Locus Setup Guide

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LOCUS WEB Application

User Manual

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Table of Contents

1. Introduction

- Before starting following this guide, please ensure that all nessesary items from Getting Started with Locus: Setup Requirements were received from the customer.
- Before starting following this guide, please ensure that Network Server configuration part from Getting Started with Locus: Setup Requirements was successfully done on the customers side.
- After all information from the customer received, please contact Artem Starchenko or Oleksii Rassykhin to start setup Keyclock tenant.
- For more details on each Locus entity, please use Locus Web App User Documentation or contact Kyiv RnD team (Artem Starchenko or Oleksii Rassykhin)

2. Acronyms and Glossary

- **Altitude -** Height of an asset relative to sea level, measured in meters.
- An item, object, or person that a user wants to track, such as equipment, inventory, or personnel. In Locus, assets are linked to devices to monitor their location.
- **Asset ID -** Unique identifier automatically generated by the system for each asset.
- **Asset Status -** The current condition of an asset in LOCUS, shown as **Online** (actively tracked with intermittent updates), **Offline** (no current data from the device), or **Not Available** (not linked to a device). This reflects whether the asset's position is being monitored.
- **Asset Type** - A category user creates in LOCUS to label your assets. It can be anything you need to track, like a van, cart, or road sign, helping you organize and identify assets easily.
- **Battery Level** - The most recent battery charge of a device or beacon (%).
- **Beacon** - Device from TEKTELIC or a third-party provider that uses BLE (Bluetooth Low Energy) to send signals. Beacons help devices locate assets indoors by acting as reference points for tracking.
- **Beacon ID** - Unique identifier automatically generated by the system for each beacon.
- **BLE (Bluetooth Low Energy)** - Wireless technology used by beacons for short-range communication.
- **Beacon model** - The specific type or version of a beacon used in LOCUS. For Tektelic beacons, the model is automatically pulled from the database. For third-party beacons, user will need to create and enter the model yourself.
- **Building** - A structure within a Site for indoor tracking. Contains floor plans. Linked to a Site.
- **Device** - A TEKTELIC IoT tracker that collects location data (via GPS, BLE, or WiFi). Devices must be assigned to an asset to display its position.
- **Device model** - Specific hardware model name of a tracking device (e.g., PELICAN).
- **Event** - Notification triggered by predefined conditions (e.g., low battery).
- **Event ID** - Unique identifier automatically generated by the system for each event.
- **Event Rules** - Custom conditions user set in LOCUS to trigger alerts about your assets. Examples include when an asset enters or exits a geofence, or when a device's battery runs low.

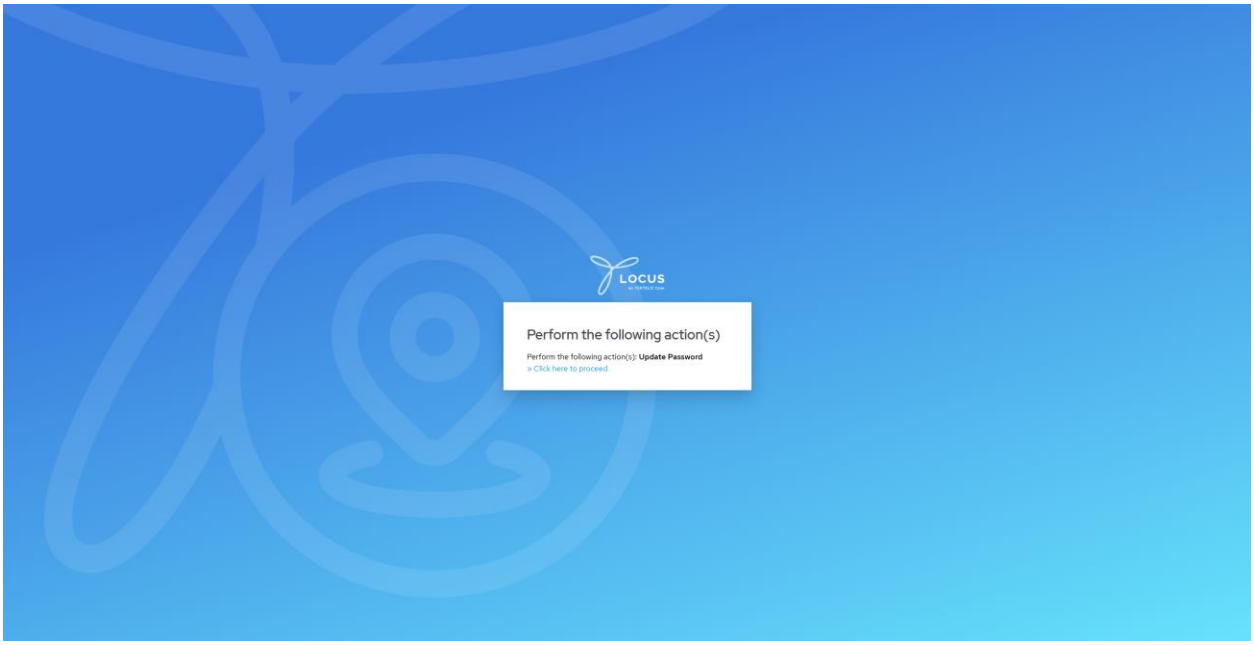
- **Device EUI** – 64-bit globally-unique Extended Unique Identifier (EUI-64) is assigned by the manufacturer, or the owner, of the end device.
- **Floor Plan** - Internal layout map of a building, used for indoor tracking.
- **Home Site** - The logical location where entity belongs to, defined by the end user
- **Geofence**: A virtual boundary user creates in LOCUS to monitor assets indoors or outdoors. The user can set it up around a specific area (like a room or a site) and link it to event rules to trigger events, such as when an asset enters or exits the zone.
- **Indoor Map** – In LOCUS, this refers to a layout of a specific level within a building (e.g., an office floor or warehouse section). User will use indoor maps to place devices and beacons for precise indoor tracking. Same as "Floor plan".
- **Latitude** – A geographic coordinate that shows an asset's north-south position on Earth. In LOCUS, it's used with GPS data from Tektelic devices to track assets outdoors.
- **LoRa** - Long-range wireless communication technology used by tracking devices
- **Longitude** – A geographic coordinate that shows an asset's east-west position on Earth. Paired with longtitude in LOCUS, it pinpoints outdoor asset locations using GPS.
- **MAC Address -** 12-character unique network identifier for beacon devices.
- **Outdoor Map** – Global map showing the planet, focused on a specific Site. Tracks devices moving between Sites using GPS or WiFi.
- **PSR (Packet Success Rate)** - Percentage of successfully received data packets from a device within one hour.
- **RSSI (Received Signal Strength Indicator):** Signal strength received from devices or beacons, measured in dBm.
- **SNR (Signal-to-Noise Ratio)** - Measurement of signal quality compared to background noise, expressed in decibels (dB).
- **Site** – The physical location where an entity is located
- **Tag** – User-defined labels associated with an entity, used for categorization and management.
- **Tenant** – Organization or workspace within the LOCUS application.

3. Initial Account Setup

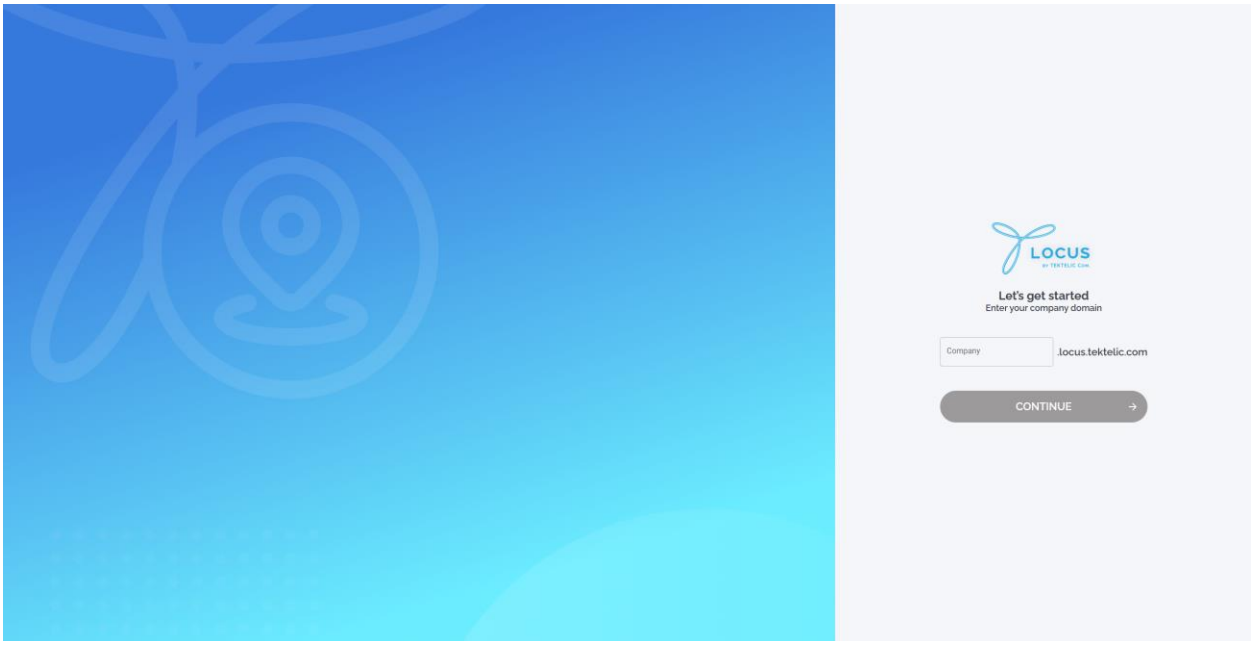
Overview

The Initial Account Setup process guides through the steps to assist a user in activating their Locus account after the user has been added to the system and their organization has been created.

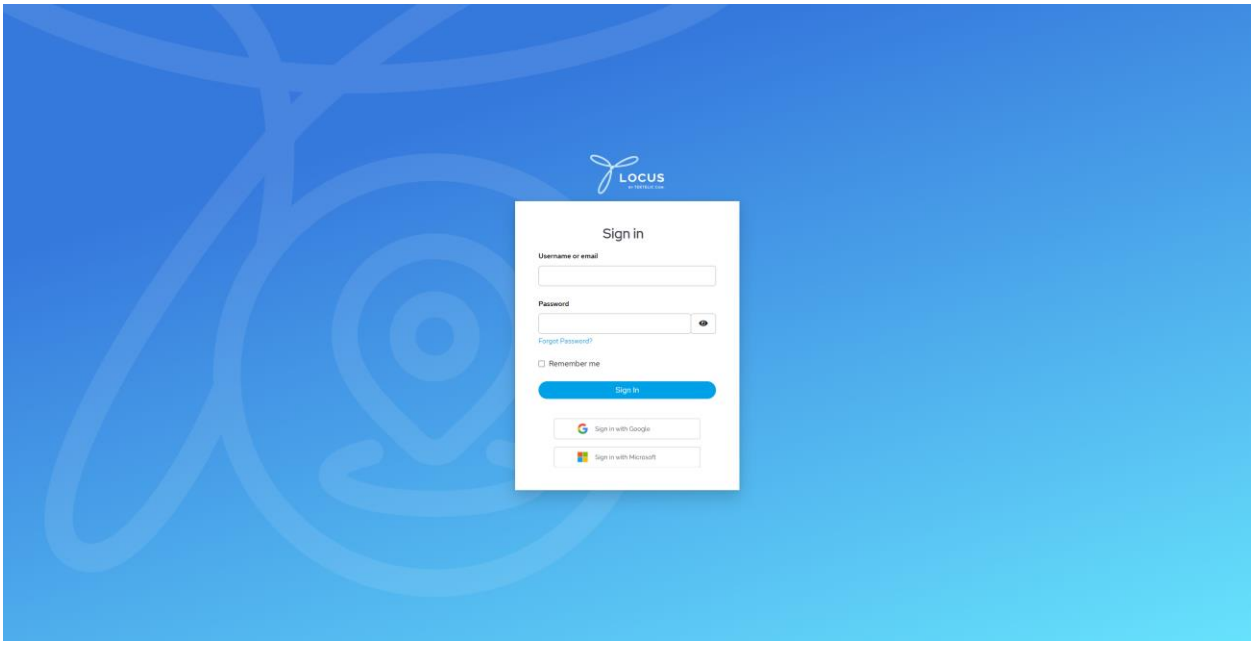
1. **Trigger the Password Confirmation Email**
   Ensure the system sends a password confirmation email to the user's email address (e.g., "user1@tektelic.com"). The email will contain a button labeled **Link to Account Update**.
2. **Guide the User to Follow the Link**:
   Instruct the user to click the **Link to Account Update** button in the email. This will redirect them to a page called "Perform the Next Actions."



