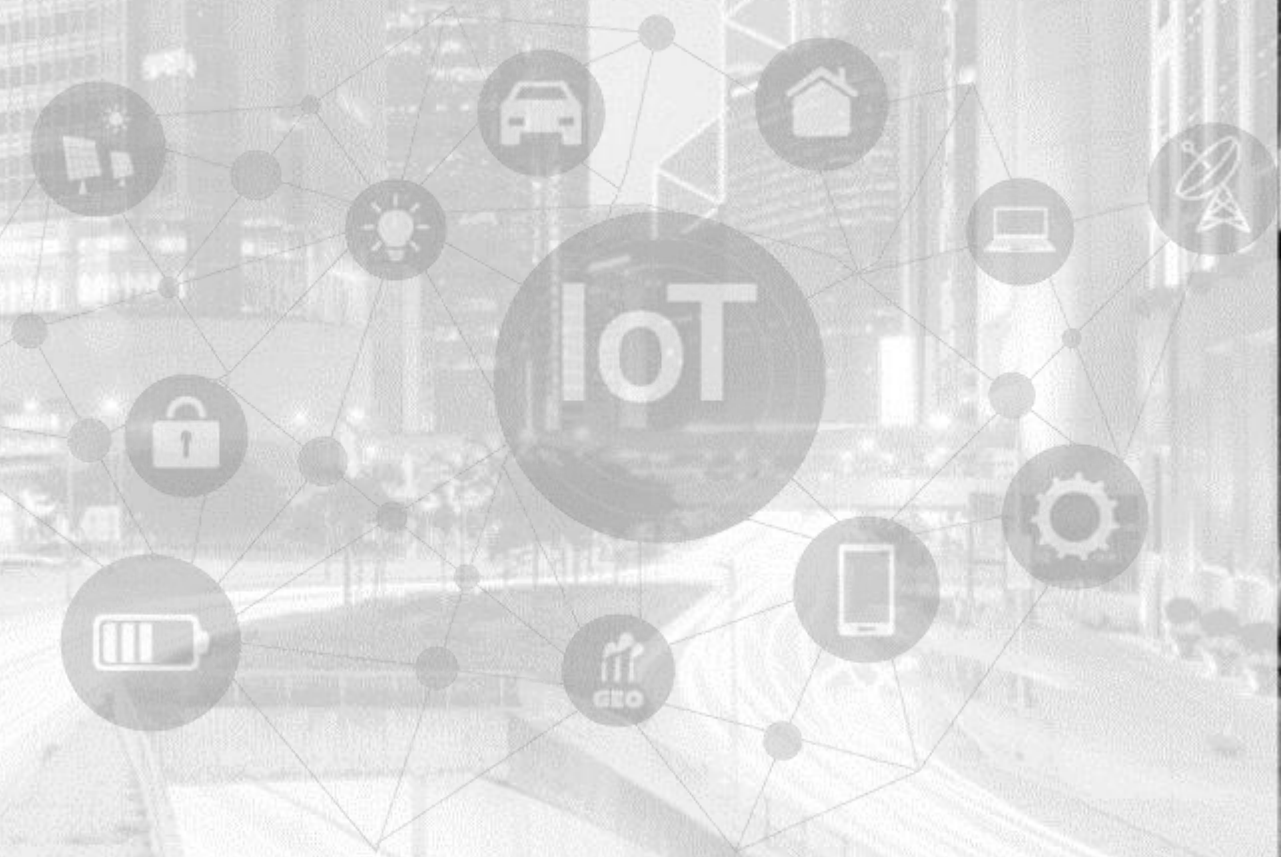
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Who is ChinoINT?



Partners & Customers in Next Gen Smart Solution



suez

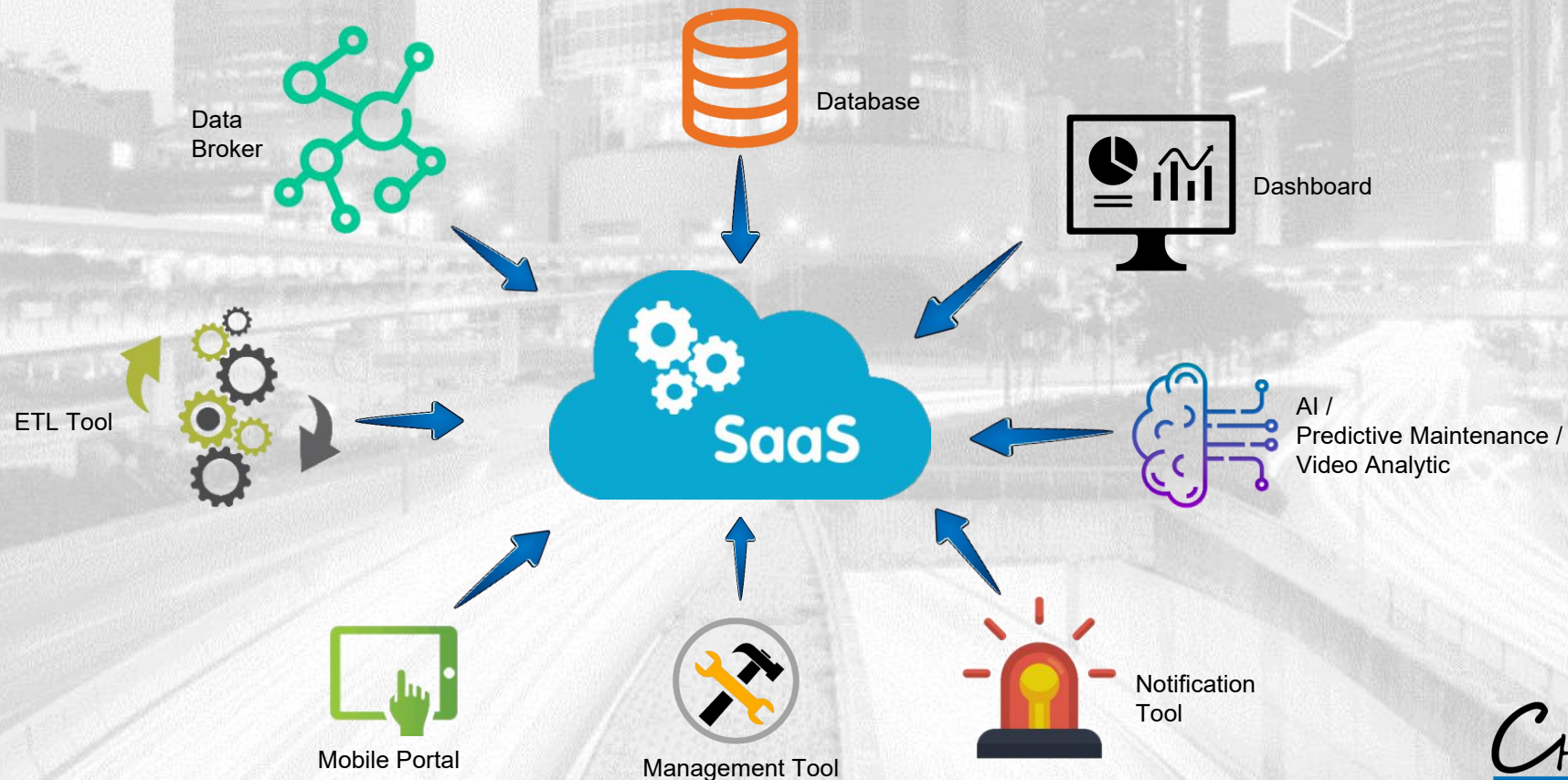


SIEMENS *ITChannel*

ChinoINT SaaS

ChinoINT creates the next generation SaaS and IOT platforms.

The SaaS is a complete platform including data broker, ETL tool, Database, dashboard, management tools, mobile portal and notification tools, etc. This fulfills all your IOT needs and generates extra values to our clients.



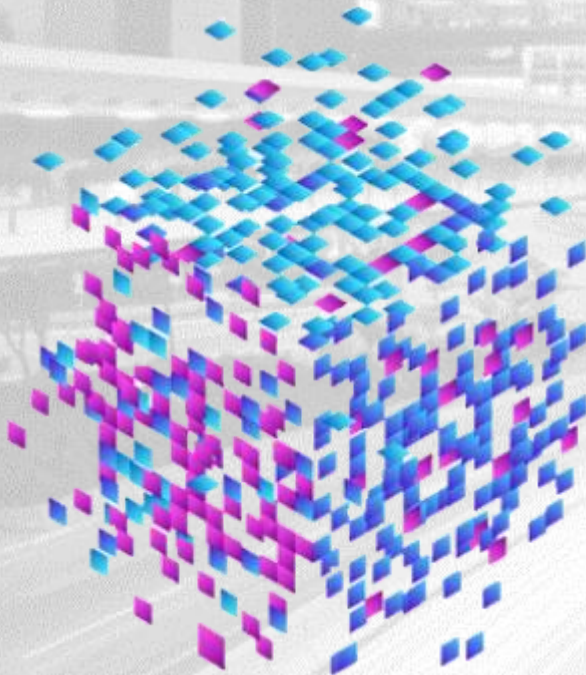
ChinoINT Big Data Analytic

ChinoINT is the Data Expert.

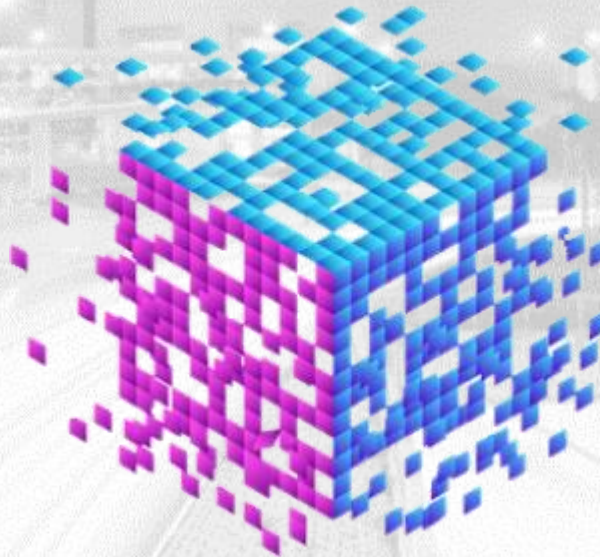
Not only expert in wireless sensor design, but also in data consolidation, storage, manipulation, analytic and data visualization.

Our experts help you to drill into the hidden meaning of data, and generate insight from the data.

