BLE For Asset Tracking & Personnel Tracking In Healthcare Industry

BLE Development Team, GAO RFID Inc.

Asset Tracking Using BLE in Healthcare

Or

GAO BLE Beacon placed on Assets to Track

Wireless or Wireline

API

GAO BLE Gateway

GAO BLE Location Engine

GAO or Third Party Apllication

Asset and Personnel Tracking Using BLE In Healthcare Industry

Hospital assets can be tracked using BLE. For example, such assets as

- Hospital beds
- Wheelchairs
- Diagnostic equipment

Beacons can be placed on such assets.

For personnel tracking, beacons such as wristbands, badges, and keychains can be worn by doctors, nurses, other staff and patients.

Asset and Personnel Tracking Using BLE In Healthcare Industry - Continued

Gateways can be installed throughout a building, for example, on walls or ceilings.
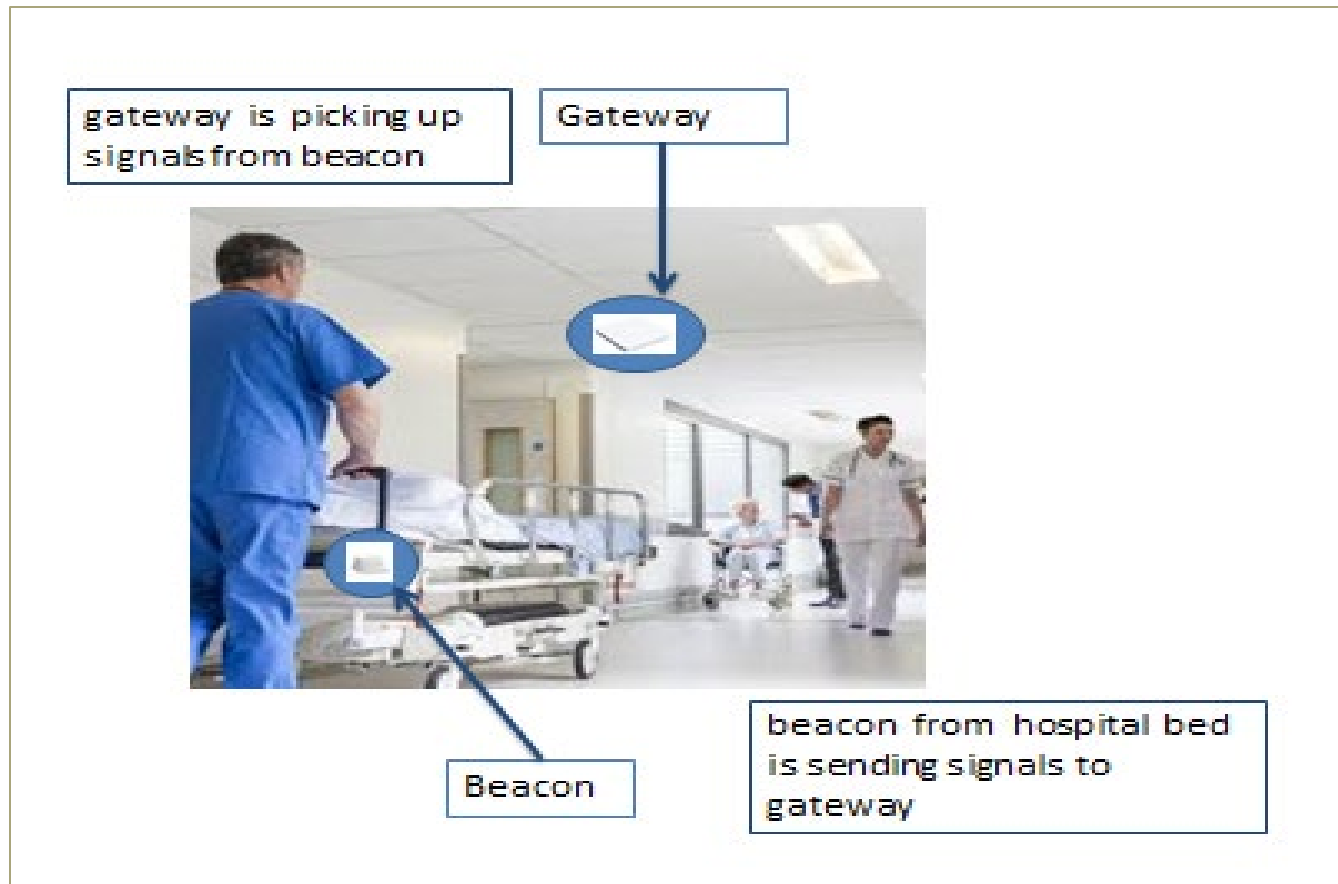
A gateway receives signals from a beacon and locates the beacon, hence track the asset or the people with such beacon