3. **Verify Organization Setup**:
   Since you have already created the user's organization (e.g., "Acme Corp"), the user will not need to add it. Use orgarization`s name to proceed.



4. **Assist with Sign-In**: Instruct the user to sign in using their credentials (email and password) or Single Sign-On (SSO) if enabled for their organization.



For details on managing user accounts, troubleshooting login issues, or updating organization details, refer to the [WIP] KeyCloak Administration **or contact Kyiv RnD team (**Artem Starchenko **or** Oleksii Rassykhin**)**

4. Features

4.1 Sites

Overview

A **Site** represents a physical location within the system. Sites help organize locations for tracking and also control location-based permissions. These permissions determine what a user can view depending on their assigned locations.

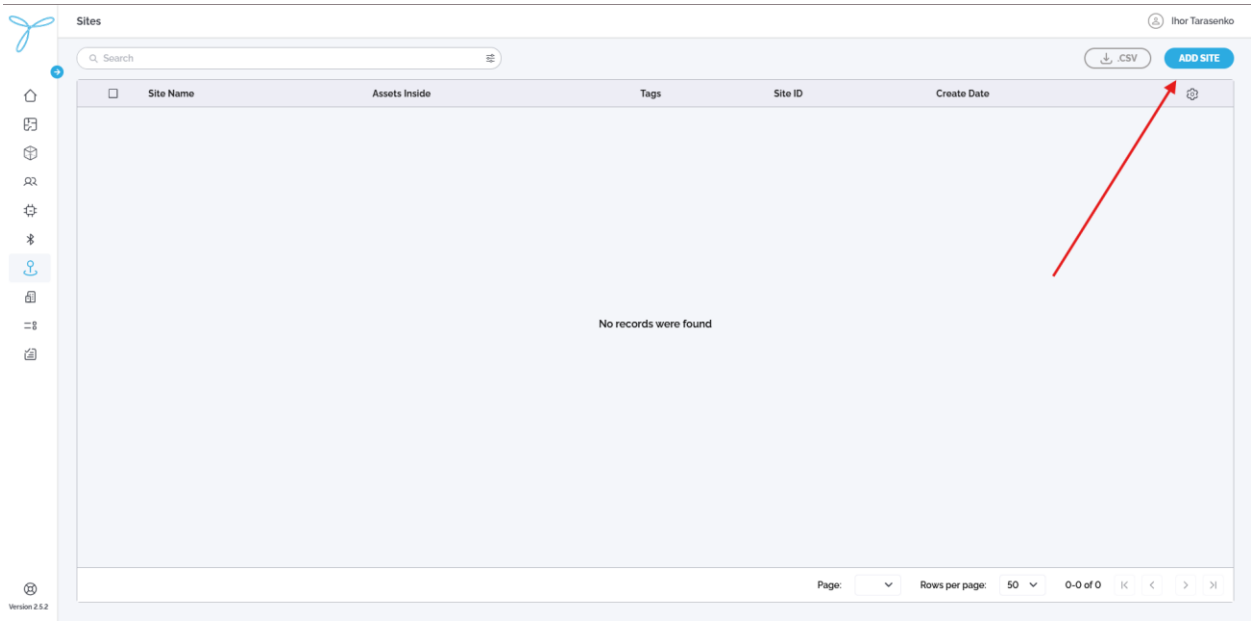
Before You Start

Ensure you have:

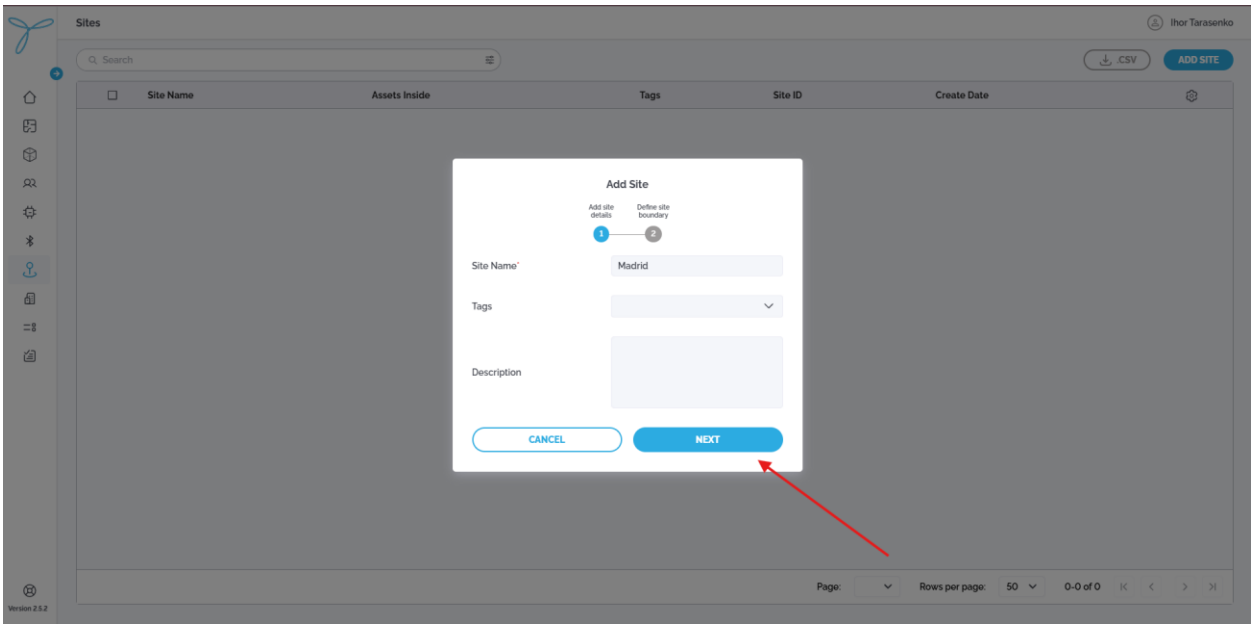
- A list of sites with coordinates provided by the customer. See the Getting Started with Locus: Setup Requirements guide for details.

4.2 Add new site

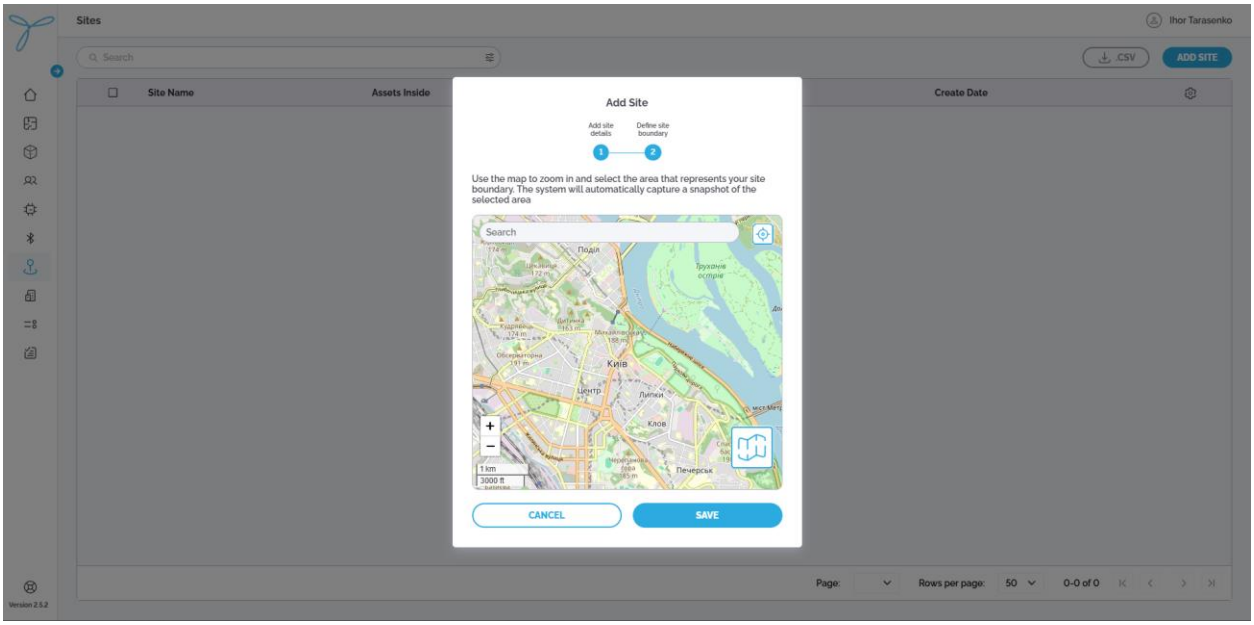
1. Navigate to the **Sites** menu and click **Add Site**:



2. Enter the **Site Name** (e.g., "Madrid"). Other fields can be left blank.



3. Click **Next**, then follow the on-screen instructions to define the site boundary.



For details on editing, deleting, or viewing sites, refer to the [Locus Web App User Documentation]

4.3 Buildings

Overview

A Building is a marker on the map and an entity that helps users organize their maps in a hierarchical structure.