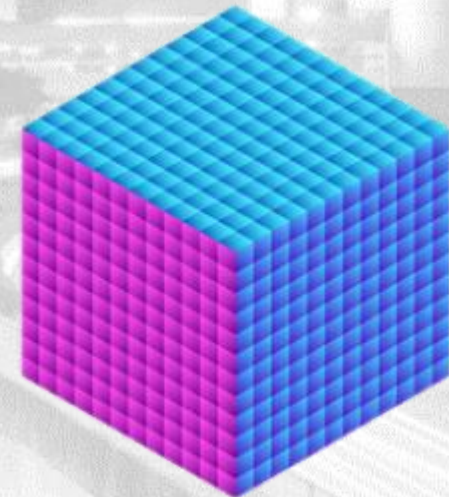
BIG DATA



Analytic



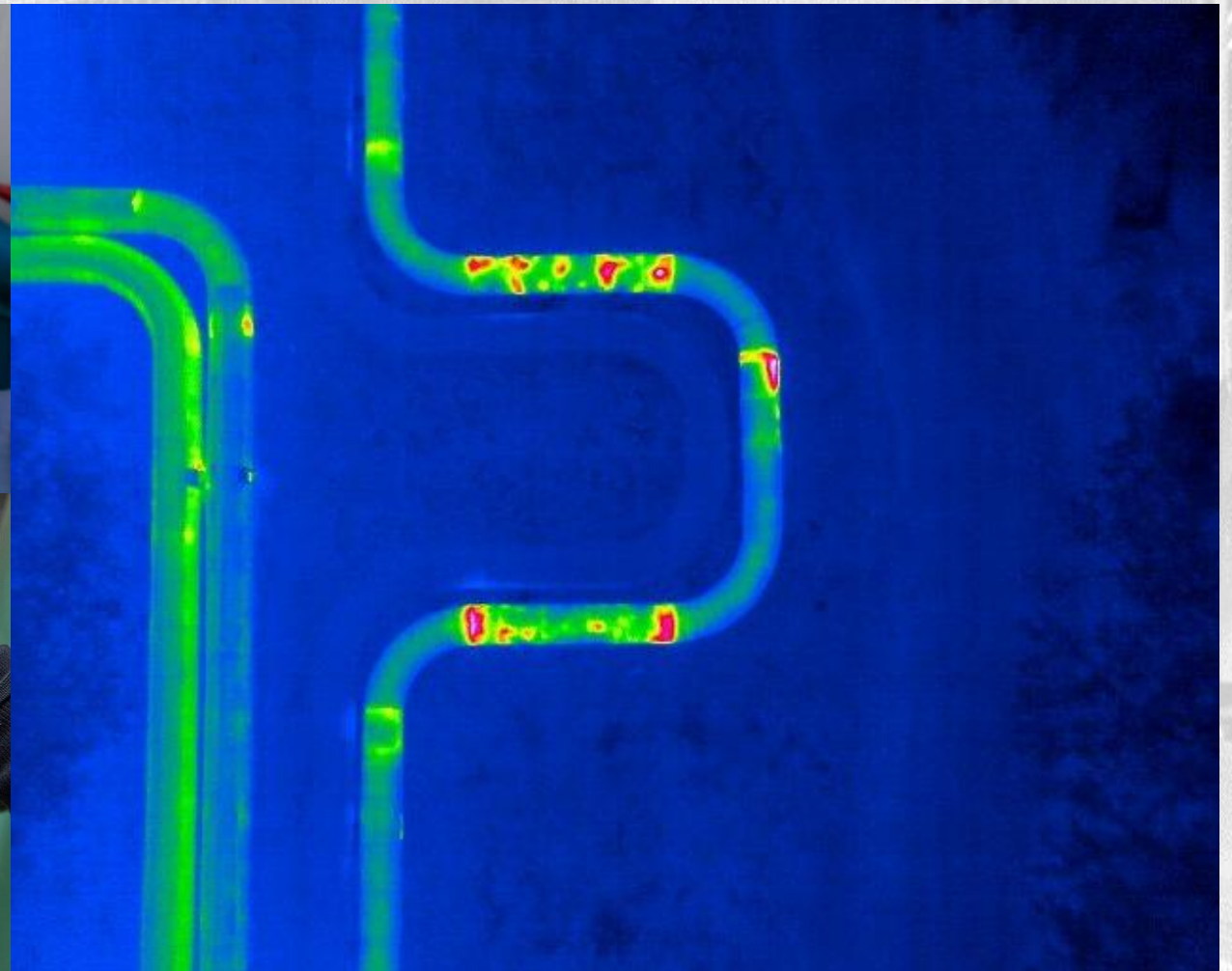
INSIGHT



Water Leakage Detection using Thermal-Camera



Thermal Imaging for Pipe Leakage - Illustration

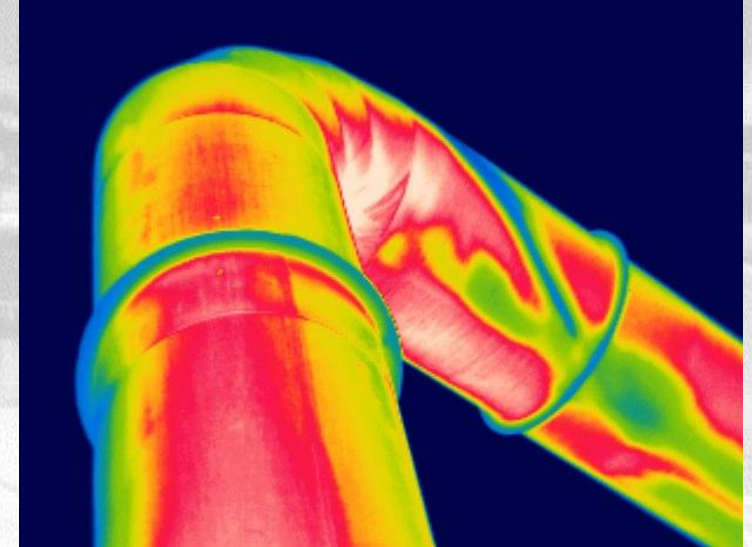


Principle

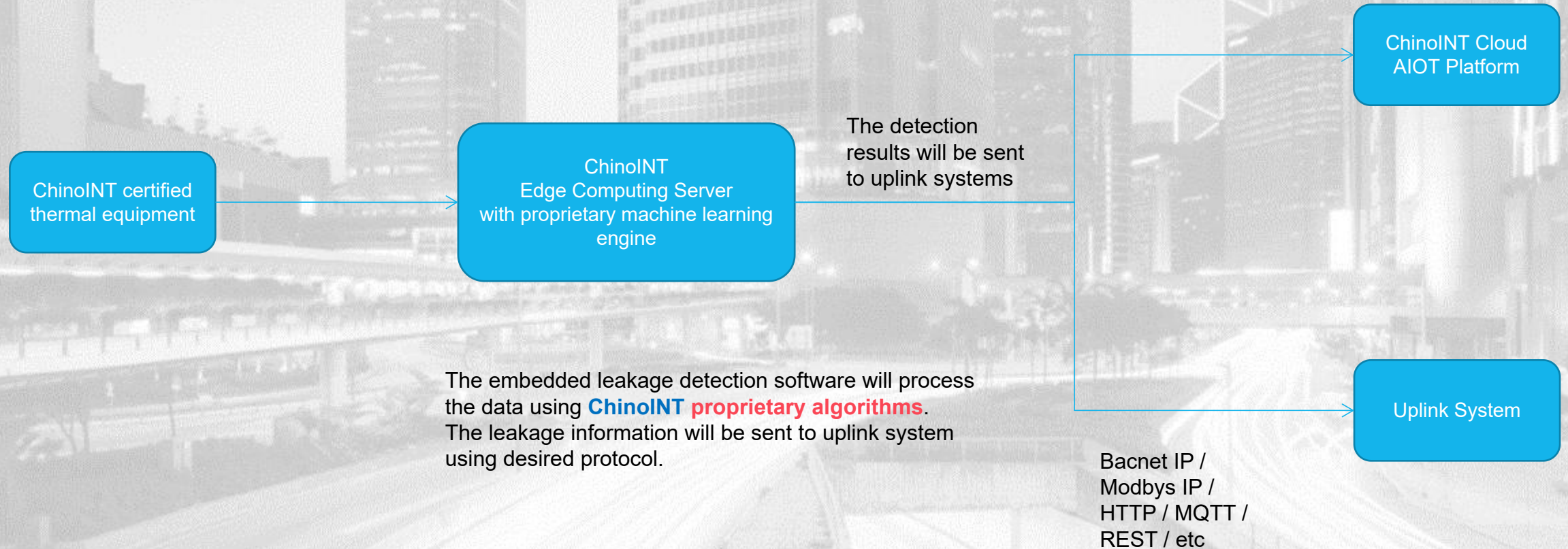
Water leaks can cause significant damage to a property and can be difficult to detect, especially when they are hidden behind walls or ceilings, or even in pipes. Traditional methods of detecting water leaks, such as visual inspections and moisture meters, can be time-consuming and may not always be accurate. However, with the advancement of technology, thermal cameras have become a popular tool for detecting water leaks.

Thermal cameras use infrared technology to detect differences in temperature, allowing them to identify areas where water may be present. This technology is particularly useful for detecting hidden water leaks that may not be visible to the naked eye. By using a thermal camera, homeowners and professionals can quickly and accurately locate water leaks, saving time and money on repairs.

Image on the right is a typical thermal image of water pipe. The colour scale reveal the water. By using time domain information and utilizes ChinoINT A.I. and machine learning engine, it is possible to generate insight about water leakages.



