Indoor Plus⁺

People & Technology

Digital Wayfinding and Indoor Navigation powered by IndoorPlus+ LBS

Overview

People and Technology (PnT) IndoorPlus+ LBS is a comprehensive solution to deliver digital wayfinding and indoor navigation on mobile phones or devices running on Android or Apple iOS.

Our digital hospital wayfinding systems improves navigation, reduces stress, saves time, and enhances patient satisfaction. It provides clear directions, easing navigation and reducing feelings of being lost or overwhelmed. Efficient routes and walking times save time for patients and staff, enabling quicker access to appointments. The system also streamlines workflow, minimizing delays and missed appointments, improving operational efficiency and fostering a patient-centered environment.
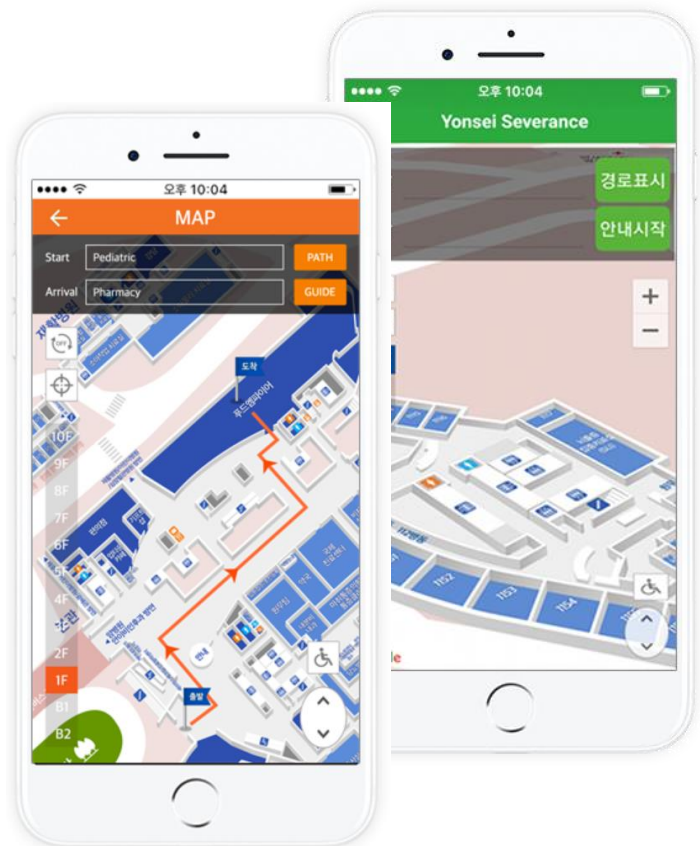
Typical Use Cases

- Turn-by-turn indoor navigation for visitors or outpatients
- Staff navigation associated to Asset Tracking or Alarms
- Navigation service combined with appointments for inpatients or outpatients.
- Push content based on location inside the hospital

Location accuracy

To achieve the high positioning accuracy and low latency required for a superior indoor navigation experience, the IndoorPlus+ LBS solution relies on hybrid multisource positioning technology.

The positioning algorithm processes signals from Bluetooth (BLE) beacons, Wi-Fi networks and magnetic field sensors, combined with inertial navigation (using PDR, accelerometer, gyro sensor) and map matching technology.

Modular Architecture

IndoorPlus+ LBS consists of several components:

- A Software Development Kit (SDK), embedded in the mobile application, captures the location and sensor signals to translate them into real-time location information that is used by the mobile application to provide navigation information on a map.

- IndoorPlus+ Back-end Platform providing the necessary administration and operation services like device management, maps management, geofences, event notification and push content, administrative dashboards, logging.

- Documented APIs to integrate with other information systems or provide access to other applications to map display and navigation as well as an Event Delivery Engine.

- Mobile Application: user can access wayfinding services thru either a standalone Mobile Application or as a menu item of wayfinding

services of the existing or legacy Hospital or Clinic Mobile Application Portal.

Typical features of a wayfinding mobile app include interactive maps, turn-by-turn directions, search functionality, real-time location tracking, points of interest, accessibility features, multi-floor navigation, and integration with external services.

These features enhance the user experience and facilitate easy navigation within unfamiliar environments.

IndoorPlus+ LBS SDK Feature

Item	Features
Location signals	• BLE (Bluetooth Low Energy) Beacons, Wi-Fi, Magnetic field, accelerometer and gyro-sensors
Mobile SDK	• Download/Update resource data from IndoorPlus+ Backend Platform - Map images - Building´s fingerprints (BLE, Wi-Fi and magnetic) - Contents Mapping Information - Node and Node-edge information - Geofence information • Collects locations signal • Embedded geolocation algorithms • Built-in Map Service • Location-based triggers events (Welcome, In/Out) • Geofence In/Stay/Out calculation
Mobile OS Versions	• Android 6(23) to 13(33) • IOS 11.0 to IOS16.x

IndoorPlus+ LBS Backend Platform

Item	Features
Fingerprint databases	• Keep the signal fingerprints of the building •
Maps	• Floor maps • Geofence´s plan • Routing Nodes and Points of Interest
Geofencing	• View, add, delete geofence • Set values for calibration time to determine entry, exit, stay in the selected geofence
Services	• View, add, delete events • Set the conditions for event triggering
Contents	• View, add, delete contents • Basic Event content management • Mapping event to selected location beacons • Manages content mapping
Monitoring	• Checks location beacon status • Dashboard and History
Statistics	• When enabled, generates mobile path record and statistics
Settings	• Account, Usage Settings management Site information

Contacts

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