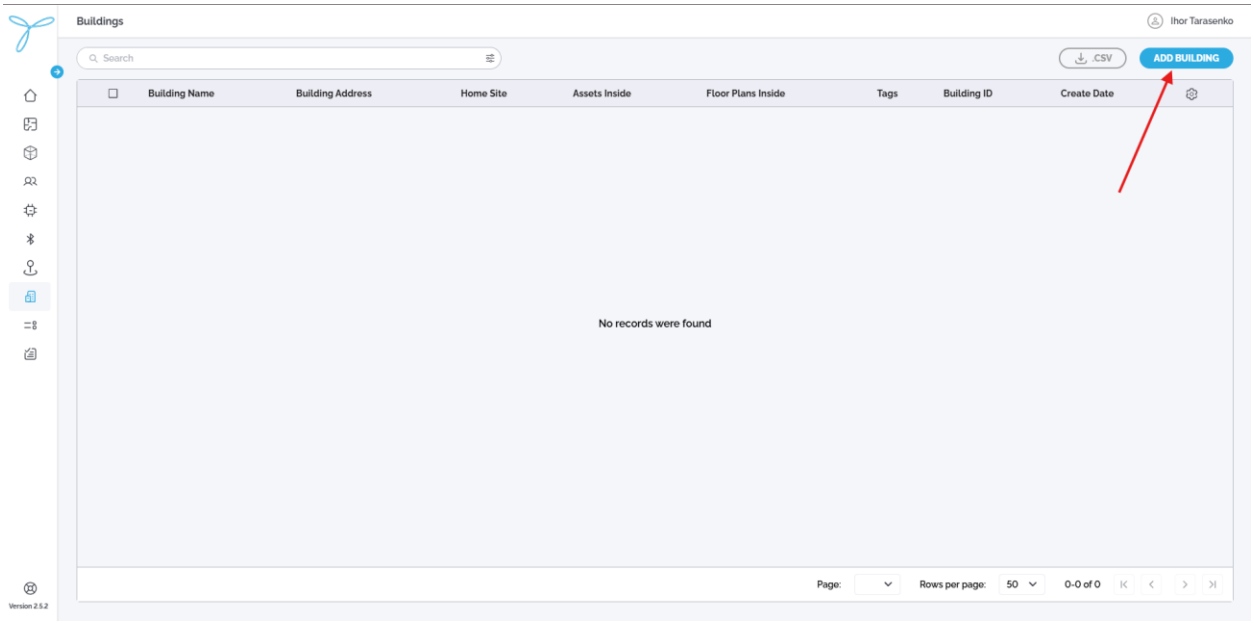
Before You Start

Ensure you have:

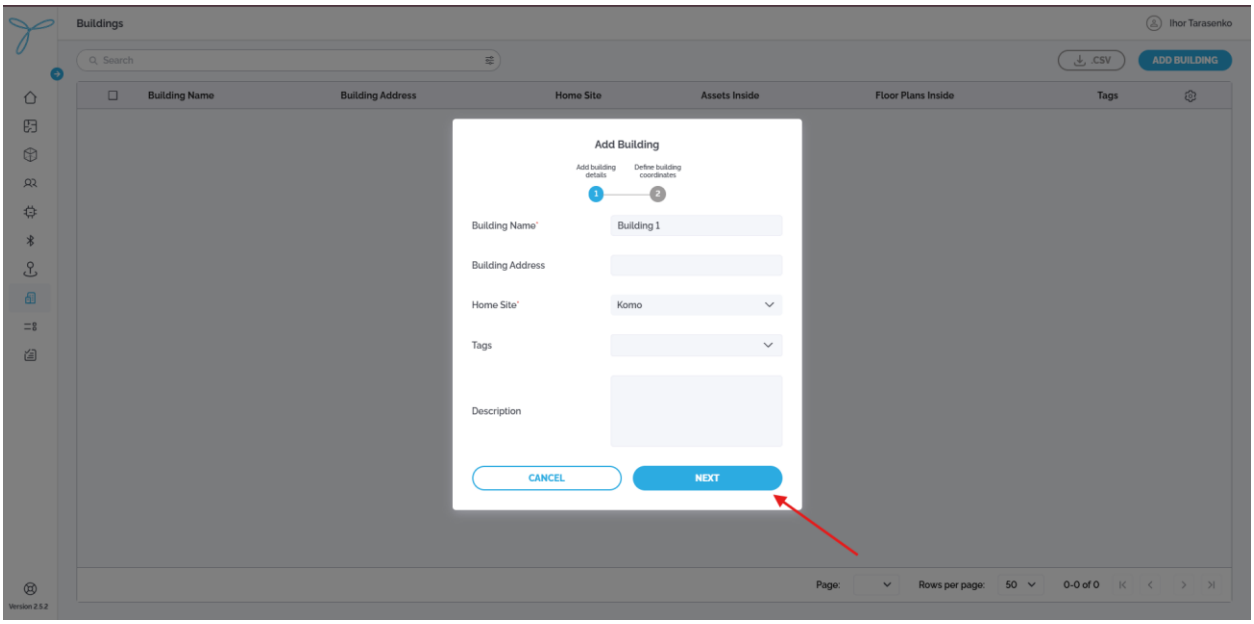
- A list of buildings provided by the customer. See the Getting Started with Locus: Setup Requirements guide for details.

4.4 Add new building

1. Navigate to the **Building** menu and click **Add Building**:



2. Enter the **Building Name** (e.g., "Building1"). Assign building to an existing **Site**



3. Click **Next**, then follow the on-screen instructions to add building pin

For details on editing, deleting, or viewing buildings, refer to the Locus Web App User Documentation

4.5 Floor plans

Floor Plans allow users to manage indoor layouts and required to track assets indoor.

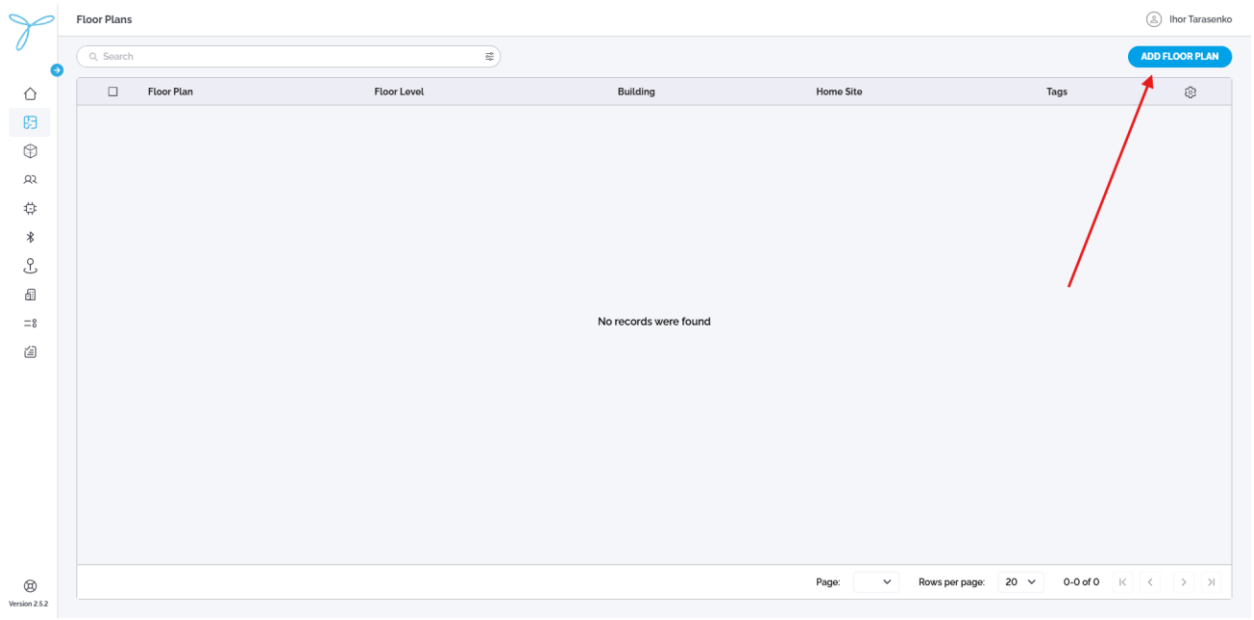
Before You Start

Ensure you have:

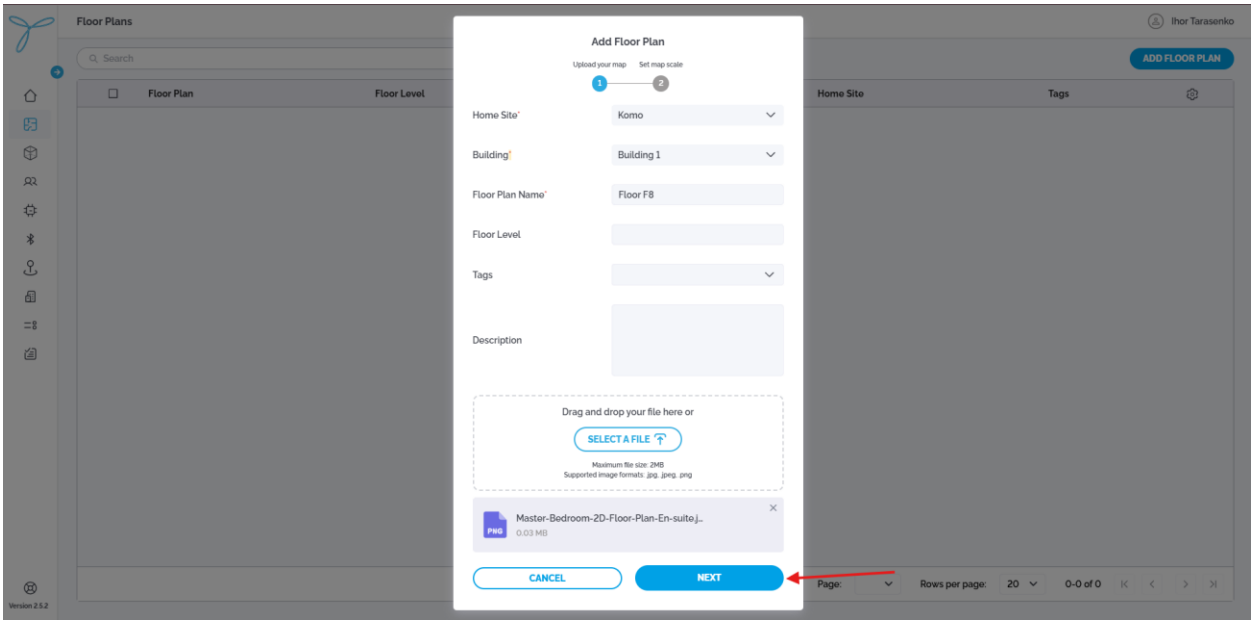
- A list of floor plans with images and dimensions provided by the customer. See the Getting Started with Locus: Setup Requirements guide for details.

4.6 Add new Floor plan

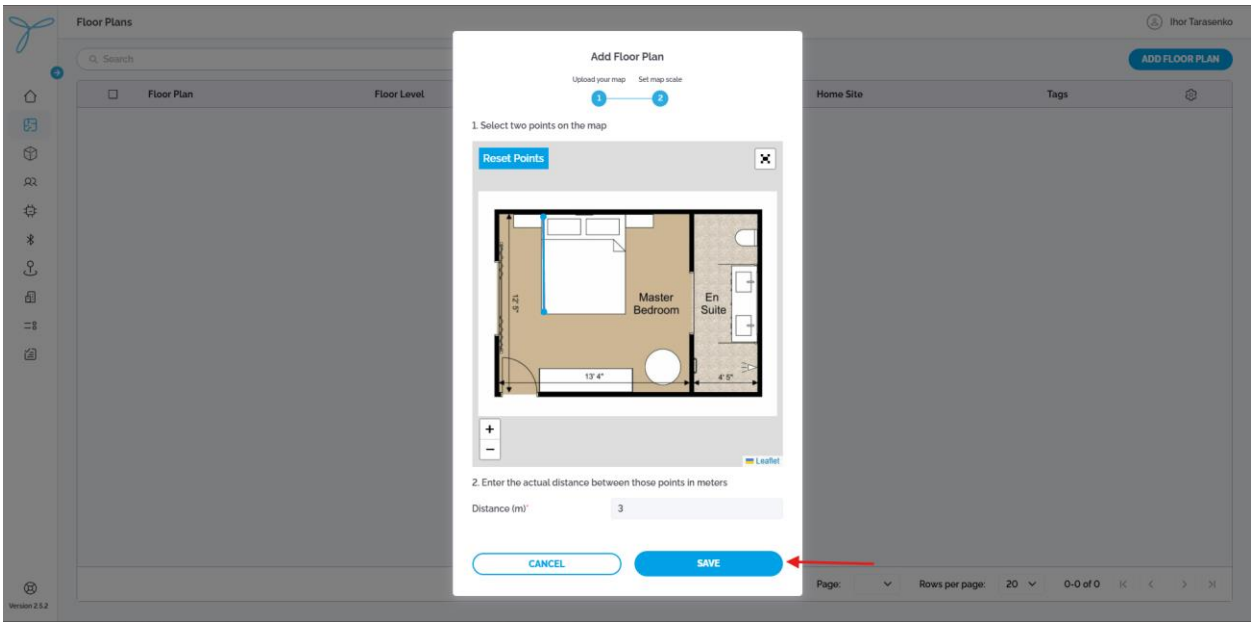
1. Navigate to the **Building** menu and click **Add Floor plan**:



2. Select **Site** for the **Floor plan**.
   Select **Building** for the **Floor plan.**
   Enter the **Floor Plan Name** (e.g., "Floor F8").
   Assign a picture to the **Floor plan**.



3. Click **Next**, then follow the on-screen instructions to define the **Floor plan** dimensions.



For details on editing, deleting, or viewing floor plans, refer to the Locus Web App User Documentation

4.7 Devices

Overview

The Devices page lets you manage and monitor TEKTELIC trackers. Stork and Chickadee devices requires Semtech LoRa Cloud connection. To manage it, you need to use API. **To receive GNSS functionality for these devices, contact Kyiv RnD team** (**or contact Kyiv RnD team (**Artem Starchenko **or** Oleksii Rassykhin**)**

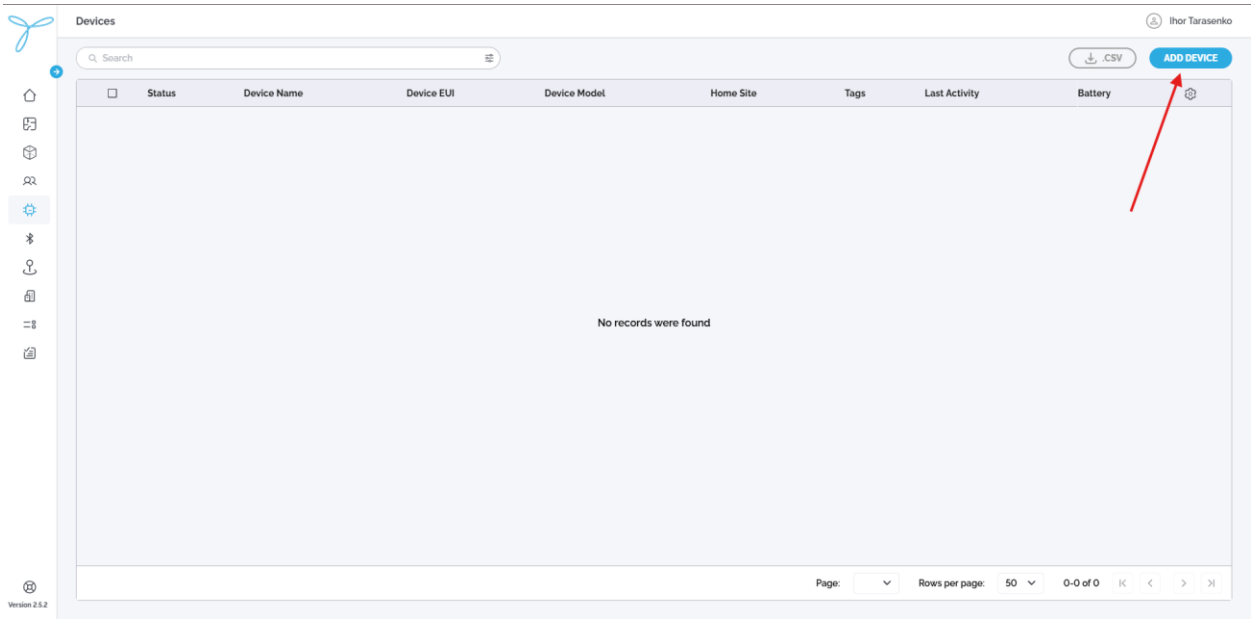
Before You Start

Ensure you have:

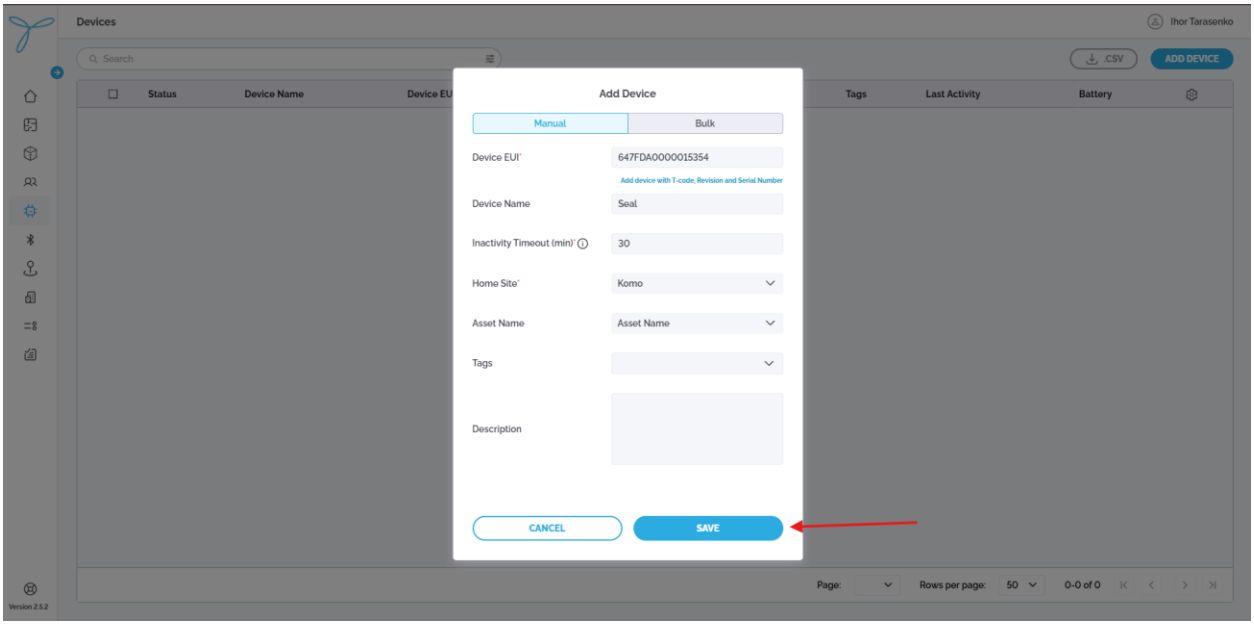
- A list of devices provided by the customer. See the Getting Started with Locus: Setup Requirements guide for details.
- For bulk import, CSV file filled with customers devices.

4.8 Add new device via DevEUI

1. Navigate to **Devices** menu and click **Add device**

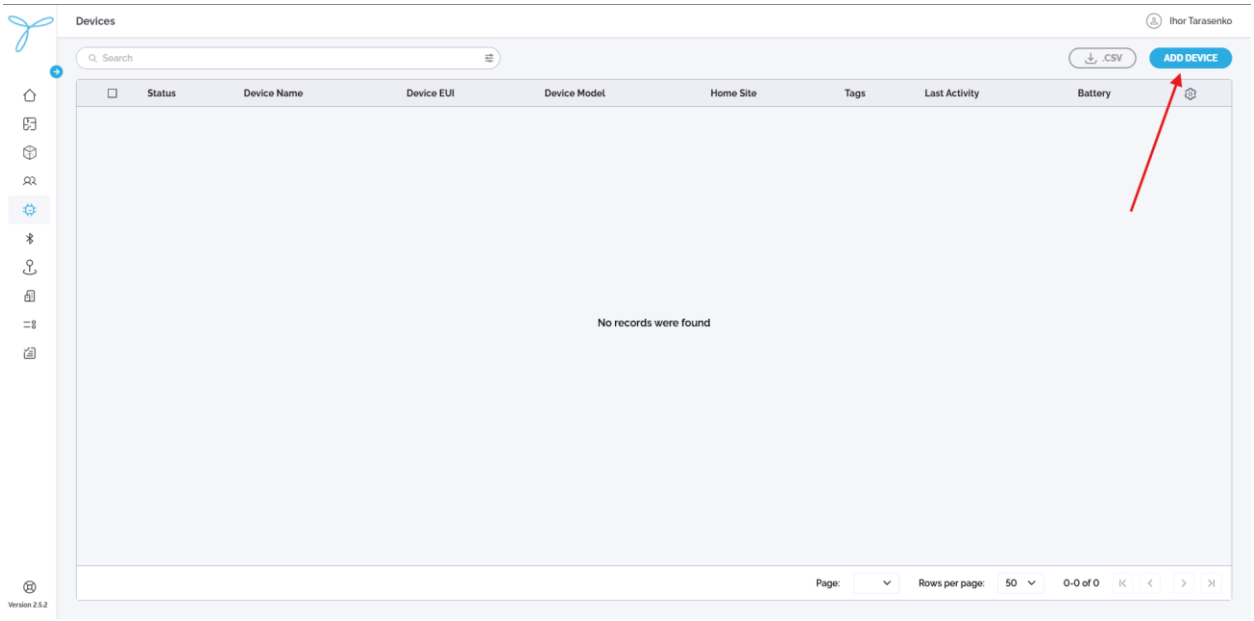


2. Enter **DevEUI** of the device. Enter **Inactivity timeout** for device. Assign **Device** to the existing **Site**. Other fields can leave blank. Click “Save”