Possible Architecture



A.I. Applications & References

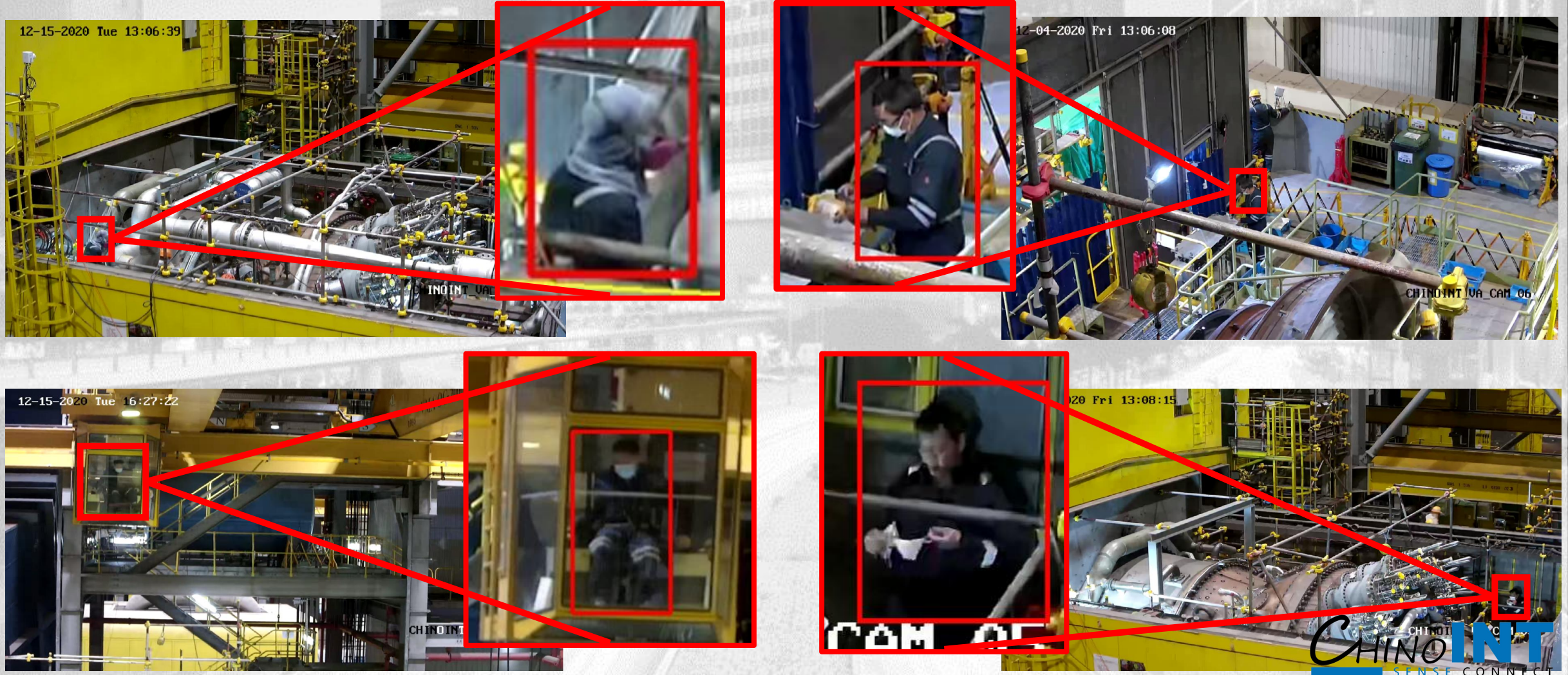


Video Analytic of SSSS - CLP



Safety Helmet Recognition

Able to catch workers without safety helmet onsite, safety issues have no way to hide



Safety Belt Recognition

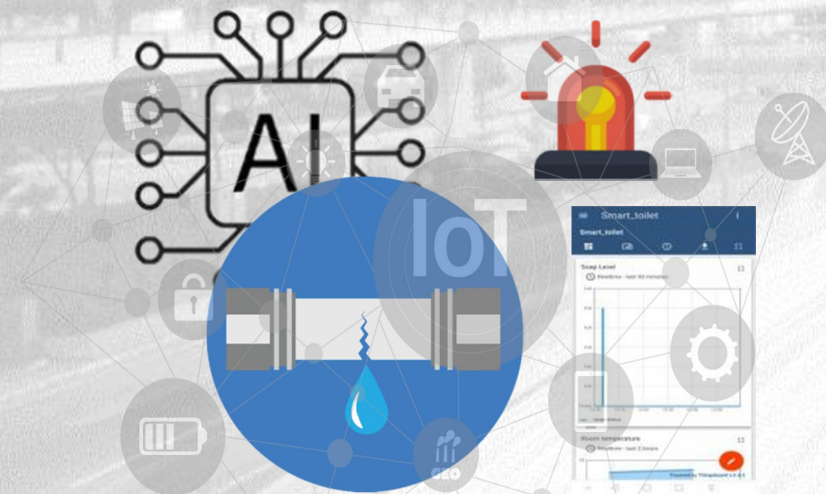
Able to catch workers without safety belt onsite, no alert for those with safety belt



A.I. Blockage Detection

Pipe blockage has long been one of top problems in buildings. Pipe blockage has been causing significant damages and lost in terms of equipment, man-power and money. Facility managements have been fighting with pipe blockage problems. Thanks to the advance in Artificial Intelligence, pipe blockage is now a readily solvable problem. Pipe blockage can now be predicted ahead of time and preventive measures be taken to avoid further lost due to the blockage.

The Blockage Detection System consists of the ChinoINT certified Blockage Detection Sensors, and ChinoINT Edge Computing Gateway. The ChinoINT certified Blockage Detection Sensor gathers ongoing information about pipe usage. The deep learning engine, based on Convolutional Neural Networks, learns the pattern from the data and built a model in the ChinoINT Edge Computing Gateway. Real time data from the sensors can then be analyzed and send advises to users in real time. The A.I. model is tailor-made and built to fit almost all type of pipe systems.



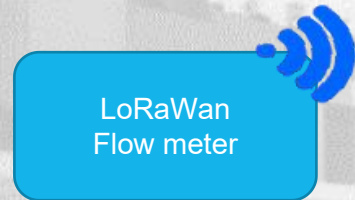
Readily Deployed Solution

ChinoINT Pipe Blockage Detection system has been deployed in Hong Kong, including local university and commercial buildings



A.I. Blockage Detection

ChinoINT



LoRaWan



LoRaWan
Edge Computing Gateway
with blockage detection
software built-in

The blockage
results will be sent
to uplink systems

Bacnet IP /
Modbus IP /
HTTP / MQTT /
REST / etc

Uplink Systems

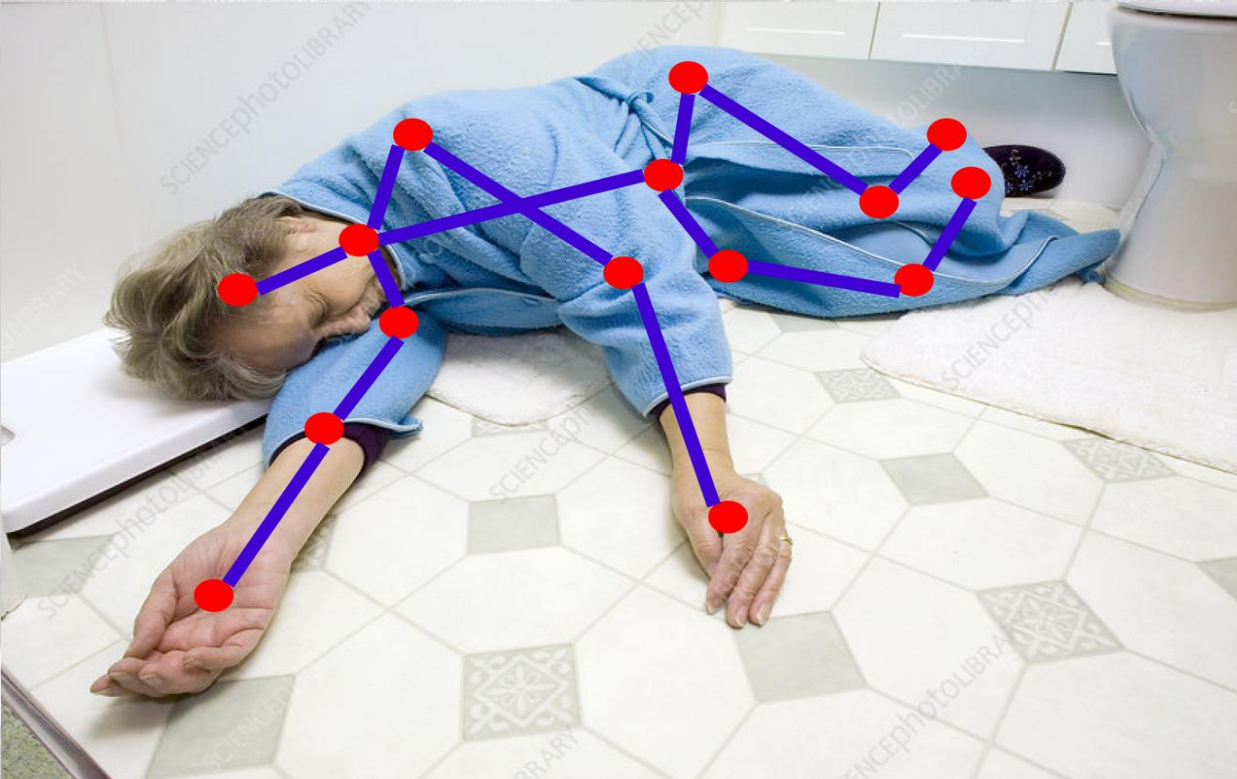
GWIN integration

GWIN

The sensor data from the LoRaWan
Flow meter are to be sent to
ChinoINT edge computing gateway..

