

Indoor Mapping Solutions

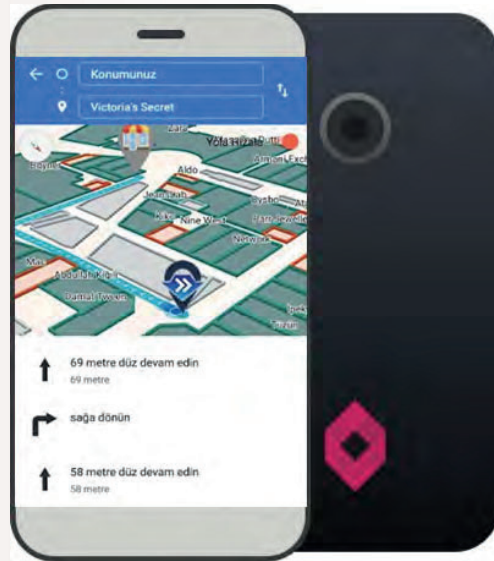
iNavi - provides 3 dimensional visualization, routing and hardwareless (without beacon) positioning for indoors by using earth's own magnetic field.

Features:

- 3D Visualization
- Geographical positioning on world map
- Routing between 2 given indoor locations
- Location based notification & advertisement
- Voice guidance
- Assistive functionalities for blind people

Benefits:

- Directing people
- Locating
- Tracking - usage based heatmap generation
- Assistive functionalities
- Shortest path routing for multiple locations



How iNavi Indoor Positioning works?

Outdoors, phones connect to GPS satellites and locate themselves by incoming signals. The calculated location then can be displayed on maps and can be used to calculate the shortest path to another location. Phone needs direct sight of the sky to connect to satellites. This is the reason GPS locationing can not be used indoors. Clouded sky also decreases location precision.

Beacons:

Phones can use beacons to create the location for indoors. But beacons have high installation and maintenance costs. Bluetooth should be active and this results in additional battery consumption. Also beacons are subject to health regulations for pacemakers.

Without using any additional hardware, iNavi can calculate the mobile position indoors by measuring the earth's magnetic field.

How Locationing is Done by Using Earth's Magnetic Field?

Man made structures distort the earth's magnetic field. iNavi locates users' indoor position by measuring the amount of this distortion. Other than the phone itself, no hardware is required during this procedure. No internet connection is required.

How to Install and Use iNavi?

Building plans are transferred to the digital environment in 3 dimensions. Internal building sections' information like rooms, escalators, elevators, WCs are drawn.

(<https://youtu.be/t-vTqZTitC8> 67 seconds)

Then magnetic field data are collected from the target indoors facility.

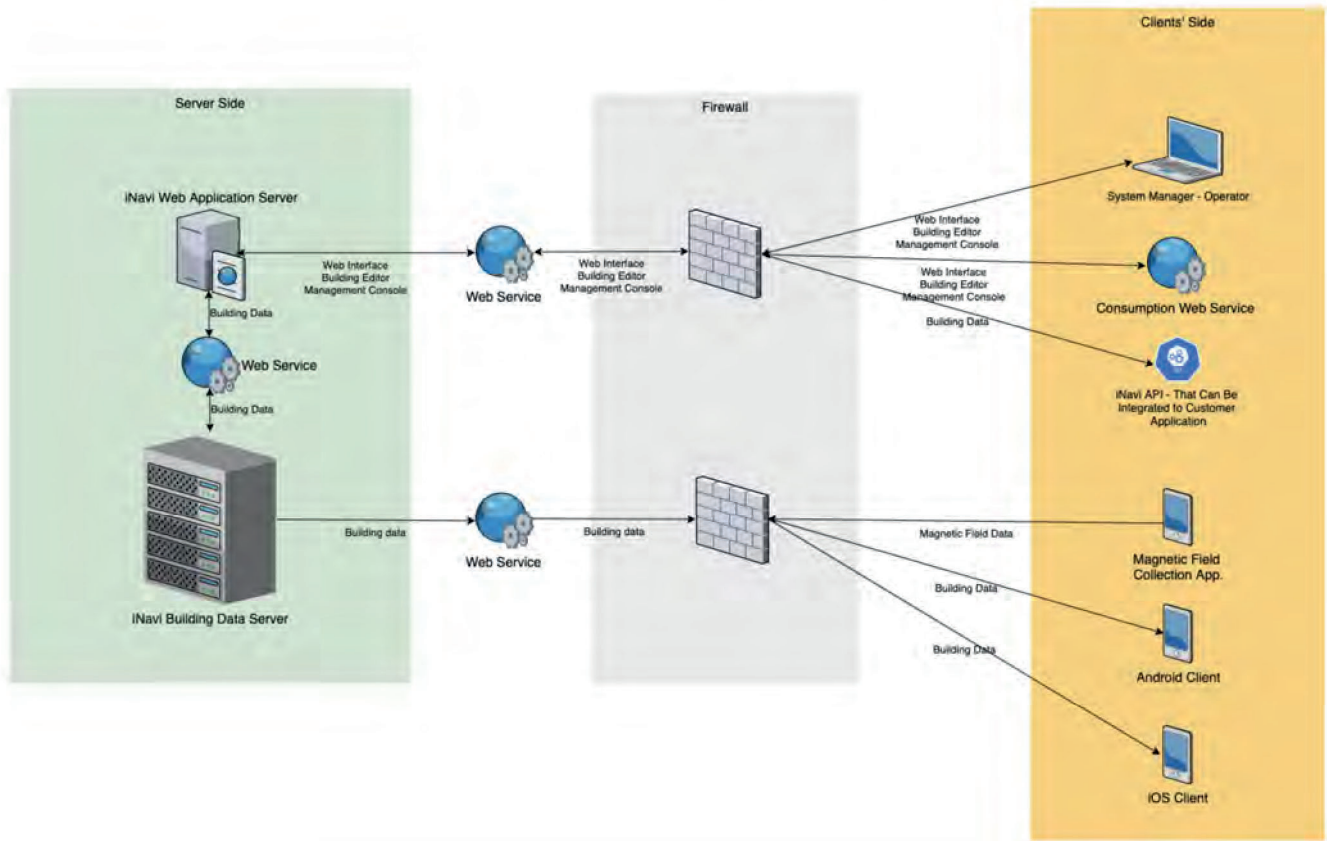
(<https://youtu.be/emCVIr1tPpl> 26 seconds)

Magnetic field data, later, will be used for detecting users location.

(<https://youtu.be/fHeymQDFAqA> 42 seconds)

System Architecture

iNavi Structural Architecture



Security

iNavi can be modified to fulfill different security requirements. Whole system can be installed on internal networks and/or integrated to other systems.

Structure plans can be hidden if the user is not at that location.

Flexibility

With its flexible structure, iNavi can meet your requirements. It can also be integrated into other applications. All iNavi user interfaces can be customised.

With additional developments, you can have your own branded, tailored application.

Building map data servers and web applications can be installed on your own servers.

Can be embedded to other applications.

Has multi-lingual support.

iOS, Android Applications

Developed applications can be published on Appstore, Google Play store, or your own servers.

Building map data can be integrated to the application itself or can be downloaded later while using the application.