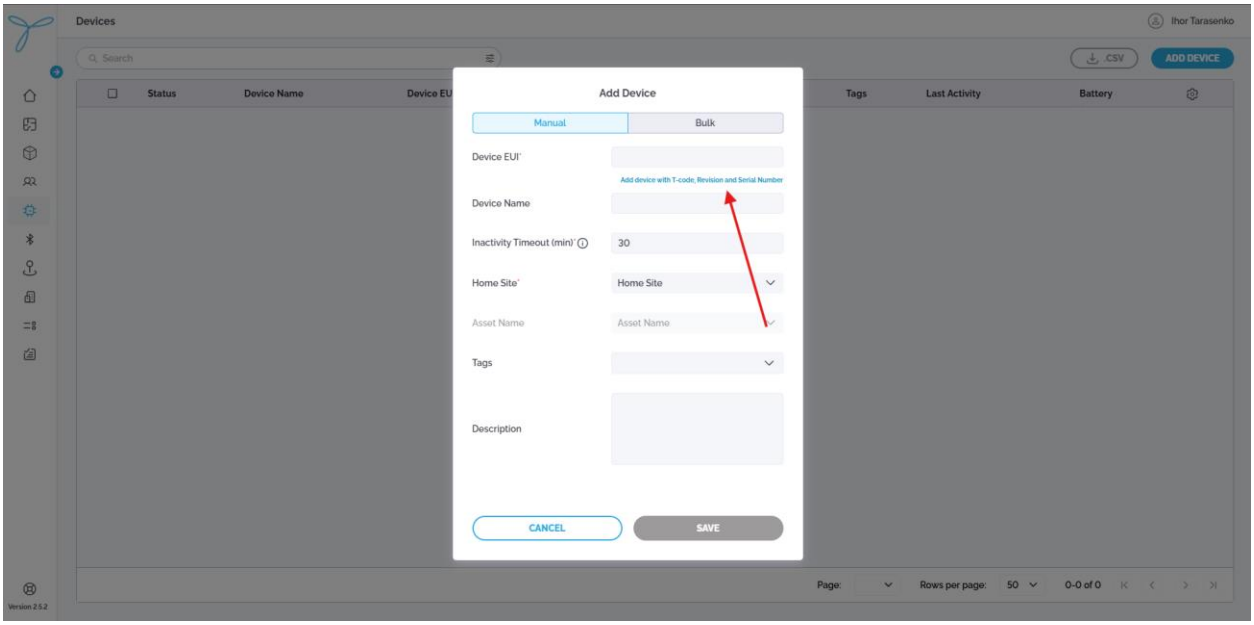


4.9 Add new device via T-code/Revision/Serial number

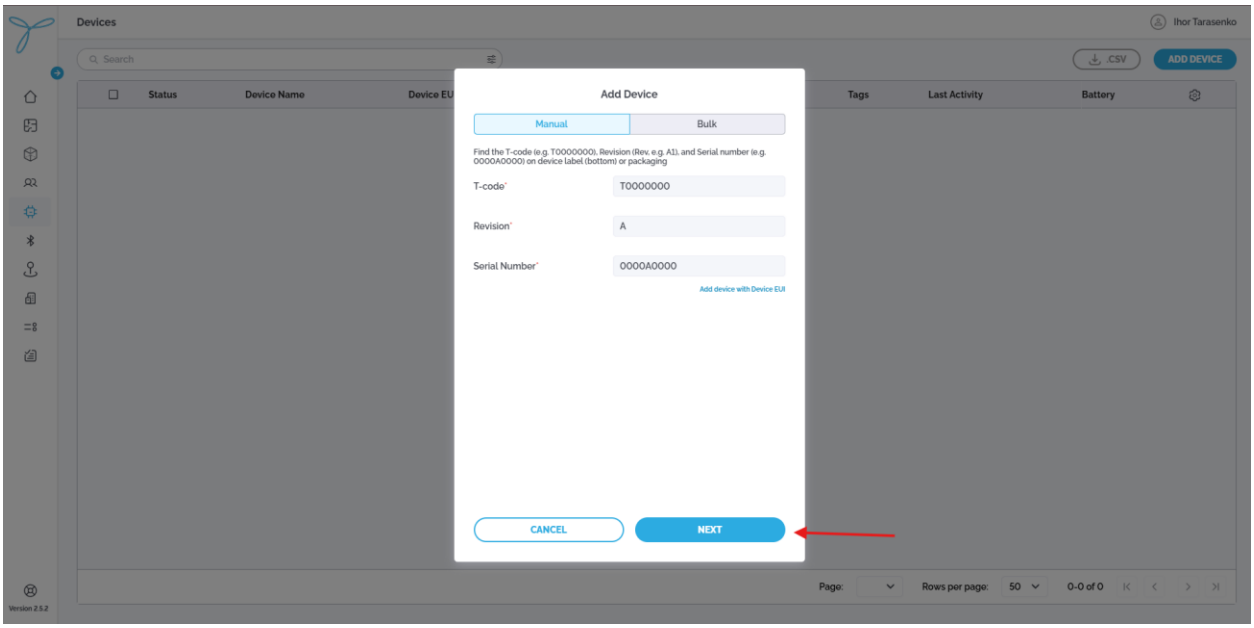
1. Navigate to **Devices** menu and click **Add device**.



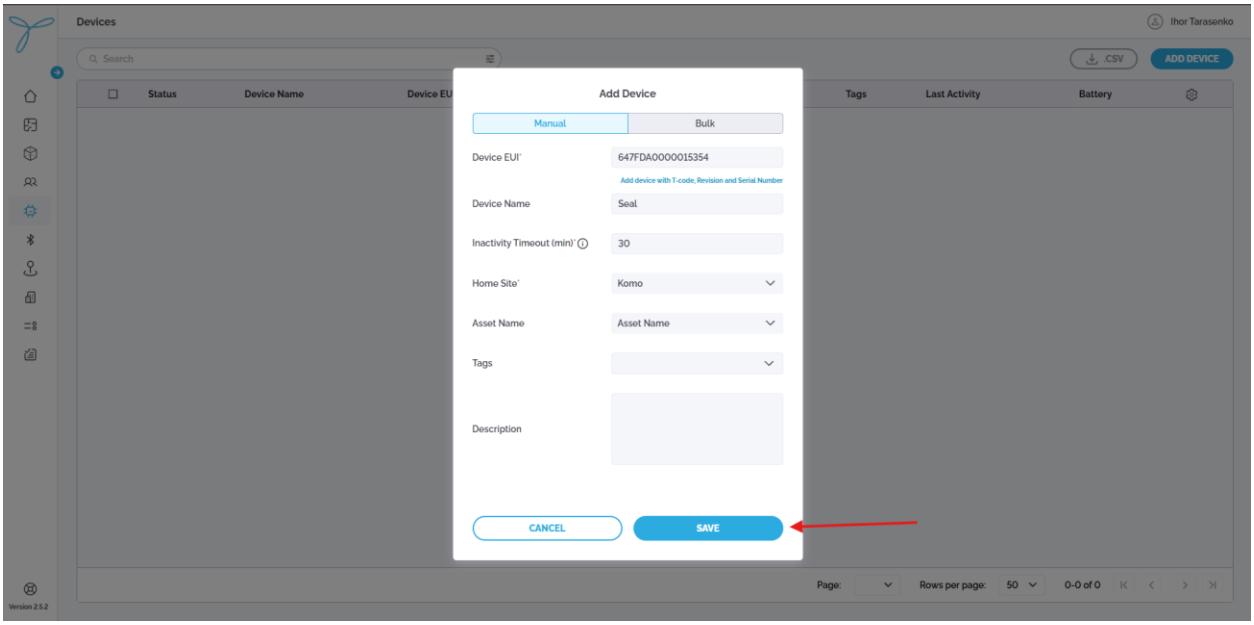
2. Click on "**Add device with T-code, Revision and Serial number**" button.



3. Enter **T-code, Revision and Serial number,** click “**Next**”.

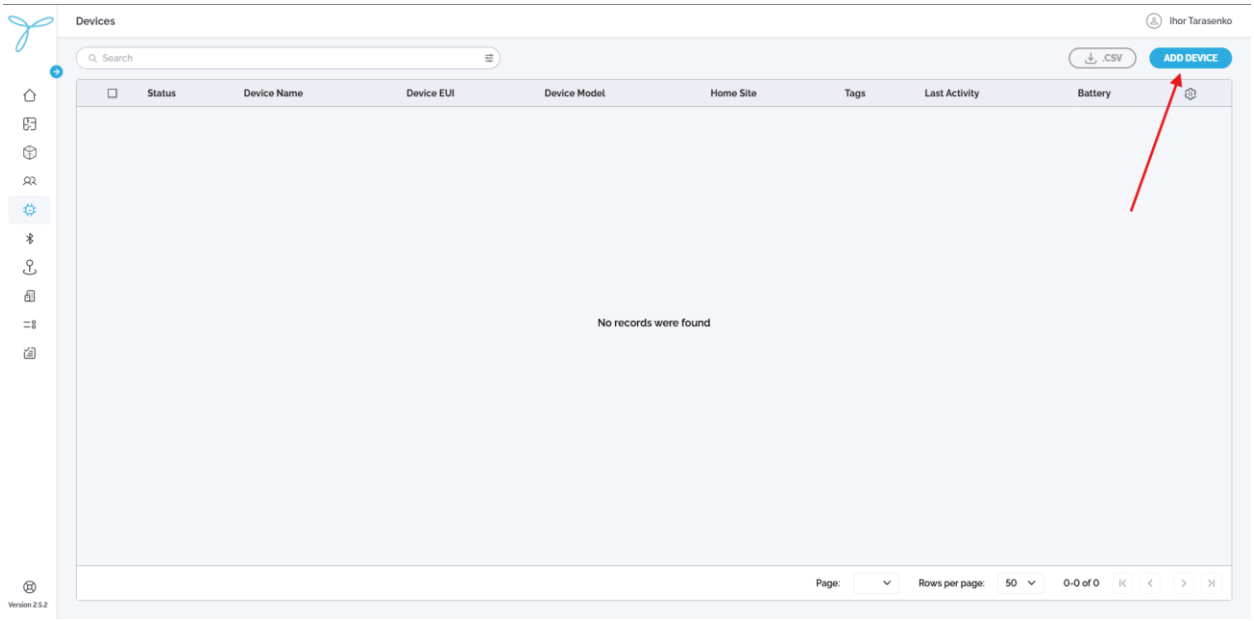


4. Enter **Inactivity timeout** for device. Assign **Device** to the existing **Site**. Other fields can leave blank. Click “**Save**”.

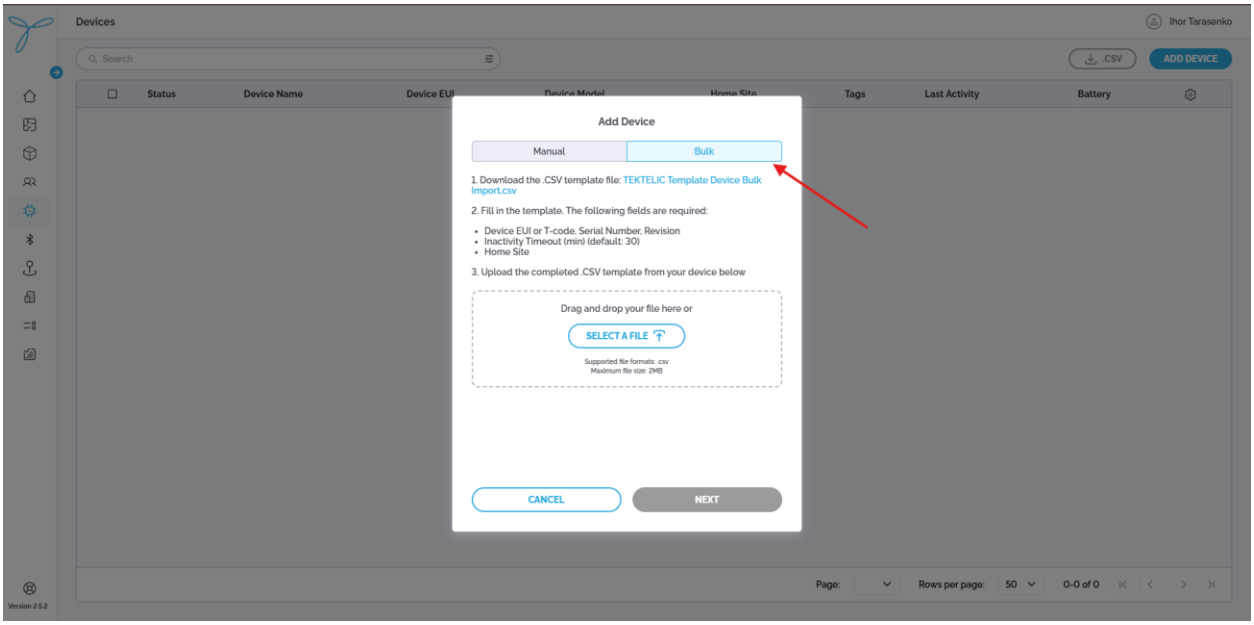


4.10 Add new device via Bulk

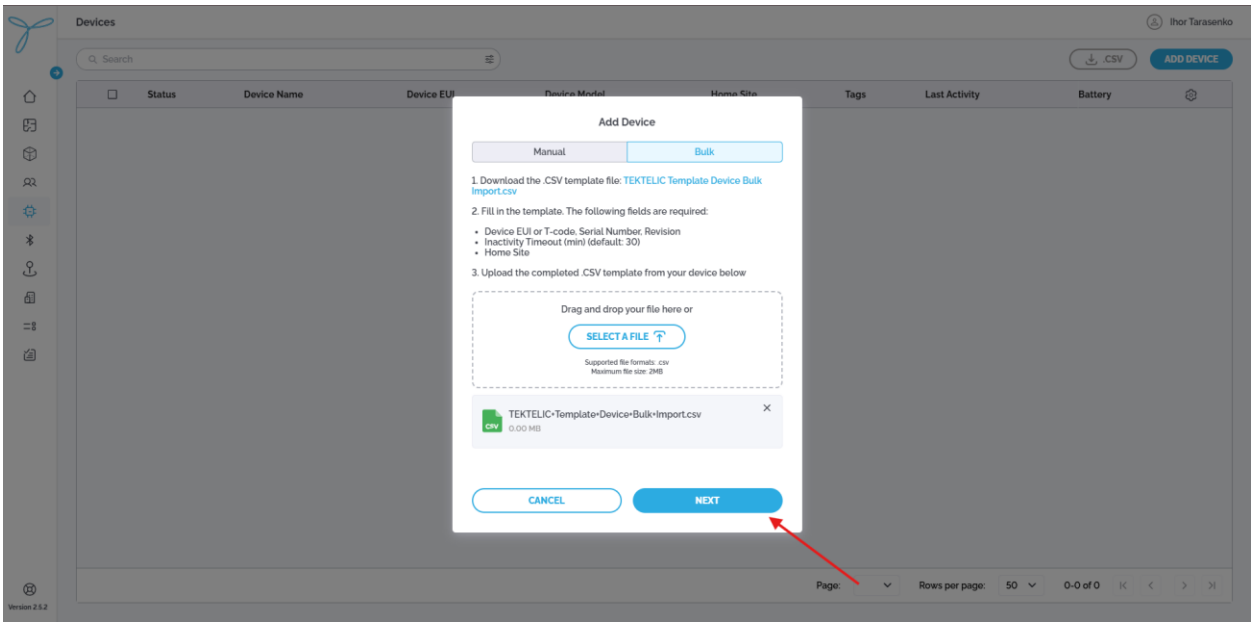
1. Navigate to **Devices** menu and click “**Add device”**.



2. Select **“Bulk”**



3. Import CSV file from the customer. Click on “**Next**”



For details on editing, deleting, CSV export or viewing devices, refer to the Locus Web App User Documentation

4.11 Assets

Overview

The Assets page lets you manage and monitor tracked items across sites, including their types, locations, and device associations.

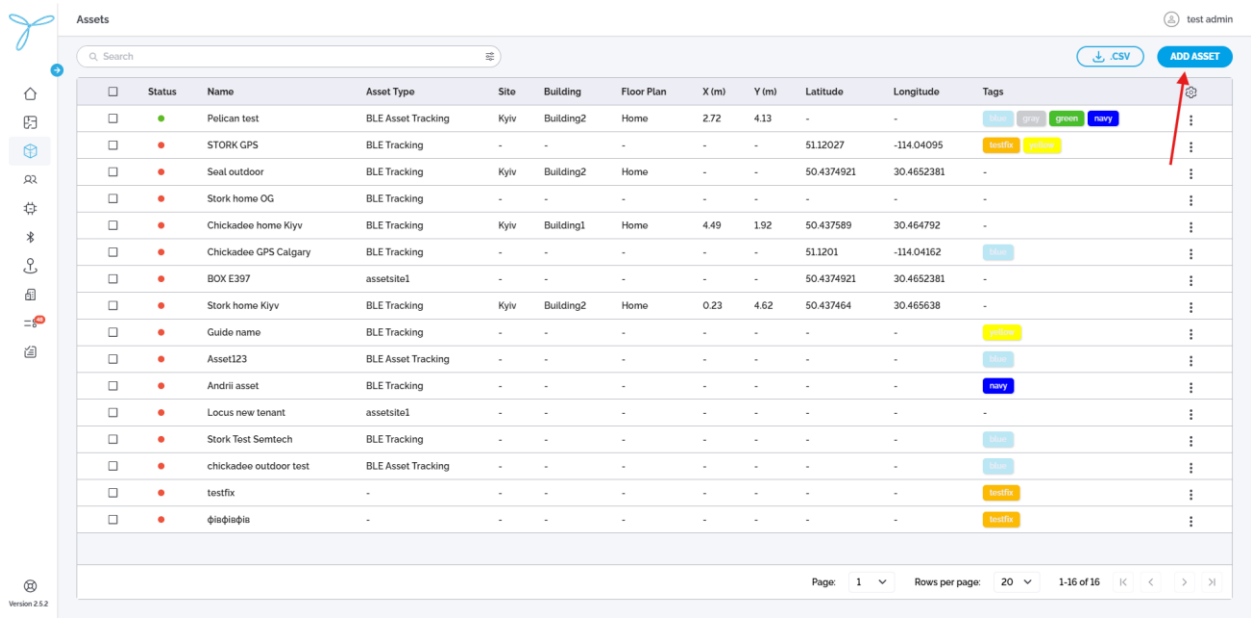
Before You Start

Ensure you have:

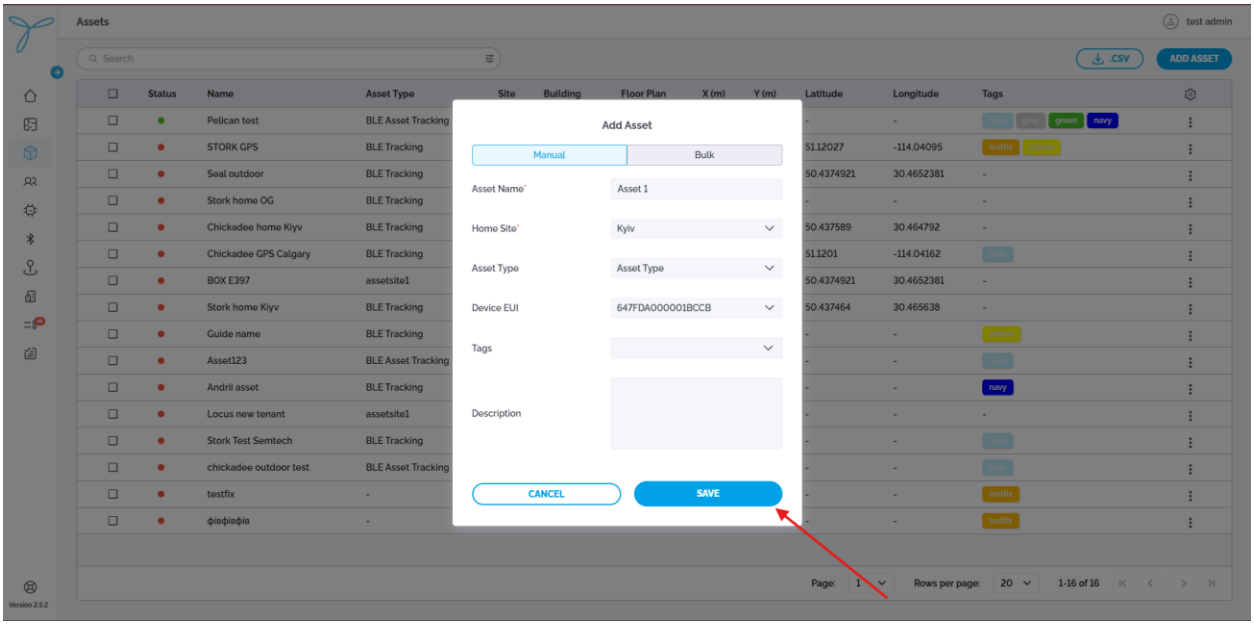
- A list of assets provided by the customer. See the Getting Started with Locus: Setup Requirements guide for details.
- For bulk import, CSV file filled with customers assets.

4.12 Add new asset

1. Navigate to **Assets** menu and click “**Add asset**”.

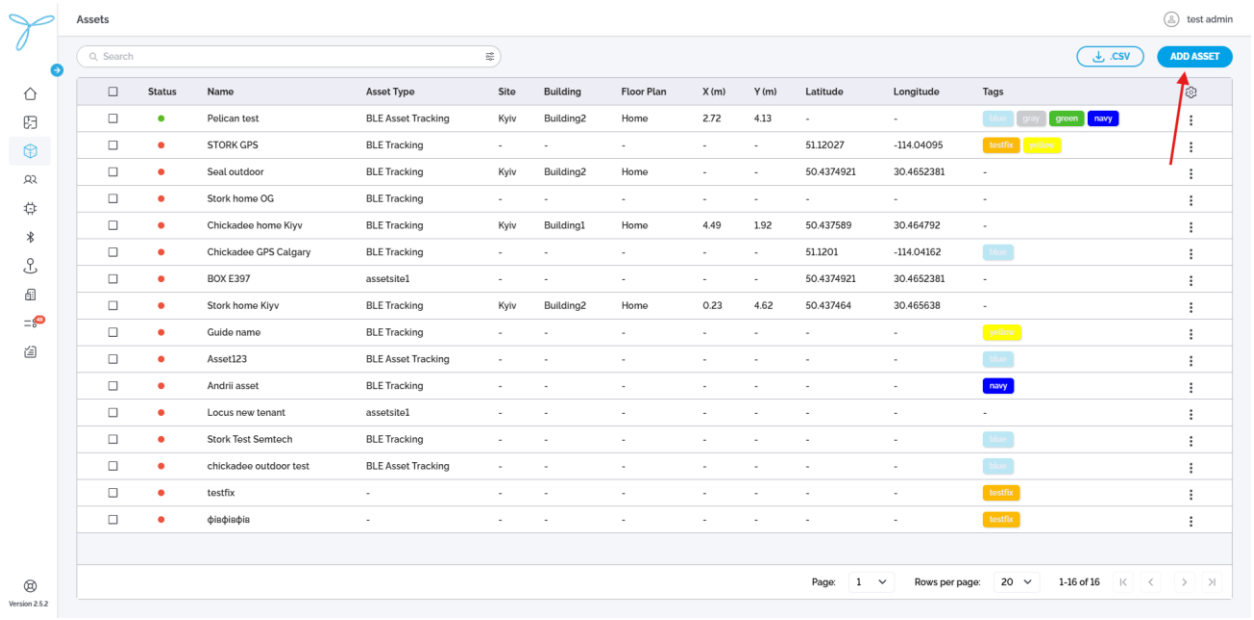


2. Enter asset name. Assign asset to an existing Site. Select DevEUI of existing Device to bound asset (optional). Click on “**Save**” button

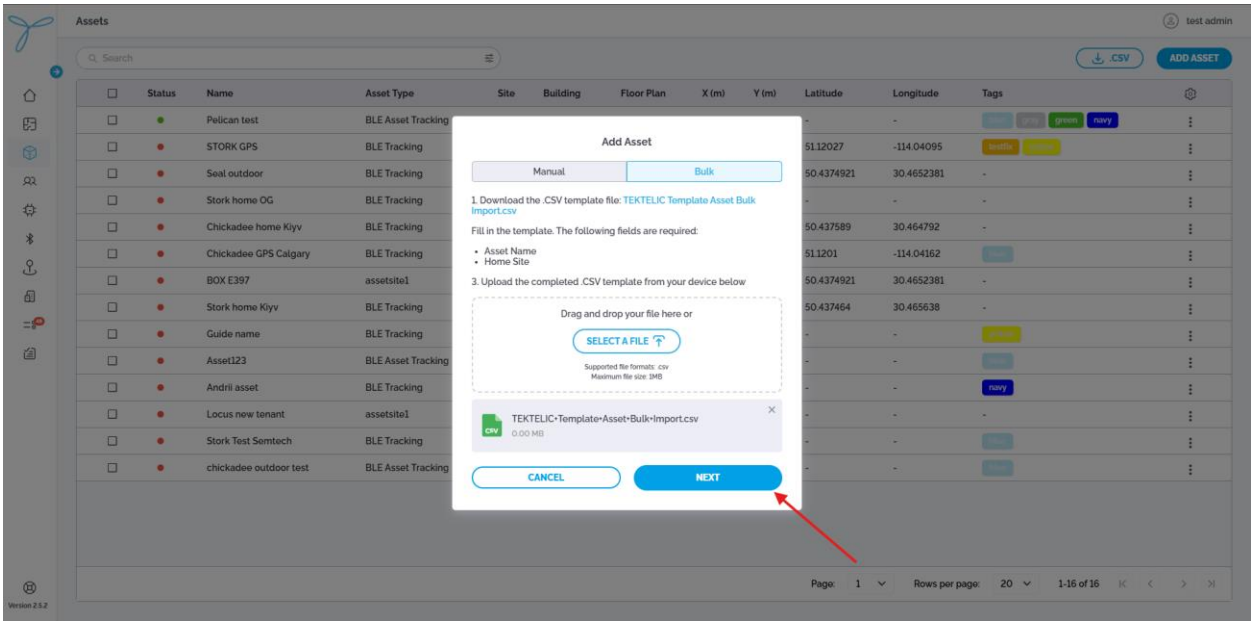


4.13 Add new asset via Bulk

1. Navigate to **Assets** menu and click "**Add asset**".



2. Import customer`s CSV file. Click on "**Next**" button



For details on editing, deleting, CSV export or viewing assets, refer to the [Locus Web App User Documentation]

4.14 Beacons

Overview

The Beacons page lets you manage and monitor beacons for indoor positioning and asset tracking.