The gateway sends such location information to a server or cloud.
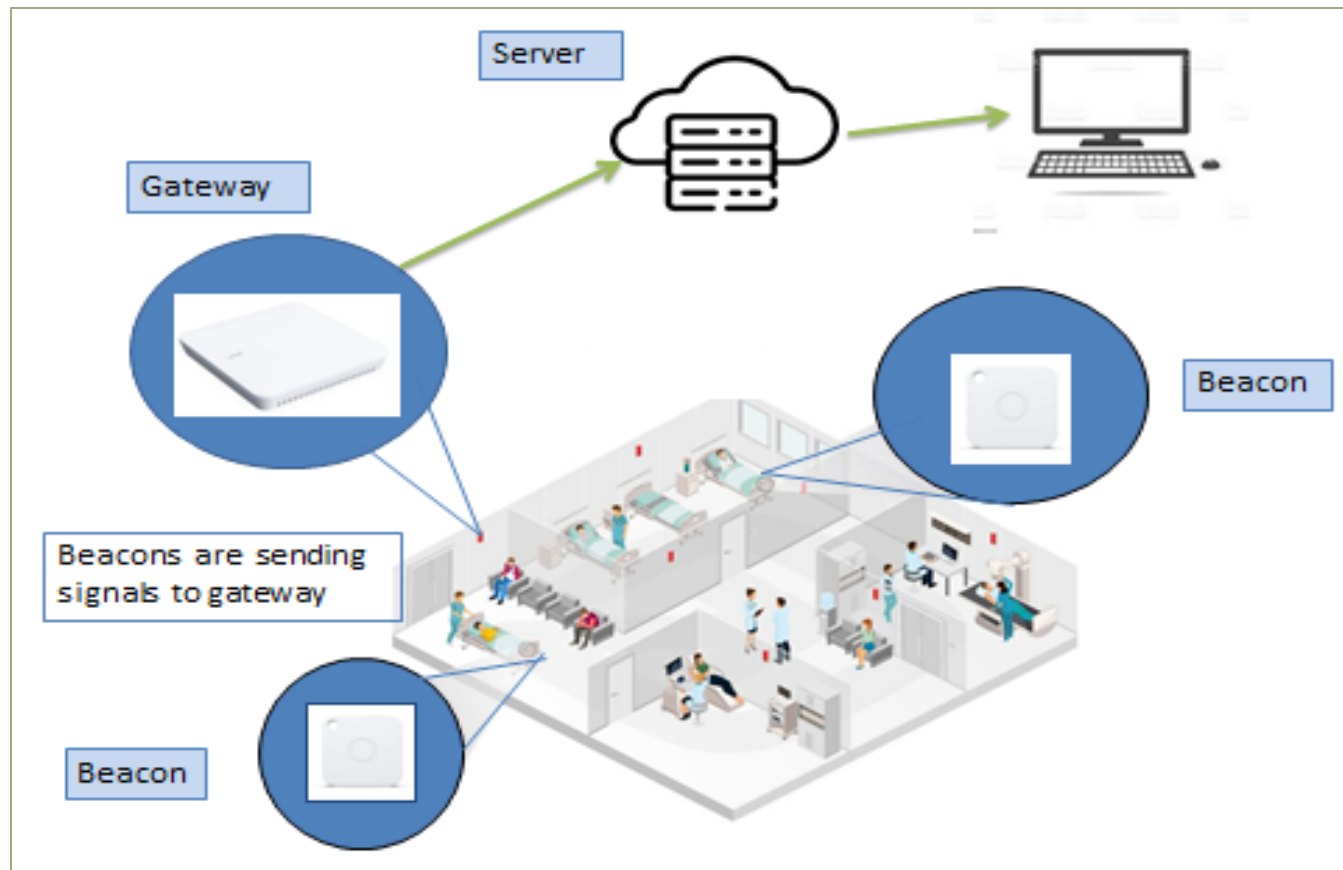
BLE Based Hospital Bed Tracking System

- Beacons are placed on hospital beds,

- Gateways, installed throughout the building, locate the beacons (hence the beds) and send such location info to a server or cloud running an application software, and

- The bed positioning can be viewed via a browser application or a mobile app.