The embedded blockage detection software will process
the data using **ChinoINT proprietary algorithms**.
The blockage end results will be sent to uplink system
(assumed to be Desigo here) using Bacnet IP.

A.I. Safety Monitoring Platform



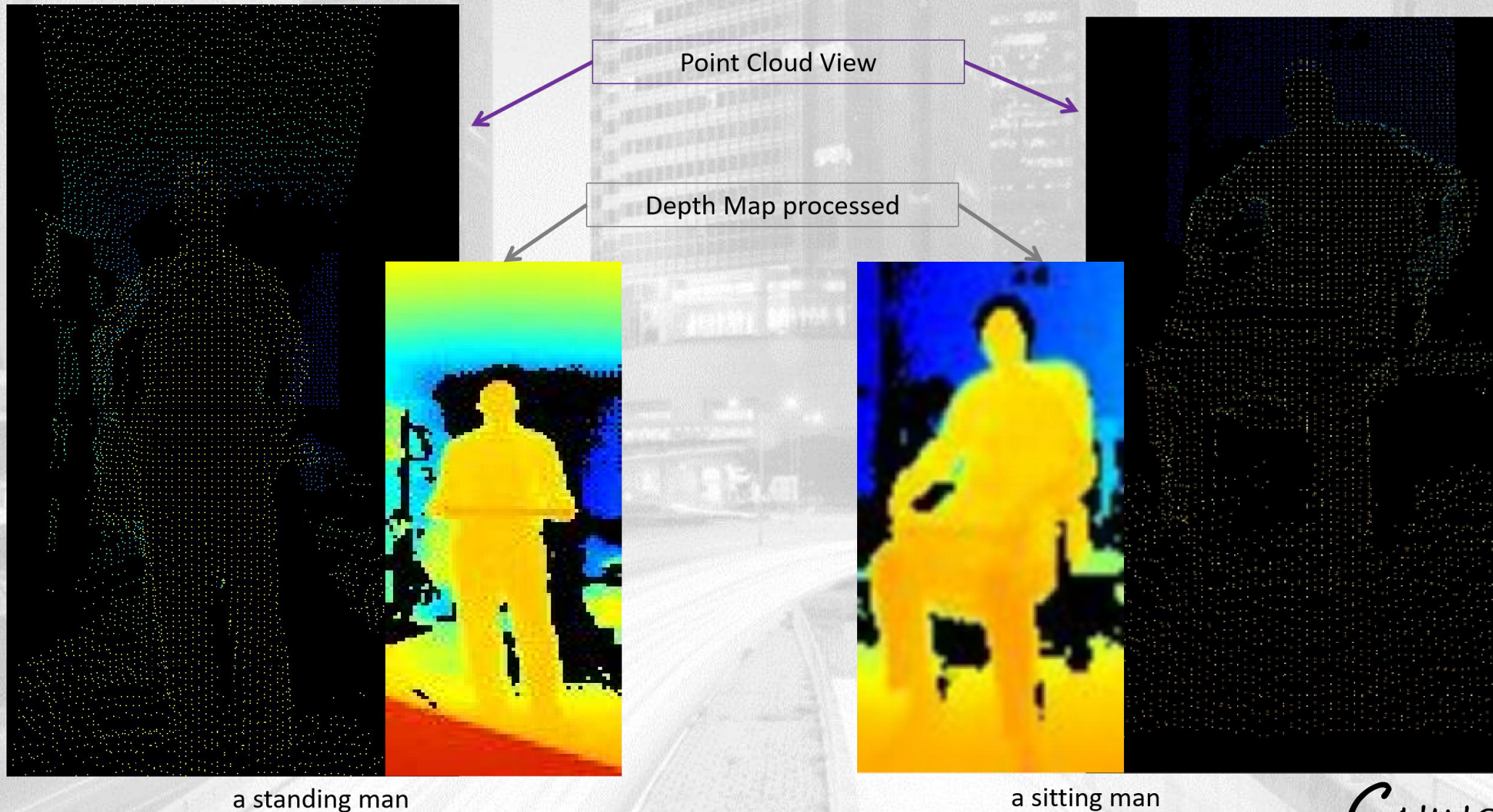
Advance Radar sensing

- > no information for identity recognition
- > extract human skeleton information
- > machine learning algorithm for prediction