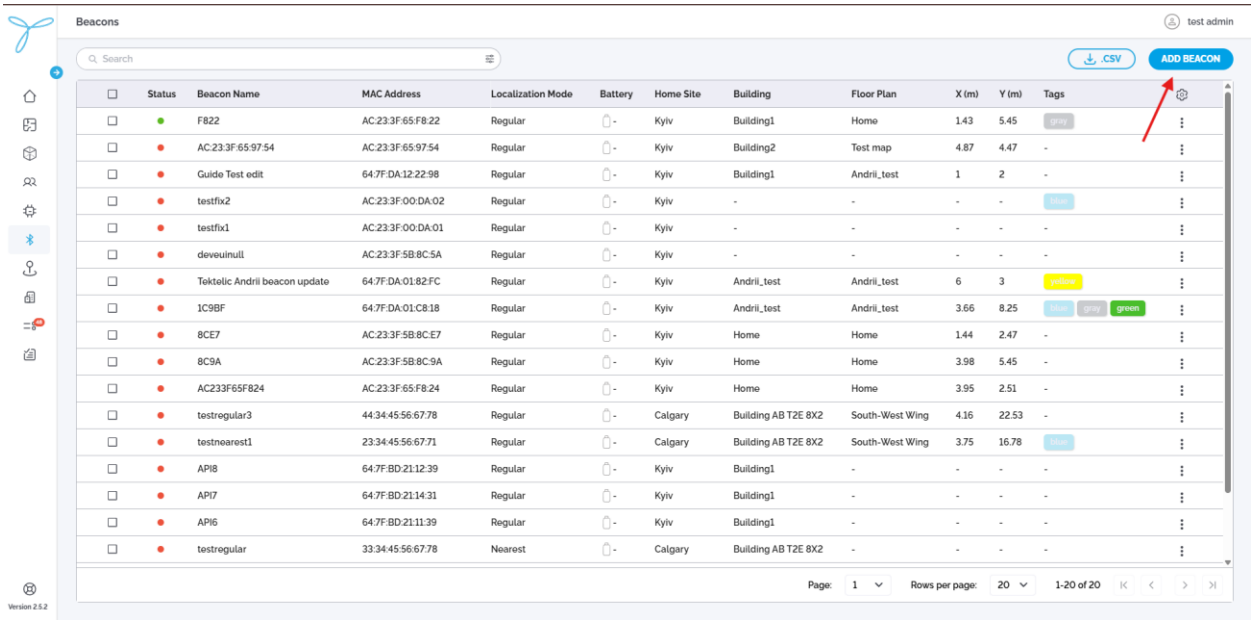
Before You Start

Ensure you have:

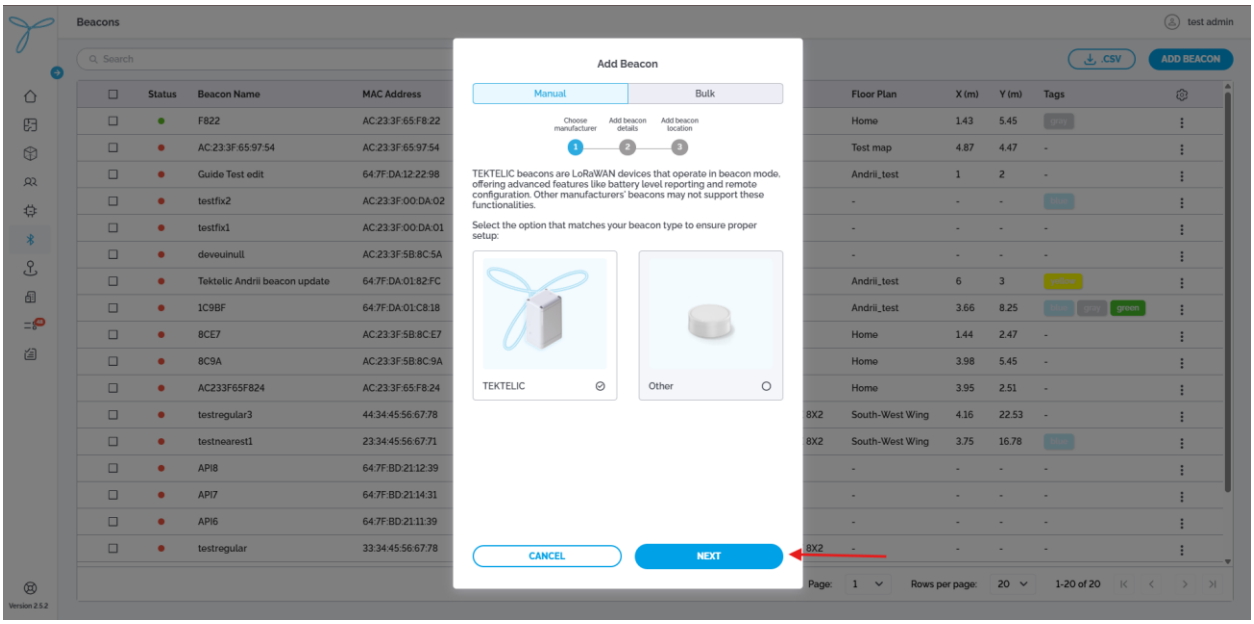
- A list of beacons provided by the customer. See the Getting Started with Locus: Setup Requirements guide for details.
- For bulk import, CSV file filled with customers beacons.
- **Contact Kyiv RnD team** (**or contact Kyiv RnD team (**Artem Starchenko **or** Oleksii Rassykhin**)** to create a "beacon model" (only for non-TEKTELIC beacons)

4.15 Add new beacon (TEKTELIC)

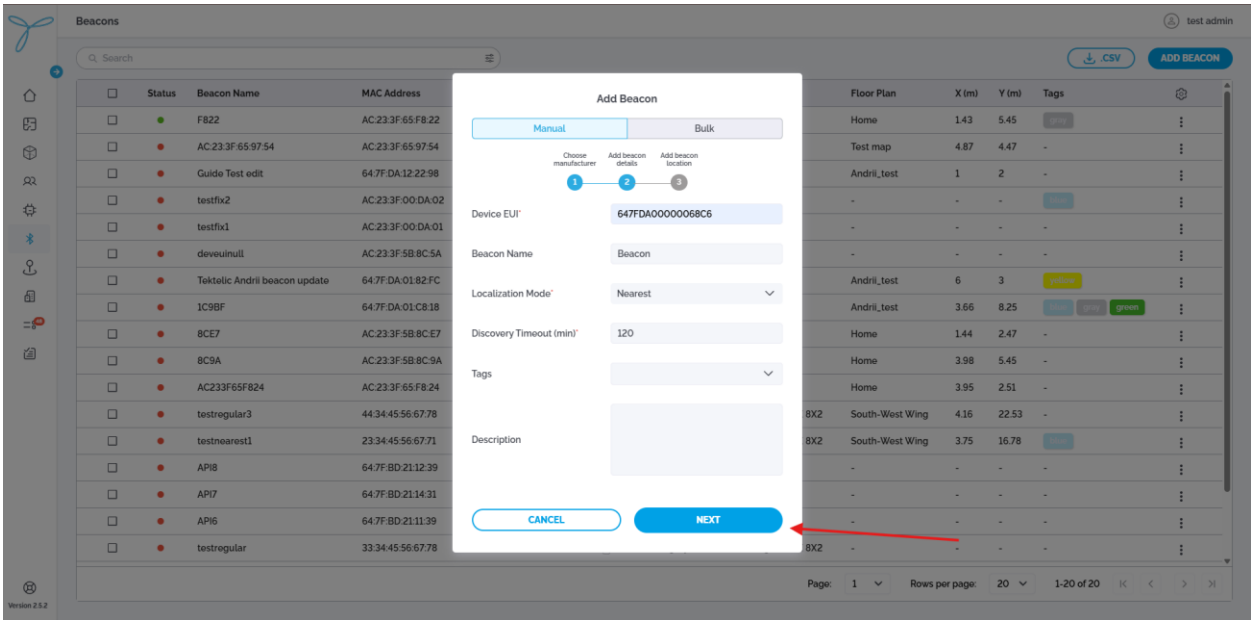
1. Navigate to **Beacons** menu and click "**Add beacon**".



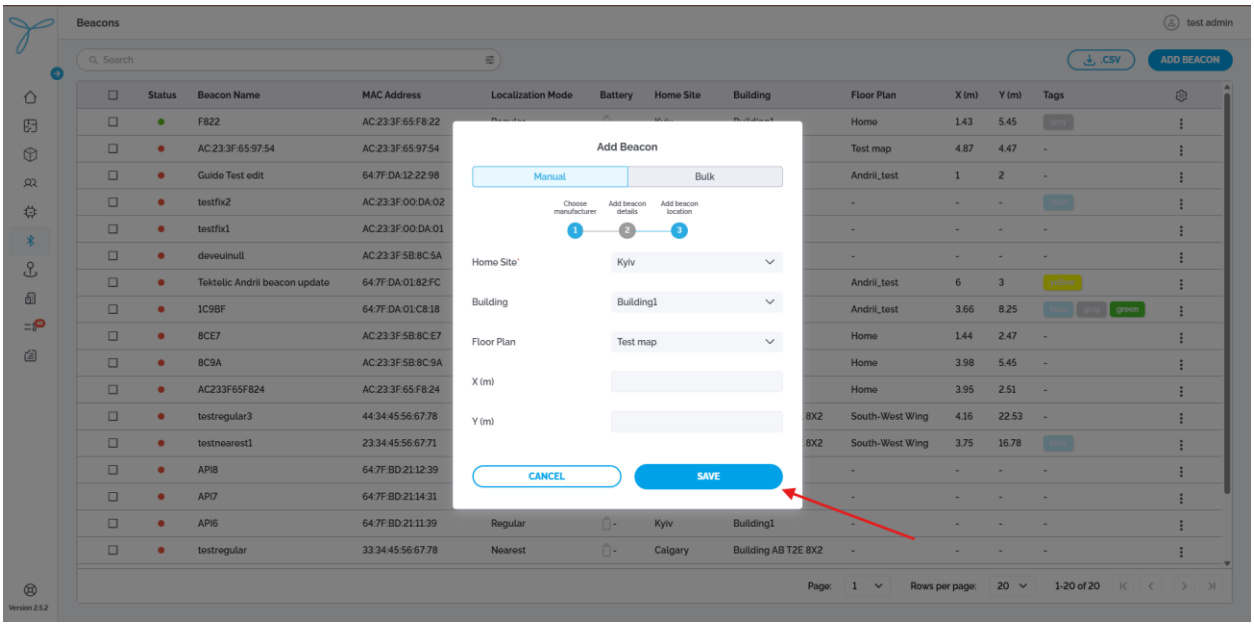
2. Select “**TEKTELIC**” as manufacturer. Click on “**Next**” button