BLE Based Hospital Bed Tracking System

BLE Based Hospital Bed Tracking System

Benefits Of Real-time Bed Tracking
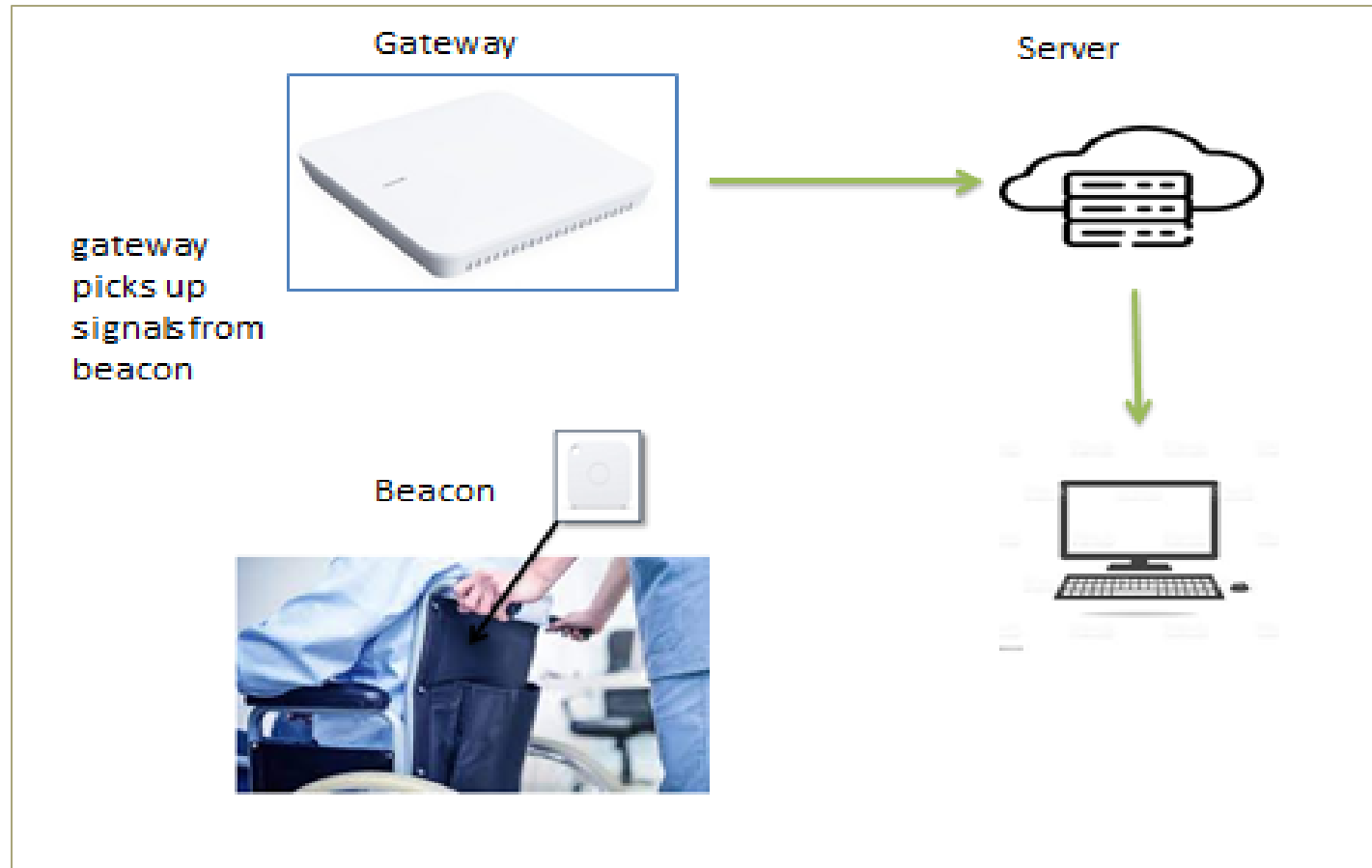
Benefits :

- Quickly identify a bed's location
- Streamlined bed maintenance
- Fewer missing or stolen beds
- Improved clinical staff efficiency
- A superior patient experience
- Optimize patient flow
- Fewer canceled surgeries

BLE Based Wheelchair Tracking System

- A beacon is placed at a secure position of a wheelchair such as its back,

- Gateways, stalled at desired locations throughout a building, shall pick up the signals from the beacons,

- The application software running on a server or cloud shall determine the location of a wheelchair based on the info from the gateways,

- Positioning of wheelchairs can be accessed by the users using a browser or smartphone APP.

