Navizon Indoors

Navizon Indoors provides location for mobile apps with an accuracy of about 6-10 feet/2-3 meters. Detection hardware is not required at the site. A site survey to "train" the system is required beforehand.

**What it does**

Navizon Indoors provides mobile apps with the current location of their device. Apps may run on smart phones, tablets or custom devices. Both iOS and Android devices are supported.

**How it works**

Navizon Indoors has two components: a mobile app installed in the device and a cloud-based server to compute locations.

Navizon Indoors requires first a site survey ("training") of the site. Training is done with Navizon's app for Android or iPhone, creating a database of radio signal "fingerprints" throughout the site.

The target area or site can be any environment rich in Wi-Fi access points and hot-spots. Conversely, an area poor in Wi-Fi signals will likely do poorly, as well, for Navizon Indoors.

Mobile apps that leverage Navizon Indoors positioning can be compiled with Navizon's SDK or simply query Navizon's REST API. The mobile app will perform a scan of its environment and send the collected data to Navizon's cloud-based server. The server will compare this "fingerprint" against the database, and return the estimated device's location.

**What is Site Surveying or Training**

In an office or residential building that has dozens of access points and hot spots, the signals and their strengths will vary widely in different areas.

A site survey builds a database of signal identities and strengths sensed at multiple known locations. Once the survey is complete, determining a mobile device's specific location within the site, requires taking a snapshot of local signals at the device's current location. Pattern-matching that "local fingerprint" against the database will determine its approximate position.

**Training a site**

Training requires the Navizon app on an Android or iOS device. It requires moving across the site taking signal snapshots or "local fingerprints" at specific locations, identifying access point sensed and their RSS value.

First, site floor plans must be uploaded to the Navizon account. Then a training strategy should be chosen: either ad-hoc, unplanned or following a predefined route.

Ad-hoc reference points, or **unplanned training** collect data at random locations around the site. Simply select a point and...
stand there for a few seconds until the measurements are taken. A predefined route is a list of locations pre-selected on the map.

Under Ad-hoc mode, simply select a point and stand there for a few seconds until the measurements are taken. Under unplanned training and predefined route the site trainer continues walking at a steady pace, standing at each spot on the floor plan displayed by the Navizon app to trigger a snapshot.

Integrating a mobile app
Navizon Indoors is SaaS; the server runs on a public cloud. Any authorized app may query Navizon Indoor server either via the SDK or the RESTful API to obtain its device’s position. Any app able to use Web services running on a Wi-Fi enabled device is supported.

Sample Applications
- **Tourism**: Navigation app for travelers at airports or railway stations help locate the departure lounge, boarding terminal, security control or VIP lounge.
- **Retail**: Way-finding app for shopping malls guiding visitors to the desired shop or to product sections in a supermarket.
- **Museums**: To help visitors find collections and exhibits.
- **Hotels**: Visitors can search for the hotel's facilities.
- **Events**: To guide visitors inside a trade show or fair.
- **Hospitals**: For patients and their relatives to find their way around a facility.
- **Emergency**: To help police, fire brigade or medical services to find their way inside the buildings.

Pricing
There are two pricing options: annual contract or month-to-month (no commitment). Please, see our current Price List for details, or contact us.

References
Mobile app for Site Surveying
Navizon app, available from Google Play for Android, or the iTunes store for iOS, is required for performing the site survey.

Online Documentation
http://support.navizon.com/
Follow links under "Navizon Indoors".

Step-by-Step Installation

Tools
**Wi-Fi analyzer** tools display the access points at any given location. Many tools are freely available as mobile apps.

Here is a tool for Android devices: