# INDOOR NAVIGATION WITH SPREO & MIST

One of the main features of a mobile device is its location feature. This feature empowers the mobile's most used applications such as navigation (e.g. Waze, Google Maps), transportation (e.g. Uber, Lift), recommendations (e.g. Yelp, Tripadvisor), and much more. When we think of location we usually think of GPS and outdoor navigation, but today mobile phones and workspaces with Mist and SPREO can be used to navigate indoors as well.

Indoor Positioning Systems (IPS) offer the ability to locate a mobile phone indoors, without relying on a GPS signal. When combined with mapping, this capability is used to navigate indoors as well as to find objects/points of interest.

How does our navigation work?

Without the GPS signal, how is it possible to navigate indoors. In terms of the infrastructure, there are two possibilities:
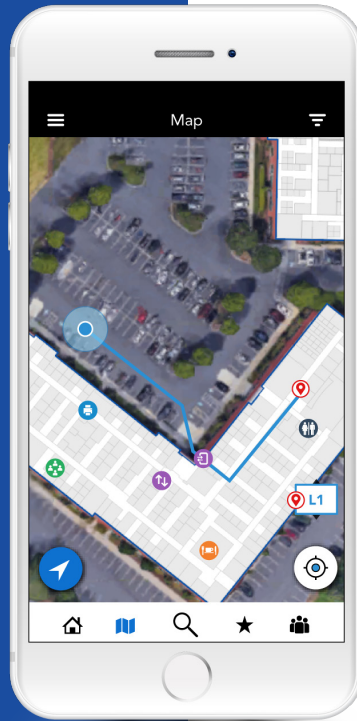
1. Mist Wifi-based positioning – Wifi can be used for indoor positioning, adding value to any building. The characteristics between different phones and different access points is also relevant, which is why a complete indoor positioning system based on Mist/SPREO Wi-Fi integration offers a complete solution.

2. Bluetooth low energy beacons – For deployments that require higher accuracy levels and want to support Apple devices, it is recommended to use Bluetooth Low Energy (BLE) technology. The technology requires the installation of Bluetooth Beacons at key points of interest. These beacons enable battery operation over three to five years without having to access an external power supply. Beacons can also be connected to a power supply or use the power supply from the lighting fixtures. All modern smartphones support BLE, including iOS devices. They also work seamlessly and are fully supported by Mist.
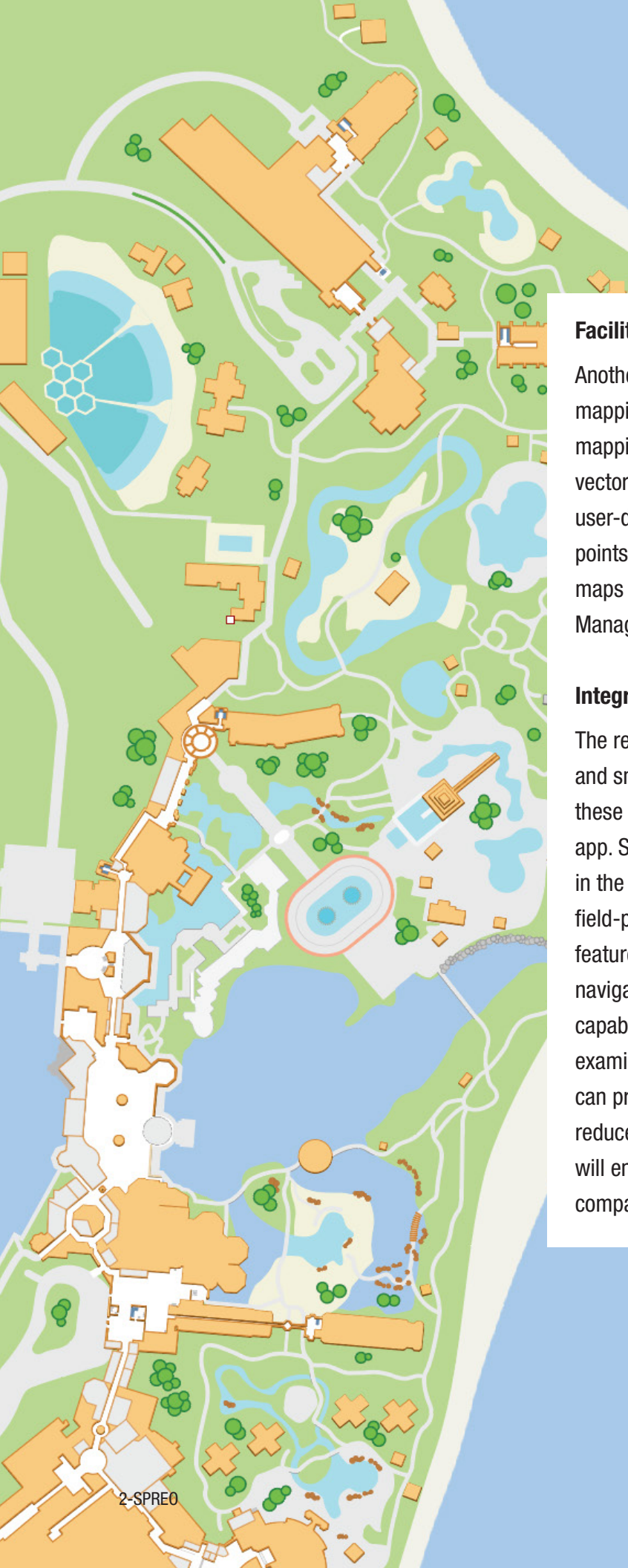
Facility Mapping

Another essential part of the solution is the facility's mapping. The IPS solution should include an indoor mapping engine with geospatially accurate vector-based maps that can display pathways, user-defined routing, directories, place marks, and points of interests (POIs). Place marks on the indoor maps should be defined using the solution's Content Management System and/or through an API.