BLE Based Wheelchair Tracking System

BLE Based Tool Tracking System

Tool asset tracking system helps locate disposable supplies (**e.g., boxes of gloves, packs of syringes**) and reusable medical tools (**e.g., scalpel, scissors, retractors**) and track vital information on their use (**e.g., expiration dates, data on sterilization**). The system analyzes the asset use and provides practical insights helping improve inventory management accuracy and efficiency.

BLE Based Equipment Tracking System

BLE Asset Tracking provides information about usage patterns, even when the equipment is not in use. It provides critical information for managing inventory within healthcare facilities, when assets are over utilized or underutilized. Using BLE Tracking Software, you are able to identify whether assets are in storage areas for longer periods of time or if they are regularly used in different departments within the facility.
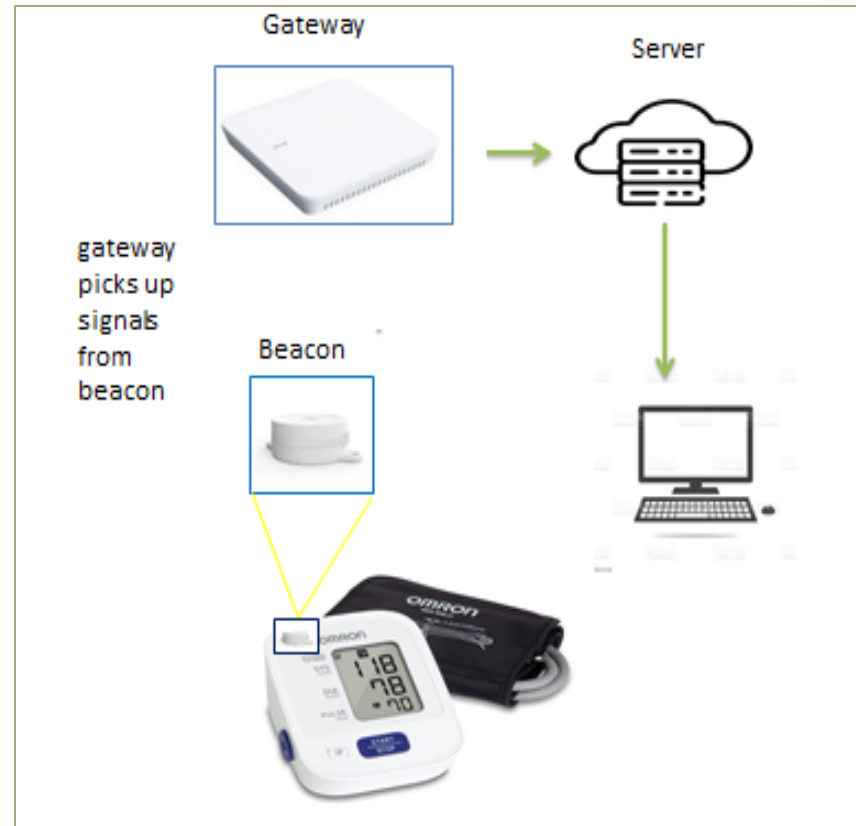
FUNCTIONS:

Tracking medical equipment location in real-time

Vaccine tracking and monitoring the temperature mode in the building

Asset Tracking in Pharmacies Using BLE Beacons

- In pharmacies, BLE beacons can be used to track the different types of assets like blood pressure machines, glucometers etc.

- The staff can track easily where the specific devices and medicines are placed.

- By placing BLE tags or beacons in different types of devices and medicine boxes, staff of the pharmacies can easily track the specific devices and medicines and provide service to the customers.

