

We Connect Everything to improve the quality of life

Smart Health Care System

All-in-one healthcare solution



"Care with Heart
the Heart has no wrinkles"

About HKC

Hong Kong Communications Co., Ltd offers a flexible and intuitive health-care solution backed by a range of patient monitoring devices and linked with our patient healthcare platform - i-Health Care System, which transfers the way of information to improve the quality of patient care, safety and service delivery. This solution integrates various advanced information technology and devices that transform healthcare.

i-Health Care empowers healthcare professionals with visibility solutions and analytics to advance the quality of care. Our technologies enable healthcare organizations to collect data from multiple sources - medical devices, patients and staff, gathering insight and seeing trends that allow you to predict and forecast. Using the latest in business intelligence and analytics, our software applications improve the bottom line by optimizing how hospitals allocate resources and respond accordingly through powerful analytics, decision-making tools, reports and dashboards.



Cloud Solution Platform

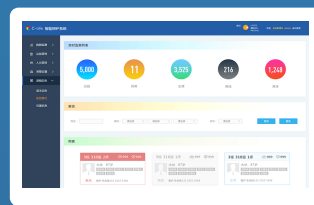
Real Time monitoring Cloud Management

Smart and intelligent patient care system



Mobile App
Real time monitoring of medical device/ services and track patients' medical record

HKC AI Platform
System data transmission



Emergency Alert
Detect patients' abnormal situation by sleeping belt. Trigger signal will be sent to solution platform to alert caretaker instantly for emergency help



Night surveillance system
Respiratory rate, heart rate and movement during night time will be monitored



Environmental Sensor
Monitor room humidity, temperature and surrounding noise level



Blood Pressure and Body Temperature Device
Measurement of blood pressure, blood oxygen saturation and body temperature



Health Report
Sleeping quality, heart rate and respiratory rate will be recorded and analysis



Improvement Measures
Monitor patients' behavior before bed time and record their sleeping quality to give suitable caring advice

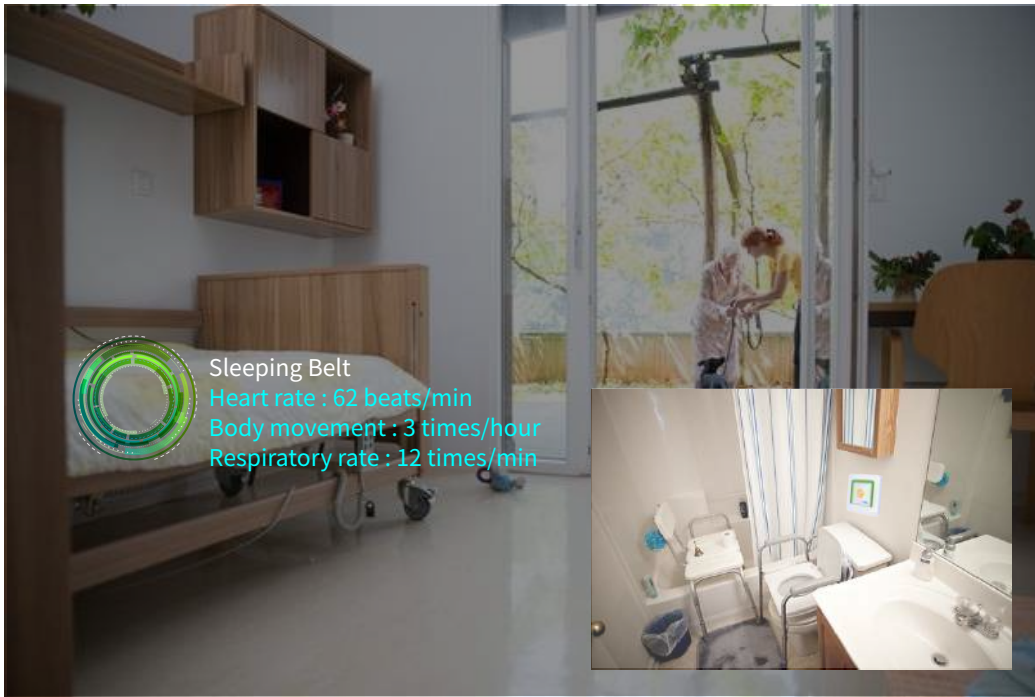
Protect patient with RTLS solution

Keeping people safe and secure in healthcare facility is a complex task. More patient to serve, increasing crime, tightening regulations and security challenges.

Anti-wandering system delivers a real-time location system working together with the wearable Wi-Fi tag that helps ensure the safety and security of your patients and staff. It helps to:

- Increase security for your patients
- Protect high-risk patients with full visibility and avoid wandering away
- Provide peace of mind for staff, patients and family
- Increase the efficiency of healthcare workers

Name	Location	Device	Elapsed Time	Status	Staff
Rm 324 User	Rm 324	Barcode C...	73:20:32	WIP-Reman...	None
Rm 324 B U...	Rm 324 B	Barcode Call...	72:49:07	Active-Rem...	
Rm 324 C U...	Rm 324 C	Barcode Call...	72:48:18	Active-Rem...	
Rm 324 User	Rm 324	Toilet Call U...	03:32:33	Active-Rem...	



Nurse Call unit

One large round button for nurse call with nurse symbol on the both panel and call cord

Contain build-in speaker on panel and microphone on both panel and call cord for patient and staff active communications

Call unit will send out alert signal to the central control office for real time record

Monitoring staff's service by recording the respond time



Smart Diapers

The smart diaper is designed with moisture level sensor and trigger alert signals to Central Control Platform or caregivers' smart watch if over 200ml of moisture level is detected, benefits from saving time compared to periodic physical checks by nurses. It can lead to great health concerns if a person's diaper go unattended.



Sleep Monitoring Belt

Sleeping Belt can be placed on bed to detect individual's heartbeat rate, breathe rate and movement. If abnormal situation is detected. Caretaker can instantly get notice for emergency treatment.



Bathroom / Toilet Call Unit

Patient pull the cord to call nurse / alert the alarm for emergency

Location information report to the central control office

Water-proofed

The use of Smart Mirror for Health Care



UWB PRECISE POSITIONING

Locate patient and device with accuracy of centimeter level



This location tag with high precision and high power adopts the Ultra wide-band technology. This type of locator tag is commonly applied to the positioning of personnel as working cards or armbands. Also, the high capacity Li-battery can offer longer service life compared to other ultra wide-band locator tags.

UWB Tag



UWB Anchor coverage distance 100m, positioning accuracy is 3cm-30cm, support for indoor and outdoor deployment.

UWB Anchor

Patients wear **UWB Tags** with high precision adopting the Ultra wide-band technology

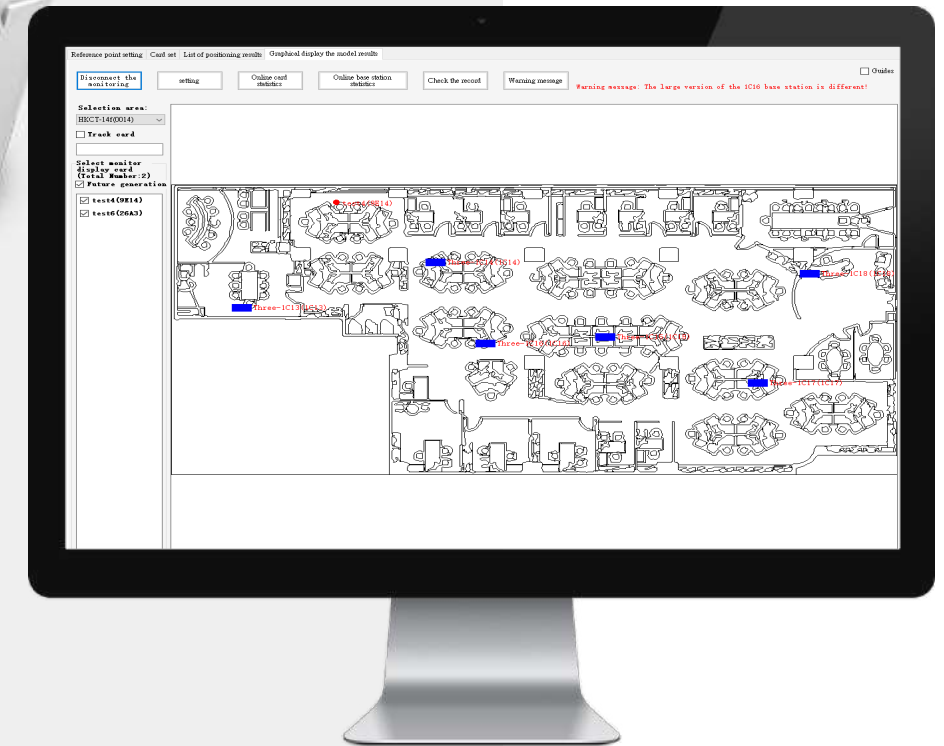
UWB Anchors are installed on the hospitals' walls or ceiling in fixed locations up to 25 meters apart. The anchors can be powered via USB or PoE (Power Over Ethernet). For example, a 10000 mAh USB battery can power the anchor for 50-60 hours or so.

At least 3 anchors are needed for a 25×25 space. The anchors synchronize their internal clock via Ethernet cable or WiFi and then listen for pings from the UWB tags. Once synchronized, they record the time when the signal was received and pass it to a backend "Real Time Location Server" (RTLS) which calculates the tag's position based on time difference of signal arrival at the anchors (TDoA).

RTLS Server

The RTLS apps subscribe to location updates from the RTLS backend service using standard web-sockets or RESTful APIs to read the location data of a tag. The RTLS has other nice features like recording location data and presenting reports like heat-maps and such.

