DEEYOOK
Touchless Tracking

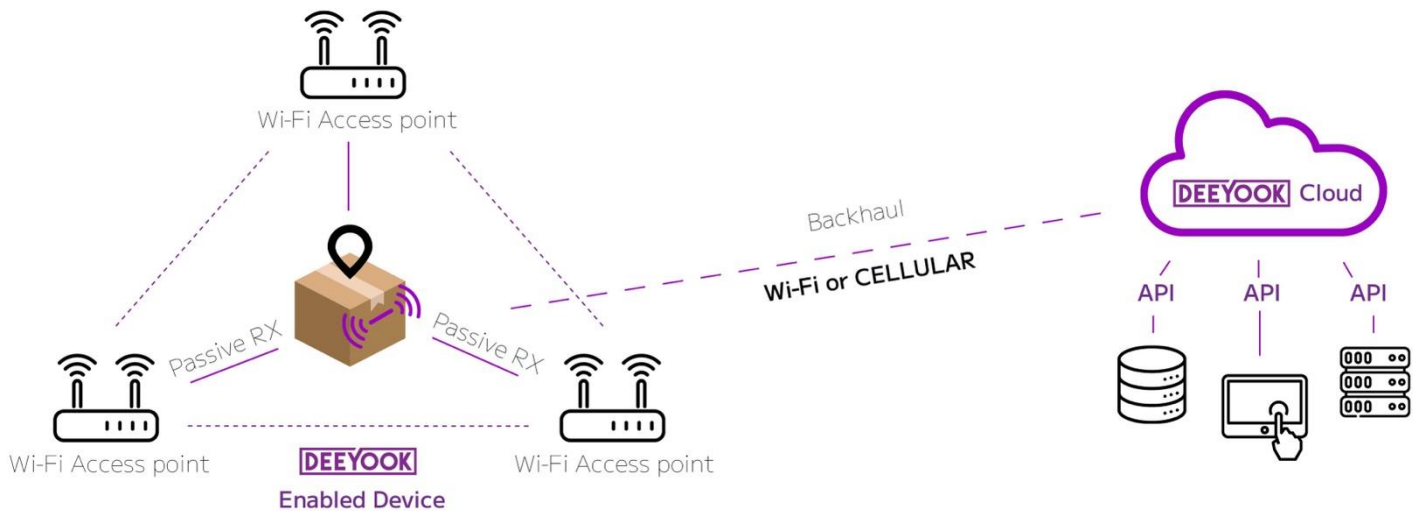## THE DEEYOOK TOUCHLESS TRACKING SERVICE

Scope

Deeyook provides a cloud-based, location as a service (LaaS) solution with digital touchless tracking, enabling asset tracking (whether stationary or mobile) in real-time or past location data allowing local chain of custody.

Deeyook's Wireless Enabled Soft Trackers (WEST) are connected to the Deeyook Tracking Suite (DTS) 24/7, enabling services and facilitating real-time location tracking for any number of individual WESTs.

Tracking is enabled by exploiting the existing Wi-Fi infrastructure in a non-intrusive manner, with backhaul connectivity based on either LTE-M or Wi-Fi.

The service interfaces with any existing customer enterprise software such as ERP, WMS and AMS for RTLS and business intelligence (BI).

WEST reporting is triggered by movement, scheduled by WEST clock, or requested on demand.

The service requires a monthly subscription.

Contact Information

Tel Aviv offices
Tel: +972-3-7795401
Email: contact_us@deeyook.com

San Jose, USA offices
Tel: +1-408-644-9312
Email: contact_us@deeyook.com

Stationary Location

Knowing the real-time stationary asset's location provides significant value enabling efficient inventory count and asset management.

With typical deployment, expected accuracy is sub-meter with 1 second of latency.

Mobile Tracking

Using the WEST to obtain real-time mobile tracking location of any asset (such as forklifts) in the facility provides significant value in various use cases including navigation and collision prevention.

With typical deployment, expected accuracy is sub-meter with 1 second of latency.

Customizable Open API

Deeyook's open API is customizable to any WMS/ERP/AMS. Via the API, Deeyook's services export location and other asset management information to the mentioned systems.

Manageable Report Triggering

The WESTs report their location, triggered by the following mechanisms:

a) **Queries**: Initiate current location of the WEST.

b) **Timer**: Periodic location reporting.

c) **Movement**: Report whenever the WEST is not at rest.

Local Chain of Custody

Continuous traceability provides a local chain of custody within the confines of the individual service area.

Digital-Twin & Vital Signs Presentation

Functionality of the WEST enables the creation of digital twin assets within the facility, and can be connected to an IoT fleet management system:

a) **Digital-Twin**: The WMS/ERP/AMS manages the asset's digital representation with Deeyook's real-time location information.

b) **Vital Signs**: Report critical information necessary for long term maintenance of WESTs.
For example: remaining battery charge, malfunction alerts, "last seen".

TECHNICAL SPECIFICATIONS

1. Cloud Service

Globally available, secure, reliable, and elastic service.

2. Wi-Fi Infrastructure

A collection of Wi-Fi APs, covering the service area:

a) **AP density**: Characterized by maximum distance between neighboring APs: 20 meters (60 feet).

b) **AP Constellation**: Defines the shape of the service area: WESTs are inside the constellation.

c) **AP Certification**: The AP (SKU) models used for location must be Wi-Fi Alliance certified for 802.11n or later and Deeyook certified.

3. Backhaul Options

On-Prem IoT Gateway Software is required only for Wi-Fi backhauling. Our system offers the following topologies:

a) **Soft Overlay**: The WEST uses a dedicated SSID and is isolated for Deeyook (hard overlay at customers discretion is possible).

b) **Site Infrastructure**: The Deeyook SSID accesses the internet via existing site internet connectivity.

c) **Cellular**: WEST cellular access is an alternative to the above option.

4. WEST

An existing reference design for a typical WEST consists of: CY43012 Wi-Fi chip, two antennas, a PSOC6 MCU, IMU, peripheral components, a battery, and an enclosure (for further information see WEST Datasheet).

5. WEST Communication Security

All WEST traffic is SSL/TLS protected.

On-Prem Option

On-prem option can be evaluated upon specific requests.

Fully Redundant Service

The service comprises:

- o **SSID**: For WEST communication with Deeyook over multiple SSIDs.
- o **Backhaul**: Multiple IP routes for backhaul between service area and DTS cloud.
- o **DTS**: Multiple independent instances of DTS.
- o **Fleet Management**: Fully redundant FM service.
- o **DB Storage**: Hot backup.
- o **WMS/ERP/AMS**: Multiple routes between DTS cloud and sites WMS/ERP/AMS.

Bandwidth

A typical, single, location message comprises under 1 kb.

- o **Dynamic:** While on the move, WEST sends about 30 messages per second.
- o **Static:** WEST reporting requires about 30 messages upon request.

Pricing

a) **Monthly Subscription**: Per WEST.
b) **Number of Queries**: Per query service fee.
c) **Amount of Location Data Stored**: Per MB storage fees.

Ordering Information

Part Number	Description	Quantity
DK1000-1	Area units: 1,000 sq ft. (100 sq m.)	Per area unit
DK1001-2	WEST: Wi-Fi only backhaul	Per WEST
DK1002-3	WEST: Wi-Fi & cellular backhaul	Per WEST
DK1003-4	Site backhaul for Wi-Fi traffic	Per site