Gateway

Server

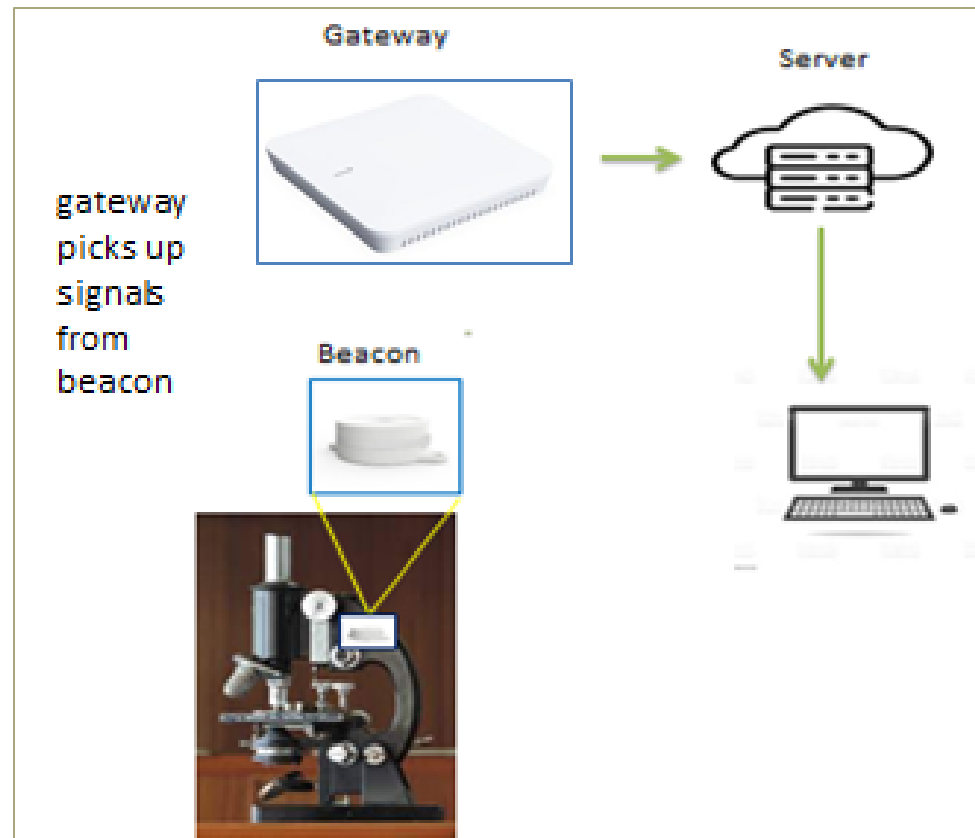gateway picks up signals from beacon

Beacon

Asset Tracking in Laboratories Using BLE Beacons

In laboratories, BLE beacons can be used to track the different types of lab assets- ,such as-

- Lab equipment
- Diffrent types of chemicals
- Lab devices

By placing BLE tags or beacons in different types of lab assets, it can be easily tracked where the specific equipment, chemicals and devices are located.

An Example: GAO RFID SKU#127040 IP67 Waterproof Beacon for Asset Tracking in Healthcare

BLE 2.45GHz Active RFID Tag/Beacon: It is a new generation beacon that is loaded with Bluetooth 5.0 hardware platform, and supports to advertise standard iBeacon.

This beacon can be used for tracking hospital beds, wheelchairs, diagnostic equipments and many more assets in healthcare industry.

Main Features:

- Standard iBeacon, free band of 2.45GHz
- Bluetooth 4.0/5.0 chipset
- The max. 100 meters reading distance with SKU#217030 gateway or any other Bluetooth Featured devices (e.g. iPhones, Android smart devices, etc.)
- IP67 waterproof housing
- Panic button design
- Built-in Accelerometer
- Optional NFC chip
- Battery Replace-able

An Example: GAORFID SKU#127028 Coin Beacon for Asset Tracking in Healthcare
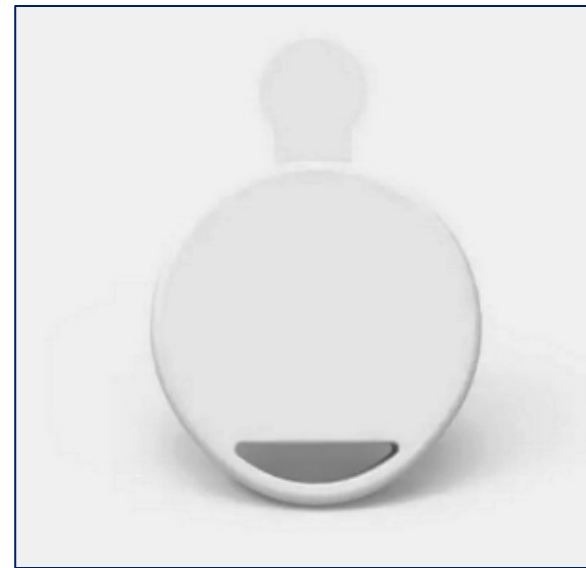
BLE 2.45GHz Active RFID Coin Tag/Beacon:

GAORFID SKU#127028 coin beacon/tag operates at 2.45GHz, the SKU#127028 coin tag is a new generation beacon that is loaded with Bluetooth 4.0 hardware platform, and supports to advertise standard iBeacon. SKU#127028 coin beacon tag combines standard iBeacon, Eddystone (UID, URL, TLM) together.

This beacon can be used for tracking mini lab assets in healthcare industry.

Main Features:

- Standard iBeacon, free band of 2.45GHz
- Bluetooth® 4.0 chipset nRF52 series
- The max. 50 meters reading distance with SKU#217020 gate way or any other Bluetooth Featured devices (e.g. iPhones, Android smart devices, etc.)
- Light weight and quite small form factor design
- Battery Replace-able

Suitable Gateway For Asset Tracking In Healthcare Industry Offered By GAO RFID Inc.

3G/4G/LTE/Wi-Fi/Ethernet BLE Active RFID Indoor Gateway:

GAORFID SKU# 217030 Gateway operates at 2.45GHz, 217030 is a Bluetooth low energy (BLE) to 3G/4G cellular/LTE, Wi-Fi, Ethernet, PoE connectivity gateway or signal receiver. The 217030 gateway collects the data from GAORFID's iBeacon and any other BLE devices, and then sends to the local server or remote cloud server by MQTT/HTTPS protocol over 3G/4G, Ethernet, Wi-Fi or PoE. It is easy to configure the 217030 gateway via a web/phone UI, and it supports remote configuration. Its slim design allows itself to be used in indoor environment.
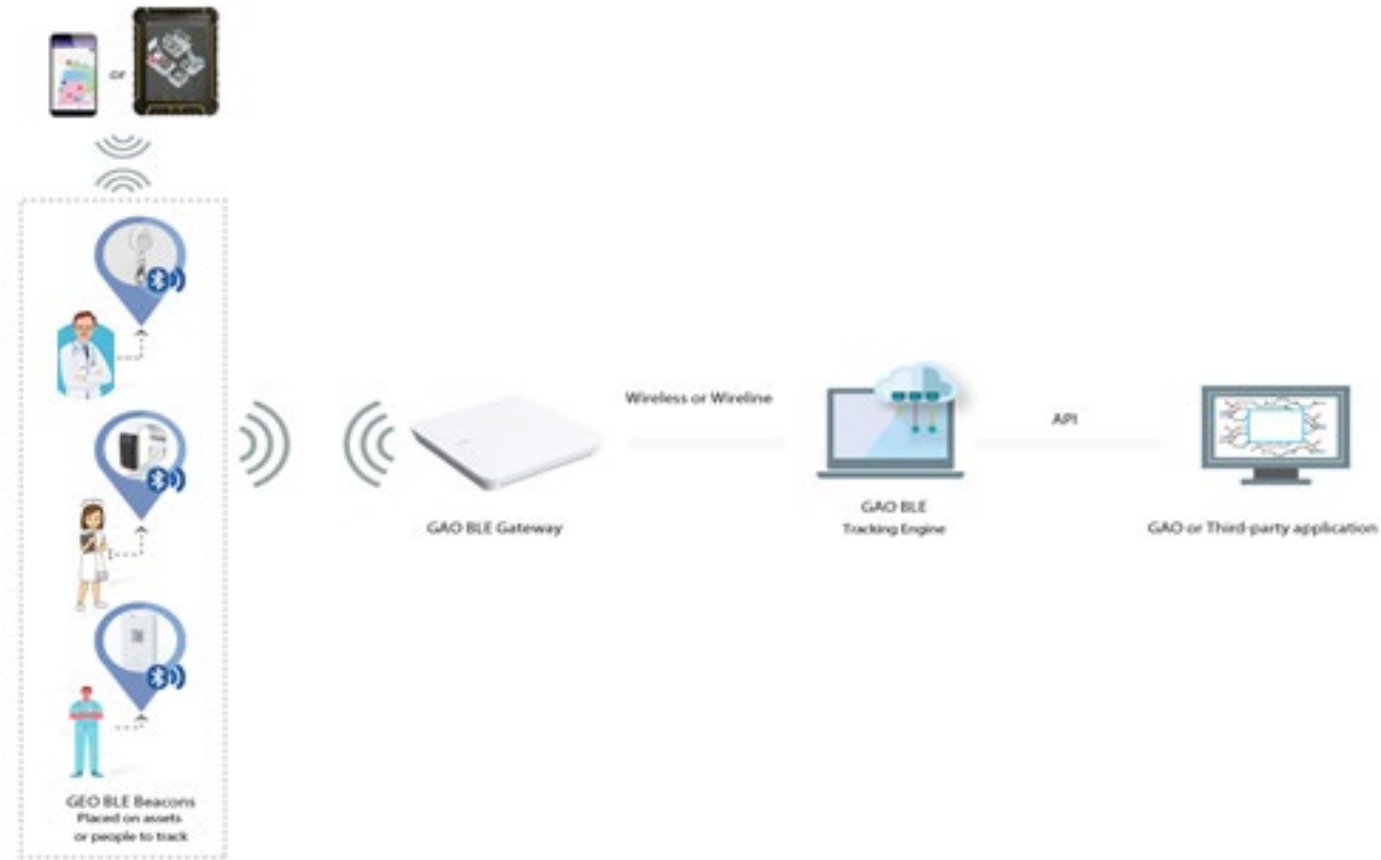
Main Features:

- 0 super Long reading distance Feature, up to 150 meters (490 feet) with tags
- Open protocol: Local server or HTTPS/MQTT to cloud
- Bi-directional: reads advertisement data and sends command
- Configuration: Web portal or phone app
- Interfaces: Built-in Ethernet/PoE/Wi-Fi or optional USB dongle of 3G/4G/LTE module.
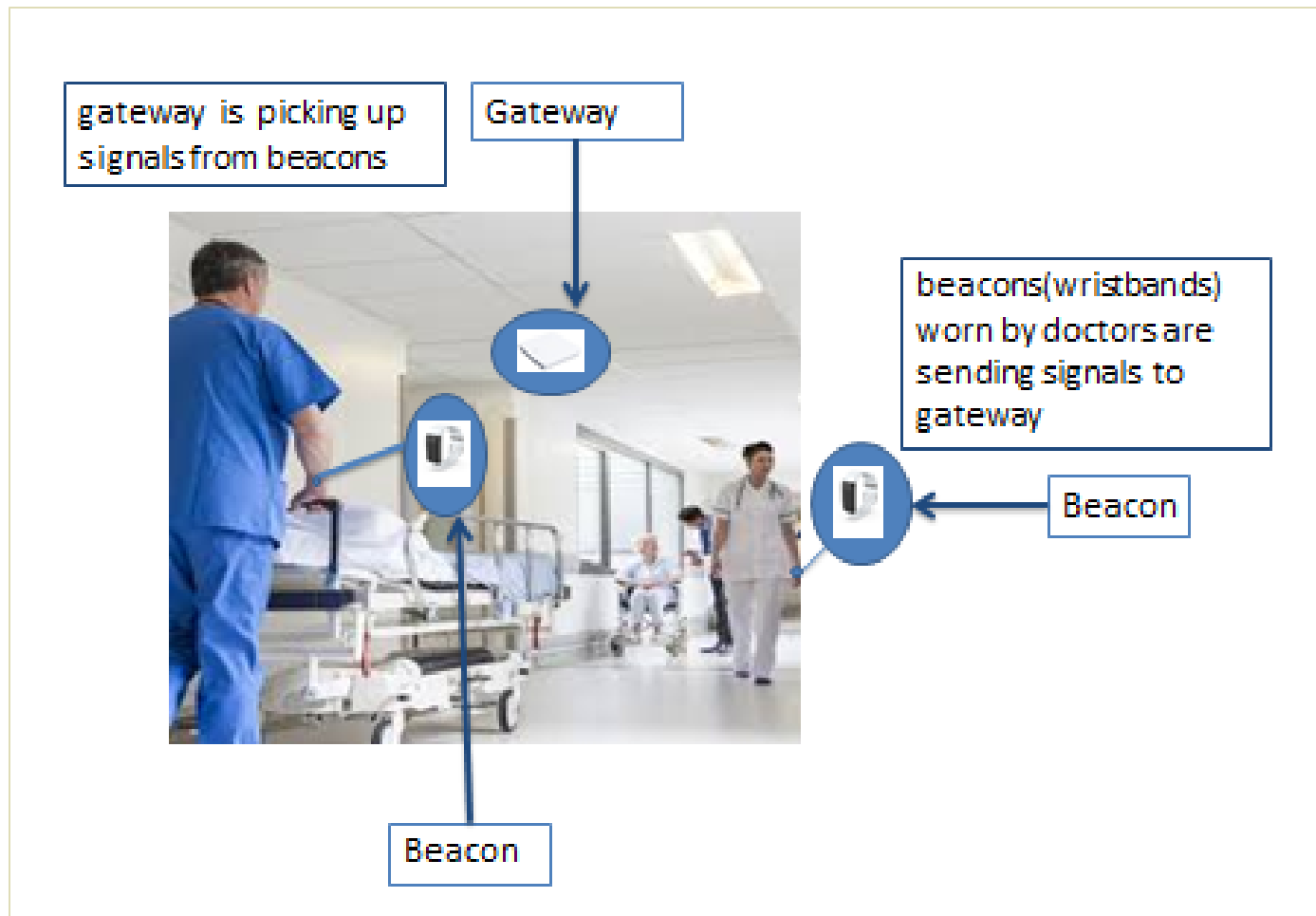
People Tracking

