

Introduction to Beacons

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What are Beacons?

Beacons are ...

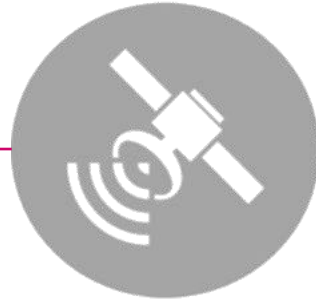
- Small devices that send Bluetooth Low Energy signals (BLE) to smartphones and tablets nearby.
- When the signal from a Beacon reaches a phone, it triggers specific actions, like location-based notifications, in that phone's mobile apps.
- Beacons don't send notifications themselves. What they really do is send a piece of geographic information, a unique identifier, to the mobile applications within their range (about 50 metres)

Characteristics:

- Beacons do inside what GPS does outside
- Hardware:
 - The beacon device itself is incredibly simple.
 - Each device contains a CPU, radio, and batteries, and it works by repeatedly broadcasting out an identifier
 - Platforms: Apple's iBeacon, Google's Eddystone
 - Price Range: \$5 - \$30



Comparison!



GPS



WiFi



Beacons - Bluetooth Low Energy:

Advantages:

- Widespread technology, which means it's highly accessible
- **Range is unlimited**
- Opt-in (requires user consent)

Disadvantage:

- GPS requires a lot of power and therefore drains mobile device batteries quickly
- Lacks accuracy indoors as it is susceptible to obstruction
- Less accurate for "micro-location" proximity based activities

Advantages:

- **Widely accessible as all mobile devices are able to connect to networks**
- Stores/companies with WiFi networks in place have the technology to use it for engaging customers
- Can be used without an app

Disadvantage:

- There are concerns with both privacy and potentially even relevance as consumers are not explicitly asked permission (no opt-in)
- Not a good option for context-aware messaging on a granular level (for example, sending specific messaging in-aisle)

Advantages:

- Standard protocol and ability to work across platforms and devices
- Well documented and standardized app development architecture
- Very low power usage to preserve device battery life
- **High accuracy via proximity detection (message triggering based on user's location in relation to a beacon)**
- **Best option for context-aware messaging**
- Widely accessible technology
- Opt-in (requires user consent)
- High accuracy via proximity detection (message triggering based on user's location in relation to a beacon)
- Best option for context-aware messaging
- Widely accessible technology

Disadvantage:

- **Lower range than GPS**
- Not ideal for outdoor environments
- **Requires an App**
- For indoor usage