UWB installations are far easier to setup than iBeacons and more predictable than iBeacon setups. What's needed are anchors on walls, RTLS Mini-PC box, tags and WiFi.



Real time location system

BLUETOOTH BEACON PRECISE POSITIONING



Wristband BLE Tag

This BLE Smart wristband in high-quality silicone is adapt for adults and children. This solution has been created for hospital/healthcare applications equipped with a one touch panic button.

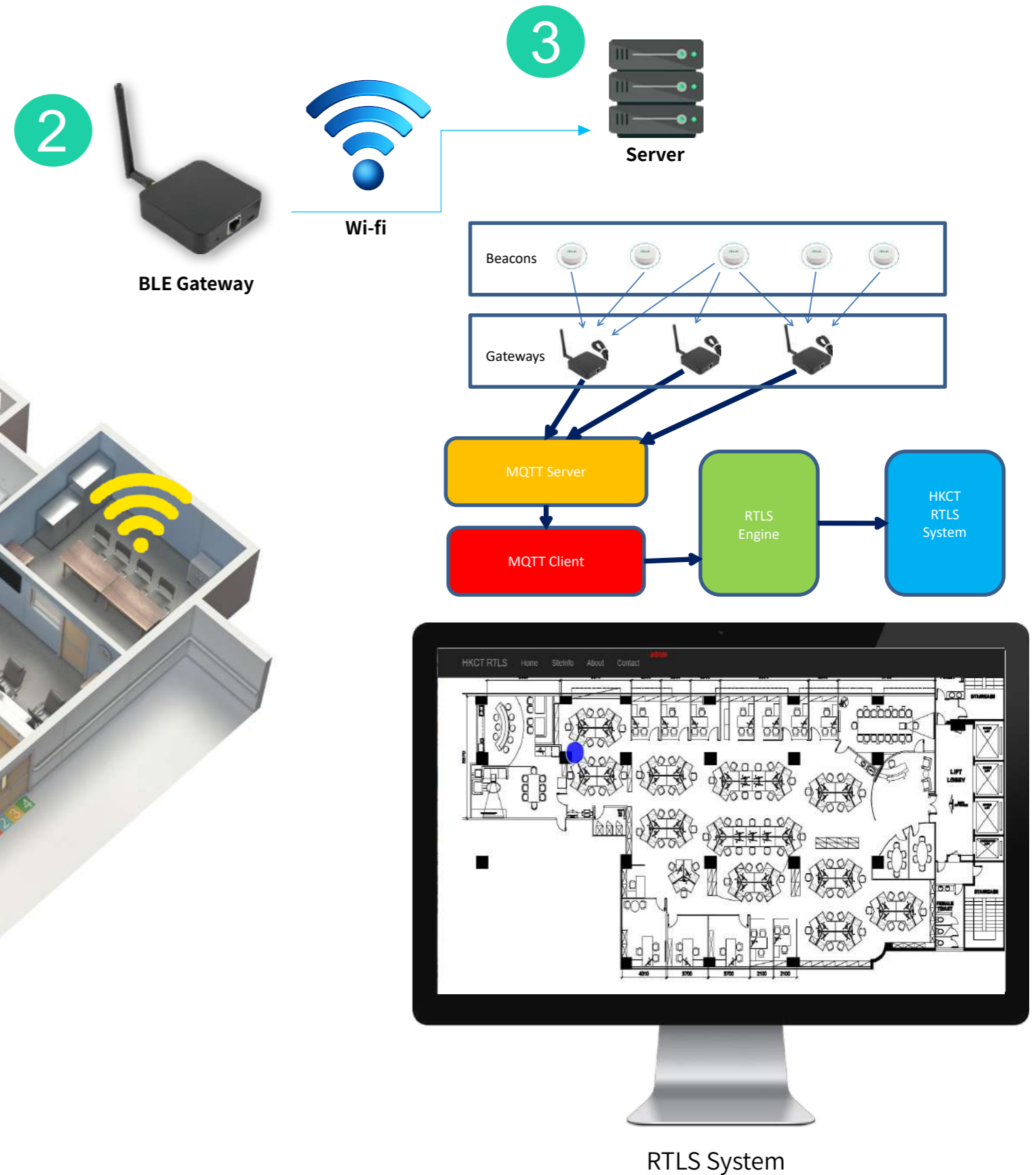


BLE Gateway

Bridge the BLE beacon to Cloud through WiFi
The gateway reads iBeacon and send to local TCP server or internet HTTP/MQTT server.

System Architecture

1. Bluetooth Low Energy (BLE) tags are worn by health care staffs or caretakers
2. BLE Gateways are installed throughout the premises
3. Gateway data is sent via Wi-Fi on premises server
4. Information on real time location and movement is displayed on customized app / web interface



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