- Hospitals, clinics and nursing homes can use beacons such as wristbands, badges, keychains etc for tracking patients and employees,

- Every individual to be tracked wears a small BLE beacon, which is used to identify his/her locations,

- Gateways are installed at desired locations throughout the facility,

- The gateways receive signals from the beacons and then send the information to a server or the cloud, and

- Locations of such personnel can be viewed on a browser or smartphone APP.

People Tracking Using BLE in Healthcare

People Tracking

An Example: GAO RFID SKU#127020 Wristband Beacon for People Tracking in Healthcare

BLE 2.45GHz Active RFID Wristband Tag/Beacon:

GAORFID SKU#127020 Wristband beacon/tag operates at 2.45GHz, the SKU#127020 wristband tag is a new generation beacon that is loaded with Bluetooth 5.0 hardware platform, and supports to advertise standard iBeacon. SKU#127020 (B9 version) takes the design of tamper proof to completely secure the tag, and improve the waterproof grade up to IP66.

Main Features:

- Standard iBeacon, free band of 2.45GHz
- Bluetooth 4.0 chipset
- The max. 90 meters reading distance with SKU#217020 gate way or any other Bluetooth Featured devices (e.g. iPhones, Android smart devices, etc.)
- IP67 waterproof housing
- Tamper Proof for SKU#127020-B9
- Battery Replace-able for SKU#127020-B7
- Detachable wristband design

An Example: GAO RFID SKU#127023 Wearable Key Chain Style Beacon for People Tracking

BLE 2.45GHz Active RFID Key Chain Tag/Beacon:

GAORFID SKU#127023 Wearable Key Chain Style Beacon combines together with standard iBeacon and Eddystone (UID, URL, TLM). As one of the most popular beacons/active tags from GAORFID 12702x series for personnel tracking/management application, SKU#127023 tags can be widely used in healthcare industry with optional NFC/13.56MHz RFID chip inside.

Main Features:
- Lightweight, portable and stylish design
- Standard iBeacon, free band of 2.45GHz
- Bluetooth® 5.0 chipset nRF52 series
- The max. 50 meters reading distance with SKU#217020 gate way or any other Bluetooth Featured devices (e.g. iPhones, Android smart devices, etc.)
- Weatherproof housing with key-chain hole
- Built-in Push button for emergency call
- Battery Replace-able

An Example: GAO RFID SKU#127021 Personnel Card Type Beacon for People Tracking

BLE 2.45GHz Active RFID Personnel Card Tag/Beacon:

GAORFID SKU#127021 Personnel Card type beacon/tag operates at 2.45GHz, the SKU#127021 card tag is a new generation beacon that is loaded with Bluetooth 5.0 hardware platform, and supports to advertise standard iBeacon. SKU#127021 Card beacon tag combines standard iBeacon, Eddystone (UID, URL, TLM) and accelerometer sensor (optional) all together and simultaneously. The hidden push button can be used for panic / emergency / SOS need. LF(125KHz), HF(13.56MHz), UHF(868~960MHz) RFID features are optional either.

Main Features:

- Standard iBeacon, free band of 2.45GHz
- Bluetooth® 5.0 chipset nRF52 series
- The max. 100 meters reading distance with SKU#217020 gate way or any other Bluetooth Featured devices (e.g. iPhones, Android smart devices, etc.)
- IP65 waterproof housing
- Push button design for emergency call

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