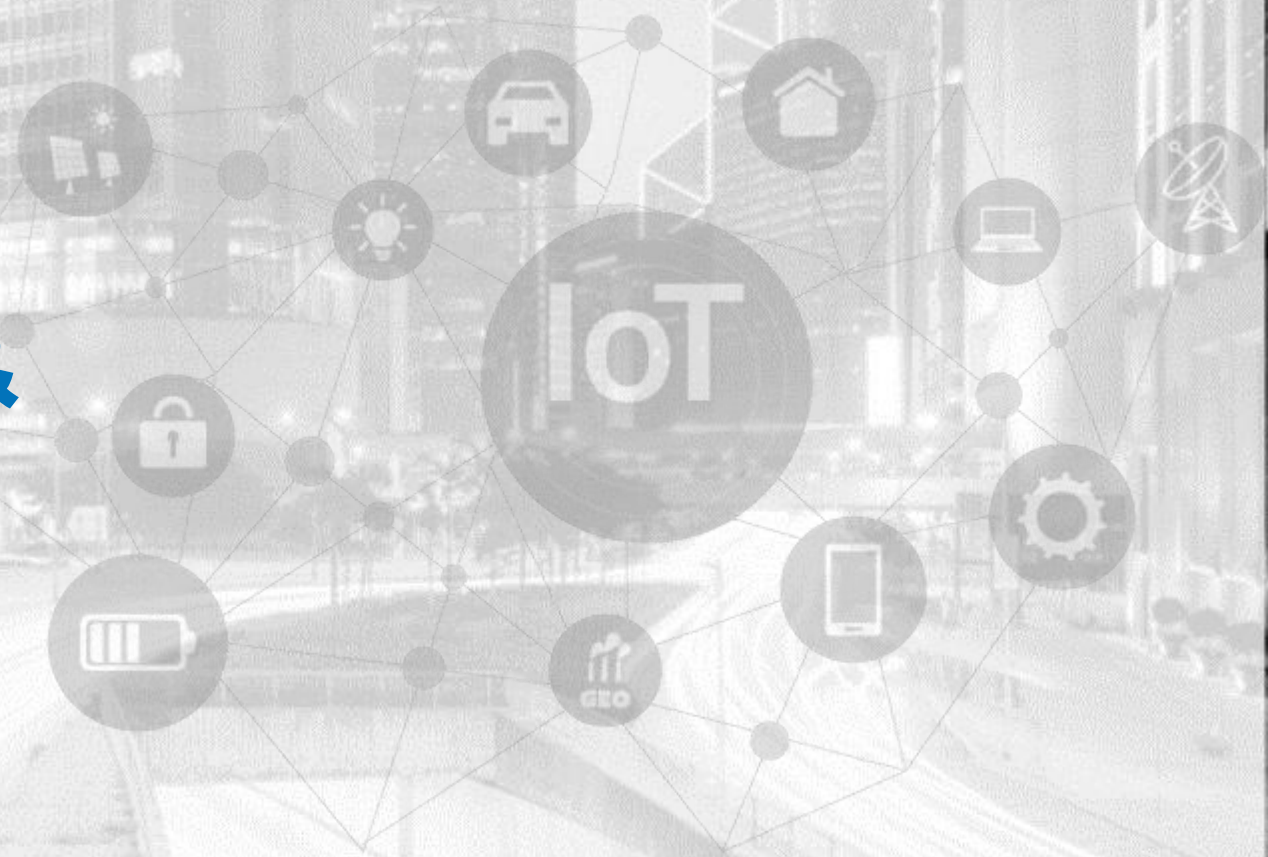
ViGiSense

A.I. safety monitoring platform

Privacy conserved, No Infringement



Classic Solutions & References



Smart Solutions Done Smartly

Region	Name	End user	Year of Completion
Hong Kong	SSSS - Confined Space management	CLP - Black Point Power Plant	2020
Hong Kong	SSSS - Confined Space management	CLP - Castle Peak Power Plant	2019
Hong Kong	SSSS - Confined Space management	CLP - Black Point Power Plant	2021
Hong Kong	SSSS - Confined Space management	CLP - Castle Peak Power Plant	2021
Hong Kong	SSSS - Confined Space management	CLP - Black Point Power Plant	2022
Hong Kong	SSSS - Confined Space management	CLP - Castle Peak Power Plant	2022
Hong Kong	SSSS - Turbine Work Safety Video Analytic	CLP - Black Point Power Plant	2021
Hong Kong	SSSS - Personnel management for containers during COVID	CLP - Castle Peak Power Plant	2021
Hong Kong	SSSS - 5G enabled Smart Construction Site Monitoring	Nga Ying Decoration Ltd	2023
Hong Kong	SSSS - 5G enabled Smart Construction Site Monitoring	Por Mee Factory Building	2023
Hong Kong	SSSS - UWB-enabled Collision Avoidance System for Vehicle	SUEZ - IWTS	2021
Hong Kong	Smart Metering - LoRaWan (POC)	SUEZ - IWTS	2021
Hong Kong	Smart Toilet - LoRaWan	Hong Kong International Airport	2022
Hong Kong	Smart Toilet - LoRaWan (POC)	Poly University	2021
Hong Kong	Smart Facility Management - LoRaWan @ M+	ASD	2021
Hong Kong	Smart Facility Management - LoRaWan	Kadoorie Estates Limited	2020-2023
Hong Kong	IOT Hub	Kai Tak Sports Park	2023
Macau	Smart Elderly Center - Zigbee	Vila Medalena Macau	2019
Hong Kong	Smart Metering	Poly U	2020
Hong Kong	Smart Toilet	Poly U	2022
Hong Kong	Smart Facility Management - Water leakage Detection	Queensway Government Office	2022
Hong Kong	Smart Visitor Management - People Counting	Hong Kong U	2020
Hong Kong	Smart Facility Management Notification Platform	Queensway Government Office	2023
Hong Kong	Smart Chiller Plant Monitoring	EMSD	2022
Hong Kong	Smart Chiller Plant Monitoring	EMSD	2023
Hong Kong	Smart Chiller Plant Monitoring	Poly U	2023

SSSS - Confined Space Management @ Power Plant & University



SSSS - Collision Avoiding System @ Transfer Station

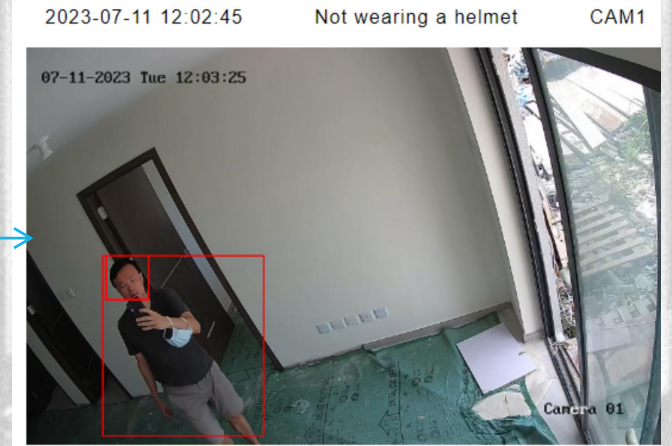
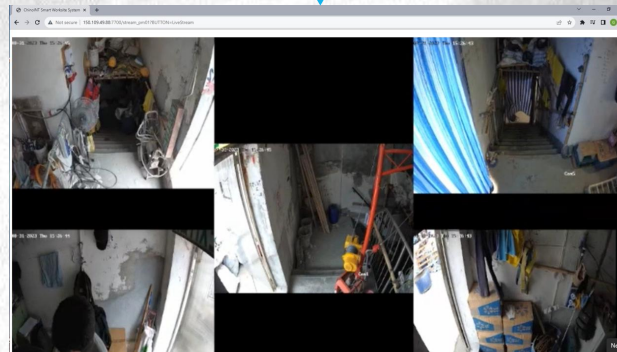
ChinoINT also masters on latest technology such as UWB to design real time monitoring system to raise safety to the next level



Rich functionality

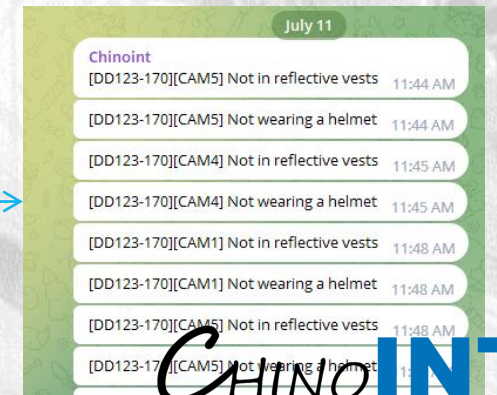
- Human face recognition
- human body recognition
- license plate recognition
- smoke and flame recognition
- helmet recognition
- phone calling recognition
- cigarette smoking
- gathering of people recognition
- work clothes recognition
- leaving work and sleeping recognition
- zone intrusion warning
- human fall recognition
- running recognition
- clothes color
- Fire escape blockage identification
- etc

SSSS - 5G AI Safety Monitoring



Platform alert: AI detects "not wearing a helmet" under CAM1

- Real time streaming
- APP Notification
- Evidence with photo



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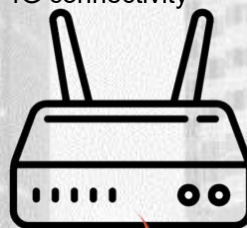
All-in-One IAQ sensor:
°C, Humidity, H2S, NH3, TVOC, PM2.5,
with HCHO, CO2, CO, O2, stc as options

