

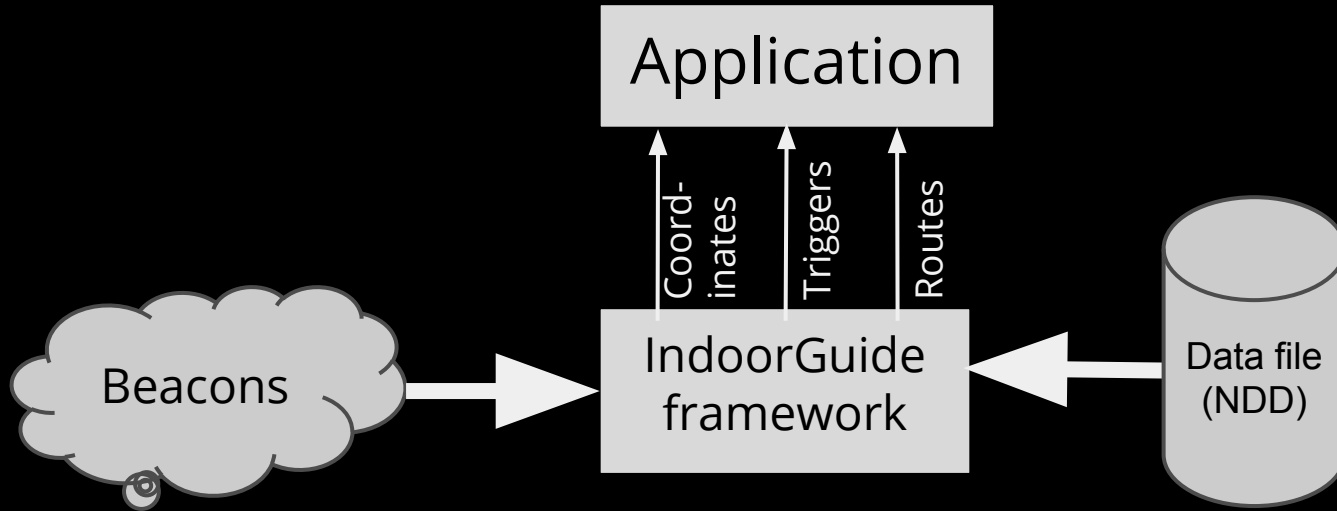
Nimble Devices' Indoor positioning

MTA Hackathon

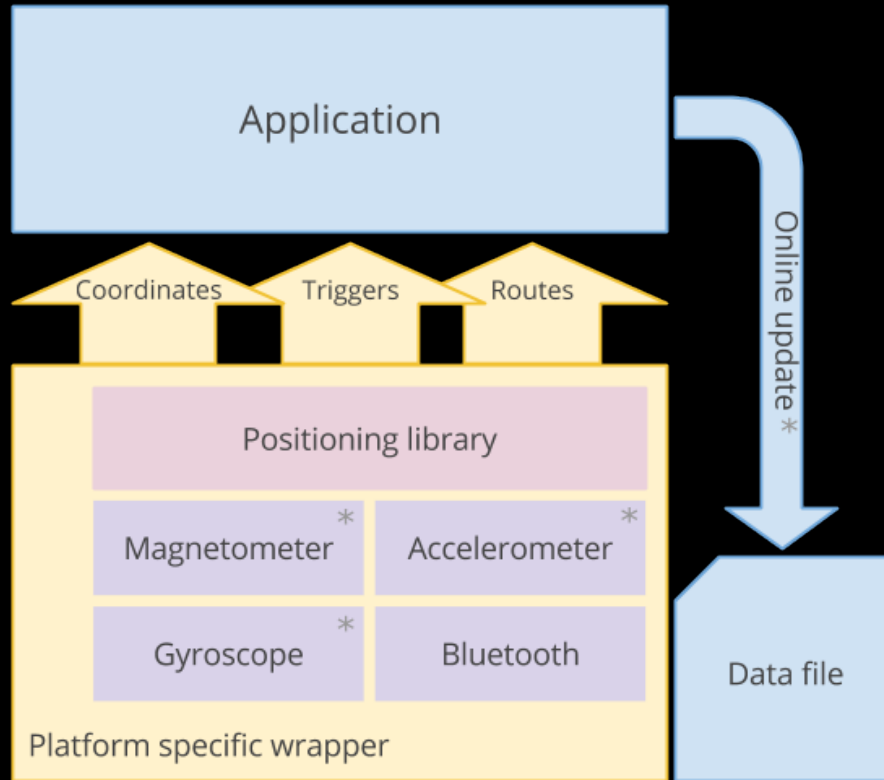
Agenda

- Introduction to Nimble Devices Indoor navigation SDK
- Getting started with the SDK
- Using the basic features

Overview



A bit more detailed



* Optional

SDK Features

- GPS coordinates (lat, lon, altitude)
- Navigation
 - provides optimal route to requested POI
 - POIs are marked in the map data as well as the route network connecting them
 - supports routing between floors/levels
- Triggers
 - Geofences - areas marked on the map data
 - Beacon based - like iBeacon proximity triggers

Map data

- Map data contains all information required for positioning, routing and triggering
- The “source” format of map data is DXF (CAD format, DraftSight recommended for editing)
- NDD is “compiled” format of the map data that the library uses runtime allowing it to work completely offline

Initialization

1. Set delegates to IGGuideManager
 - a. positioningDelegate
 - b. directionsDelegate
2. Set data file (NDD file)
3. Call [manager startUpdates];

More detailed information available in the first page of API reference

Receiving coordinates

- After initialization, positioning begins
- The `positionDelegate` is called once per second with the new position
 - see `didUpdateToLocation:`

Receiving zone triggers

- Trigger areas aka zones are in the NDD
 - Sometimes called geofences
- Each zone can have a name and a numeric ID
- Automatic callbacks to `positioningDelegate`
 - `didEnterZone`
 - `didExitZone`

Requesting routes

- Routing is done from the current location to a target
 - A target can have a generic name like “exit” as well as unique names such as “exit to broadway”
 - Routes are inside the NDD
- For example:
 - [manager startRoutingToName: @"exit"]
- To retrieve a list of targets:
 - [manager getNDDProperty:@"targets"]

Requesting routes cont.

- Route calculation is completed →
 - [directionsDelegate didCompleteRouting:]
 - If user veers off course → automatically rerouted and delegate method is called again
- User position on route available
 - [directionsDelegate didUpdateRoutePosition:]
 - Gives better UX than actual position when navigating

Do's and Don'ts

- Do: Use zones and triggers
- Do: Suggest map data improvements
 - Additional zones you need
 - New routing targets etc
- Don't: Re-implement geofencing yourself
- Do: Use the google group for questions

Thanks

Questions?

www.nimbledevices.com