Integration with Employee Engagement App

The real power of indoor navigation for smart offices and smart campuses is reached when integrating these capabilities within the employee engagement app. SPREO's solution is one of the few solutions in the market that offers an open SDK and existing field-proven integrations to offer a robust and fully featured employee app that includes indoor navigation, wayfinding, and resource booking capabilities. In the following section we will examine how the combination of these technologies can produce an employee engagement app that reduces friction, improves employee productivity, and will ensure millennials feel more connected to the company and its office/campus environment.

# DYNAMIC WORK ENVIRONMENT – HOTELING & HOTDESKING

In today's space-efficient work environment and with the millennial's appreciation of a flexible work schedule, the concept of workstation assignment is replaced by dynamic hoteling of workstations. Without the ability to book the workstation, either in advance or on the spot, an employee can spend a considerable amount of time every day trying to find an empty workstation. Let's say this inefficiency takes anywhere from 15 minutes to half an hour. For a campus with 1000 employees, these are 500 hours that are wasted.

Workstation booking and navigation

Using SPREO's hoteling feature, the user can view a list of hoteling workstations ordered by their proximity and/or view them on a map of the campus/office. On the right you can see a visual marker indicates whether space is available, near a reserved time, or reserved. The reservation can be done remotely and in advance or on the spot. When a user is inside a facility, the user can simply find unclaimed hotel space, navigate to it and claim it. Navigating in real-time to the designated workstation can save a considerable amount of time and therefore increase employee productivity.

The booking of workstations can be done on the mobile app, the desktop, and through kiosks that are strategically placed throughout the facility.

Since millennials are outstanding collaborators, meeting rooms and more informal meeting spaces are used very often. Finding the meeting room, however, in a large facility or campus and then waiting until everyone arrives can take a lot of time. In fact, 40% of employees waste up to 30 minutes a day looking for a meeting space or lookup meeting room occupancy. And with most employees attending 62 meetings per month, this amounts to a significant waste of time.
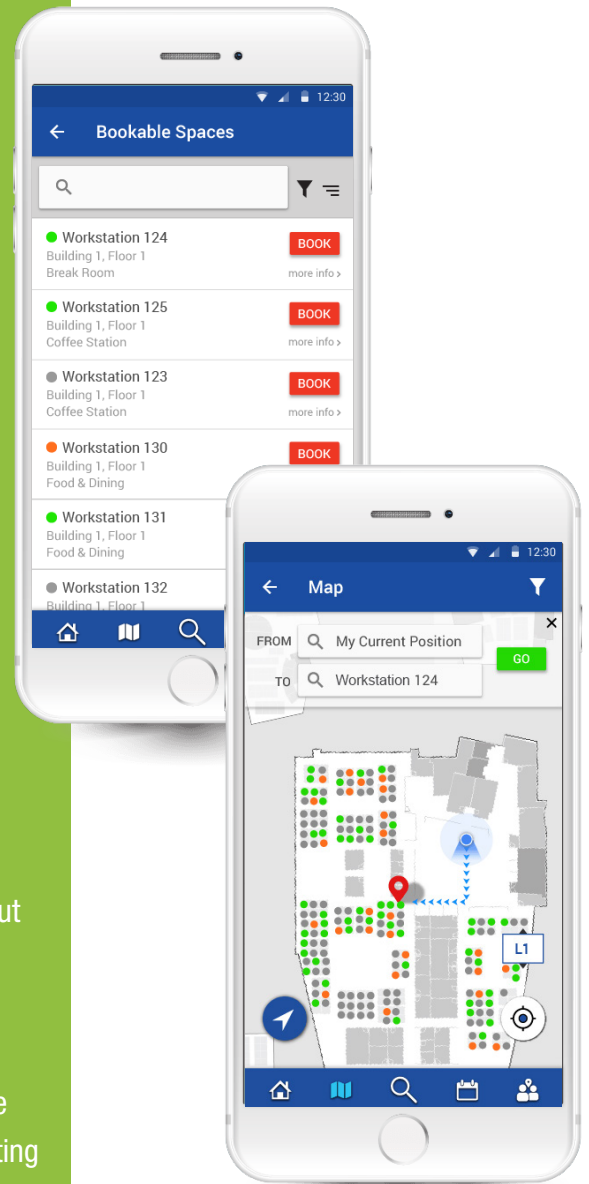
FRICTIONLESS MEETINGS – MEETING ROOM BOOKING

The app enables seamless meeting/conference room reservations similar to workstation reservations. Within a facility, the user can see a list of conference rooms, ordered by proximity. This list will dynamically update as the user changes location (e.g. walks around the floor, changes floor, …). Each meeting room includes complete information about the size of the room, the number of people that can be accommodated, and additional facilities (e.g. includes a projector, etc.).

The conference room's availability is indicated by a visual marker. Notifications are sent to the meeting members. When the time comes, the app enables blue-dot navigation and location sharing so everyone can arrive on time. If someone is arriving late, they can notify other members and even share their current location.

The booking of workstations can be done on the mobile app, as seen on the right, a desktop, and through kiosks that are strategically placed throughout the facility.

This type of frictionless experience makes collaboration seamless and more productive. For a campus with thousands of employees, this also means tremendous savings in time and increased utilization of meeting spaces. The ability to jump from a virtual discussion in the group's online chat to meet in a physical space, by using the same app, creates an experience that will attract millennials.

SPREO & Mist: Creating a Modern Workplace