Connection :
RS485/LoRaWan

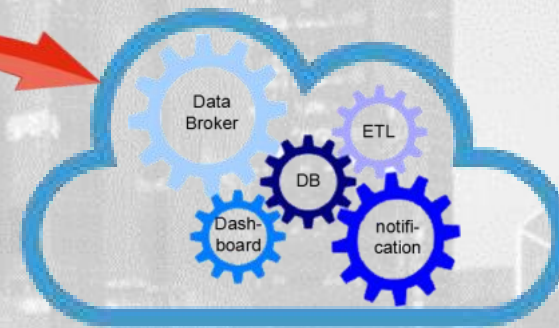


HKIA Smart Toilet over LoRaWan

Edge computing
LoRaWan Gateway
with 4G connectivity



4G



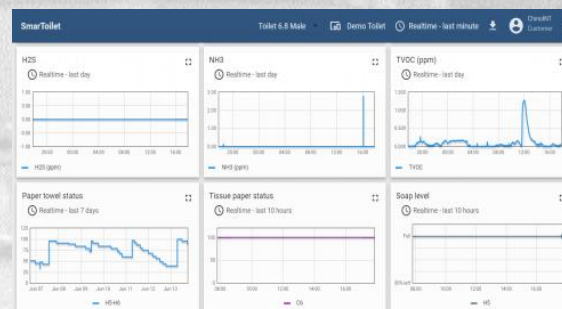
Benefits

- Latest long range low power wireless technology
- Tailor-made, fully integrated design to fit into existing equipment style
- Real time status for consumables, air quality
- On-demand cleaning to save > 60% of resource
- Clear dashboard for management team
- Real time notification for operation team
- Performance data for maintenance team
- Clean and neat on-site dashboard for airport users

Tailor-made, fully integrated, implicit design
LoRaWan sensors
running on battery with long battery life
for consumable status detection



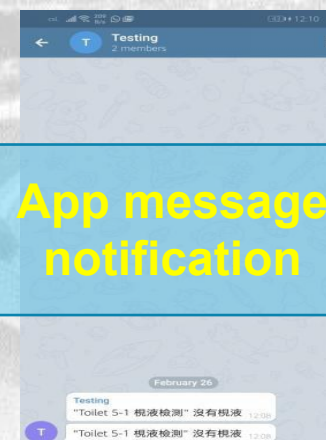
On-site dashboard



Real time alert for rubbish bin,
consumable, air quality, etc



App message notification

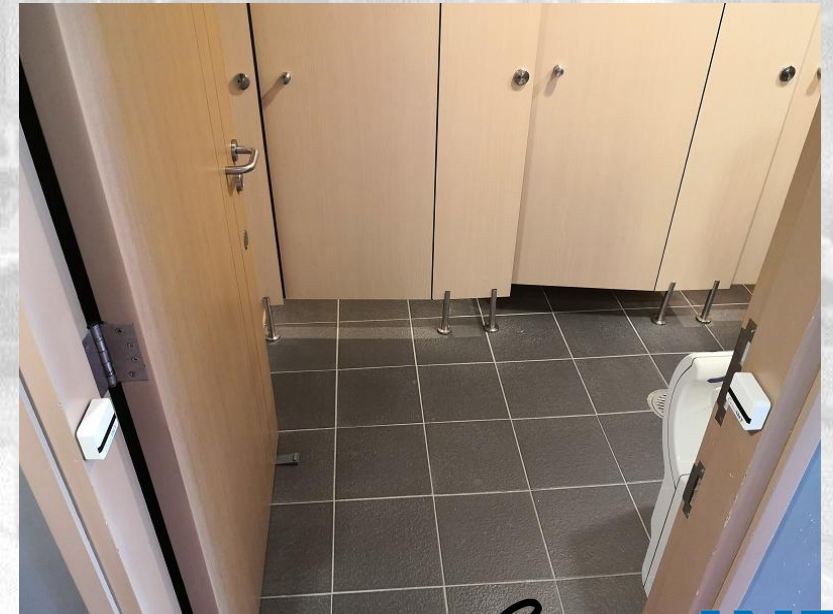


PolyU Smart Toilet



System Component:

- IOT Edge Computing Gateway
- Odor gas sensors
- People Counting solution
- RFID auto attendance system



Smart Elderly Center - Macau

Indoor Location

The Indoor Location system locates patients, nurses within the coverage of the Smart Hospital system.

Anti-Wanderer

The Anti-Wanderer system alerts when specific people gets out of the Smart Hospital area. This prevents from missing patients and elderly.

Nurse Call

Whenever in need, the patients, nurses and doctor are able to get immediate help by using the Nurse Call system, together with the Indoor Location system. No false alarm!!

Fall Prevention

Some patients and elderly are not quite mobile. The Fall Prevention system protects them by alerting related personnel to offer assistance when they need to move around.

Remote Home Care

Home pension is getting traction. The Remote Home Care system allows family and nurses to learn the status and needs from the home pensions.



Smart Chiller Plant and Switch Room Monitoring - EMSD & Poly U



Project Background

To maintain the environment safety and real time monitoring

Project Description

LoRaWan air quality sensors including Chlorine sensors are deployed. LoRaWan sensors such as people counter, water leakage, piep monitoring are being installed.

ChinoINT successfully deployed a LoRaWan infrastructure and achieved the above goals.



Smart Facility Management - Kadoorie Management



Project Background

A Hong Kong Real Estates Company would like to deploy a IoT system to collect the building alarms from remote sites (services apartment)

Project Description

LoRa sensors/LoRa Nodes for dry contact are deployed at their main building and remote site buildings to collect the alarm for water leakage, temperature & RH, water level, CT. pipe pressure, etc and transfer the alarms to main office via Internet.

ChinoINT successfully deployed a LoRaWan infrastructure and achieved the above goals.

