



Hong Kong International Terminals optimize data centre operations with an IoT-enabled indoor air quality monitoring solution connected to the 0G Network

The Challenge

Hongkong International Terminals Limited (HIT) needed a solution to monitor remotely temperature and humidity in its data centres across nine different terminals at the Port of Hong Kong.

The Solution

HIT chose IoTTree to deploy an IoT-enabled solution to remotely monitor the indoor air quality across its data centres at the port. Sensors monitor temperature and humidity and share that information to a centralised web portal, via the Thinxtra 0G Network, to improve decision-making.

The Results

IoTTree's solution to remotely monitor indoor air quality in its data centres let HIT achieve:

- 24x7 monitoring of temperature and humidity levels
- fast issues identification and correction
- proactive maintenance
- independence from manual monitoring processes

0G Network Operator



Thinxtra, The IoT Telco, is the exclusive Sigfox 0G Network Operator for Australia, New Zealand, Hong Kong, and Macau and the sole distributor of Soracom cellular IoT services.

www.thinxtra.com

Solution Partner



IoTTree is a Hong Kong-based IT company that specializes in integrated Smart City IoT solutions and services that redefine how businesses operate.

www.iotree.hk

Customer



Hongkong International Terminals Limited (HIT) is one of several key container port operators in the Port of Hong Kong owned by Hutchison Port Holdings, the largest port operator globally.

www.hit.com.hk

Hongkong International Terminals optimises data centre operations with an IoT-enabled indoor air quality monitoring solution connected to the 0G Network

Hongkong International Terminals Limited continually sets industry benchmarks for port productivity, efficiency, and value-added services with modern management techniques, state-of-the-art technology, and award-winning applications.

The challenges with traditional indoor air quality monitoring solutions

Operating the world's largest port demands reliable data centre services 24x7. Temperature and humidity are critical to ensure optimal data centre performance. The temperature in server rooms must be kept between 20 to 21 Celsius (67 to 71 degrees Fahrenheit) and relative humidity must be kept between 40 and 60 per cent.

HIT needed a solution to monitor temperature and humidity in its data centres across nine different terminals at the Port of Hong Kong, spanning an area of approximately 2.7 km².

Conventional monitoring devices proved costly and cumbersome to install, operate, and maintain because of the need to be connected to power. Similarly, traditional wireless network connectivity solutions proved too expensive to scale or suffered from coverage gaps and faulty connectivity across the long distances at the port.

The value of IoT-enabled indoor air quality monitoring devices connected to the 0G Network

HIT chose IoTTree to develop an IoT-enabled solution to remotely monitor temperature and humidity levels inside its data centre rooms. IoTTree selected AirWit IoT sensors, created by Connected Finland, to specifically monitor indoor air quality conditions.

The sensors monitor air quality 24x7 and share that information in near real-time to a centralised web portal via the Thinxtra 0G Network, powered by Sigfox. IoTTree partnered with Thinxtra to connect the sensors to the long-range, low-power, reliable 0G Network, which provides low-cost connectivity across 90 percent of Hong Kong. Sensor connection to the Thinxtra 0G Network is fast and easy. Each sensor is powered by a long-life battery for approximately five years and requires no maintenance, making the solution simple to install and operate.

The IoTTree solution gives HIT building managers on-demand visibility to air quality insights on the web portal. If temperature or humidity reach unacceptable levels, the solution instantly alerts the building management team to take corrective actions. IoTTree also created a custom feature to alert building managers of undesirable temperature and humidity conditions via a messaging platform.

The IoT delivers exceptional operational outcomes to HIT

IoTTree's IoT-enabled solution to monitor indoor air quality in its data centre rooms remotely has helped HIT realise exceptional operational outcomes. HIT saves time and money because its team no longer needs to manually monitor conditions inside each data centre room. Continuous remote monitoring lets HIT detect issues early, which means less technology downtime and reduced interruptions to port operations. Other benefits include:

- effective 24x7 monitoring of temperature and humidity levels inside server racks
- instant alerts when abnormal temperature and humidity levels are detected to enable fast corrective action
- rapid detection of building assets needing maintenance to support ideal temperature and humidity levels



Thinxtra's 0G Network, powered by Sigfox, covers over 90 percent of Hong Kong. Partnering with Thinxtra lets us meet specific customer requirements with reliable, low-cost, long-range, wireless connectivity for a wide range of indoor and outdoor use cases.

Dino Wong, Sales Manager, IoTTree