Queensway Government Office - Water Leakage Detection & GWIN Integration

To deploy LoRaWan water leakage sensors and data integration to GWIN

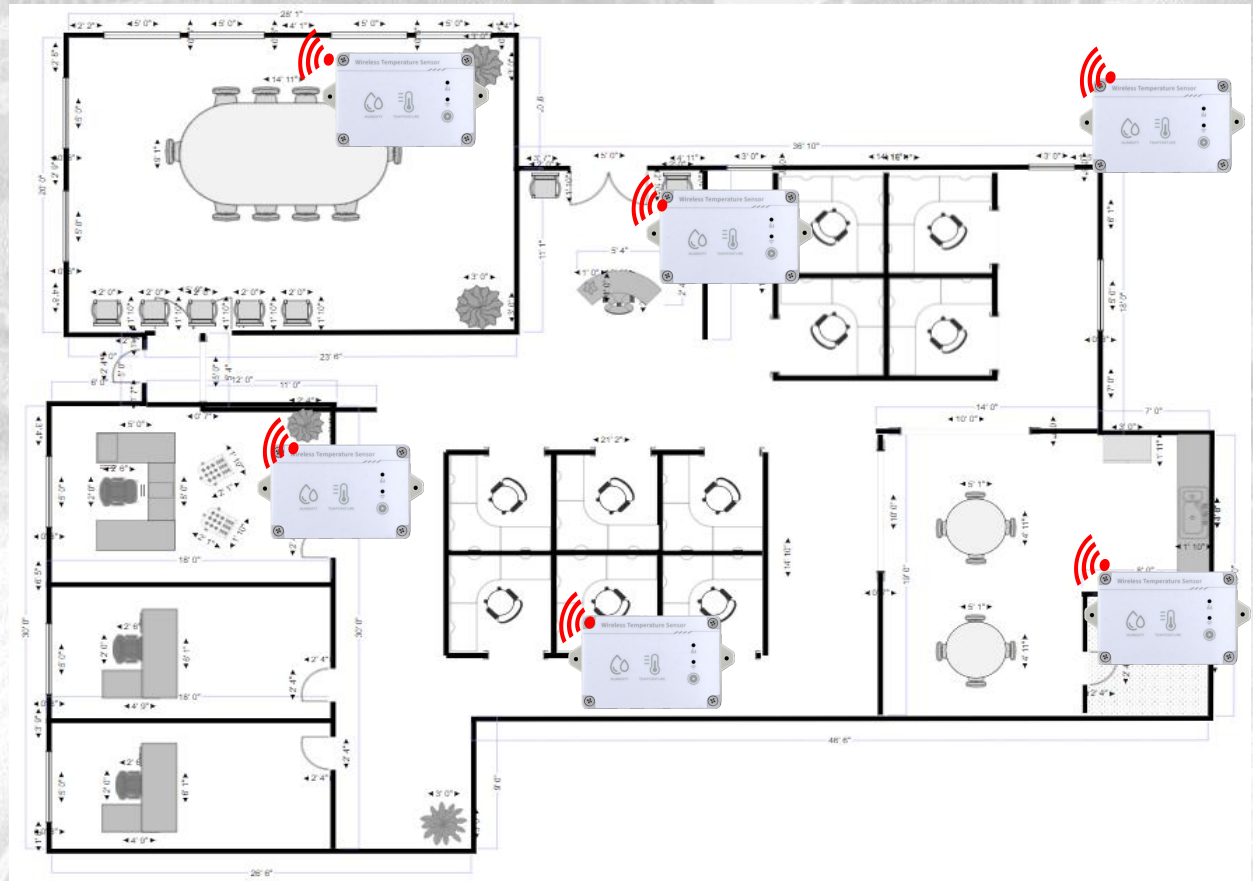


Automated Air/Con Automation @ M+

ChinoINT masters on wireless technology.

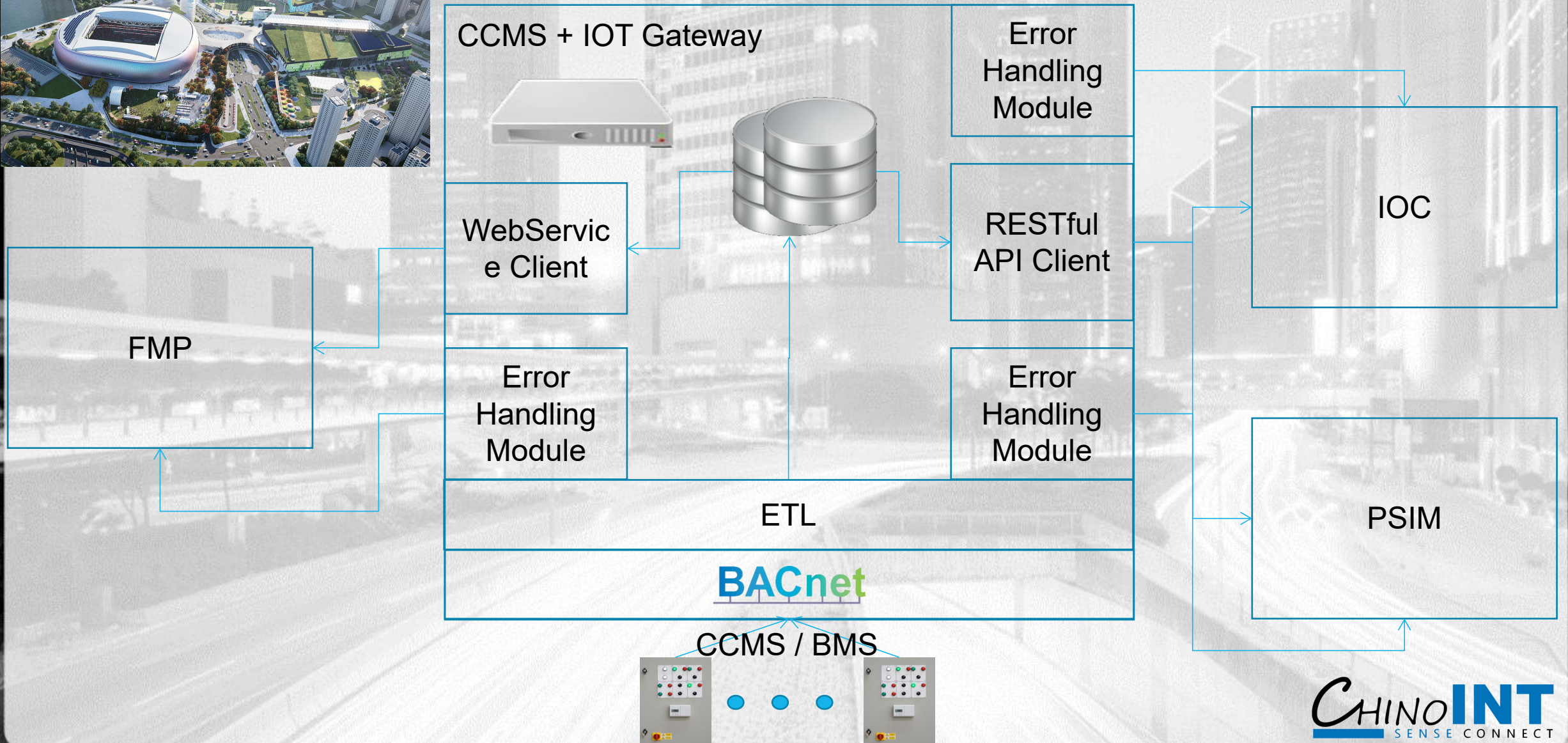
Temperature and humidity feeds to the IoT gateway.

Feedback to BMS and control HVAC locally





IOT Hub @ Kai Tak Sports Park



Smart Metering @ Transfer Station

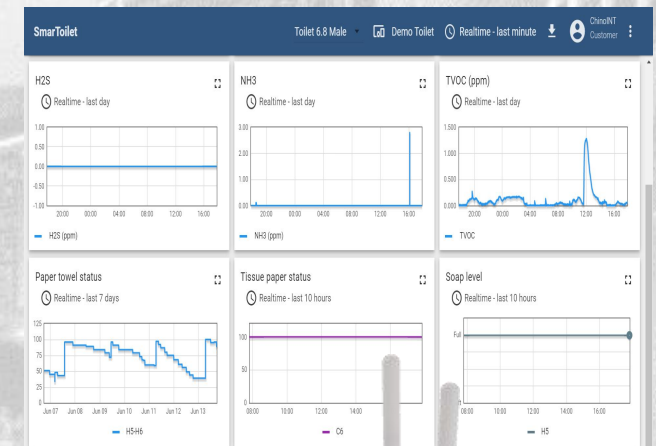
ChinoINT has show-cased our strengths in IOT technologies

We have enabled smart metering solution in Transfer Station in Hong Kong

Not only providing IOT metering with fully integrated dashboard with dashboard for real time and historical data, and also enabling real time analytic and alerts with extra values



LoRaWan Meter
Battery powered
(4.5 years battery life)





Thank You

sales@chinoint.com