3. Enter **DevEUI** of TEKTELIC tracker. Add beacon name(optional). Select “**Localization mode**”. Enter discovery timeout. Click on “**Next**” button

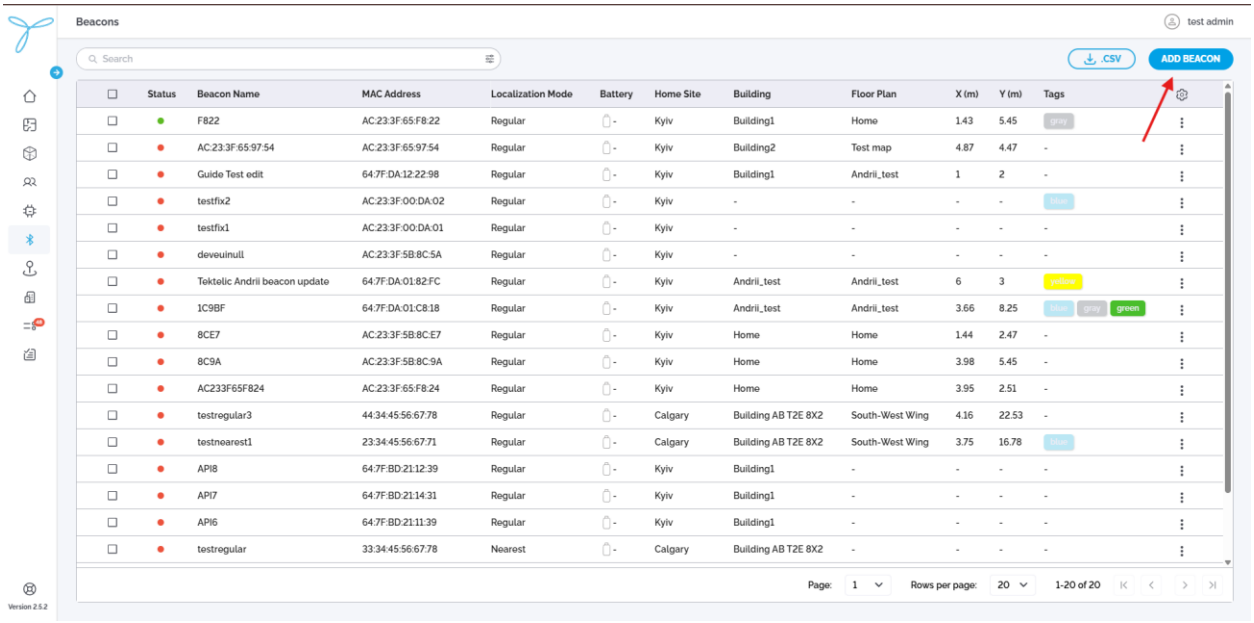


4. Select “Home Site”. Select “Building”. Select “Floor plan”. Click “Save”

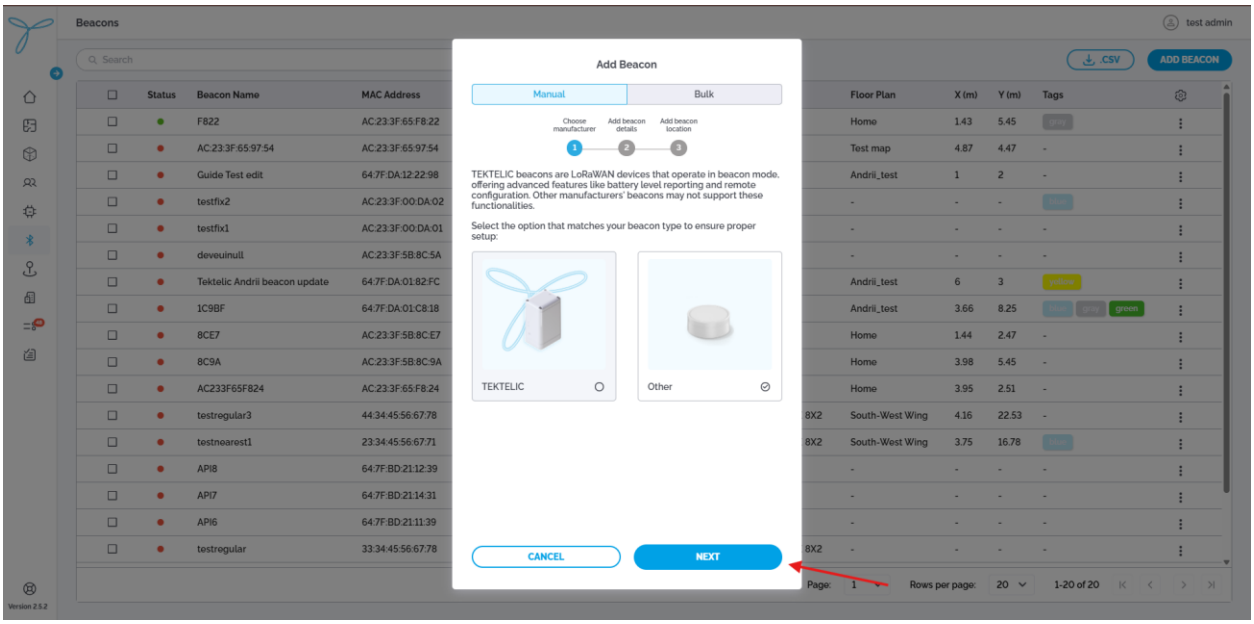


4.16 Add new beacon (Other)

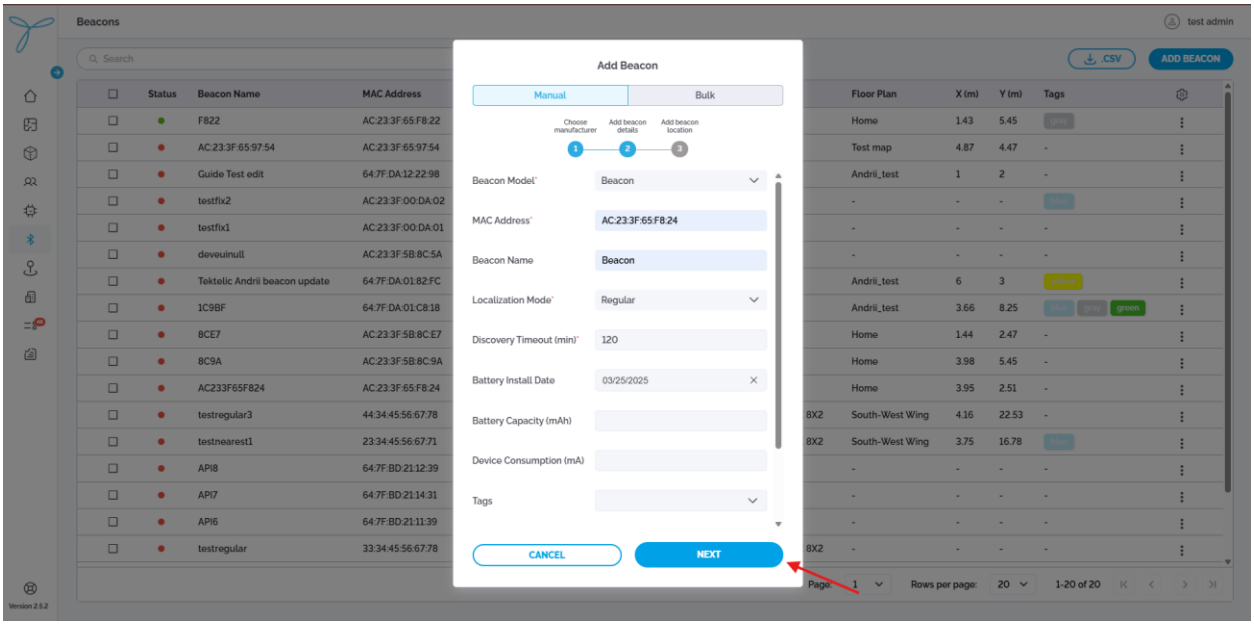
1. Navigate to **Beacons** menu and click “**Add beacon**”.



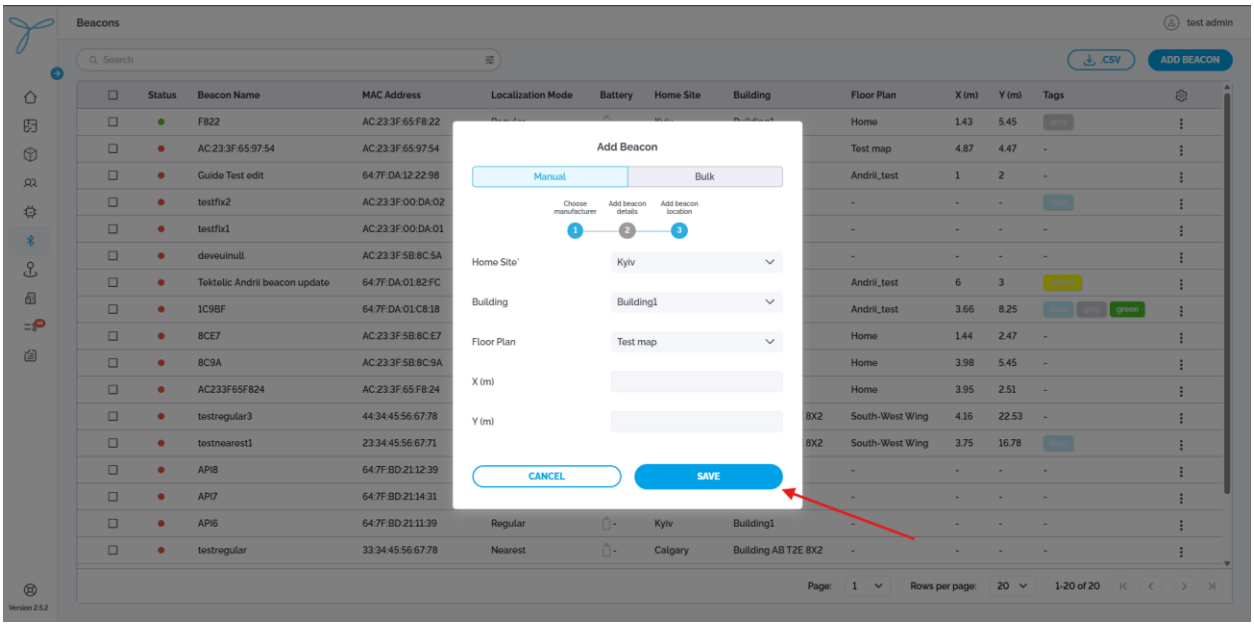
2. Select “Other” as manufacturer. Click on “Next” button



3. Select “**Beacon model**”. Enter “**MAC address**”. Enter “**Name**”. Select “**Localization mode**”. Enter discovery timeout. Click on “**Next**” button.

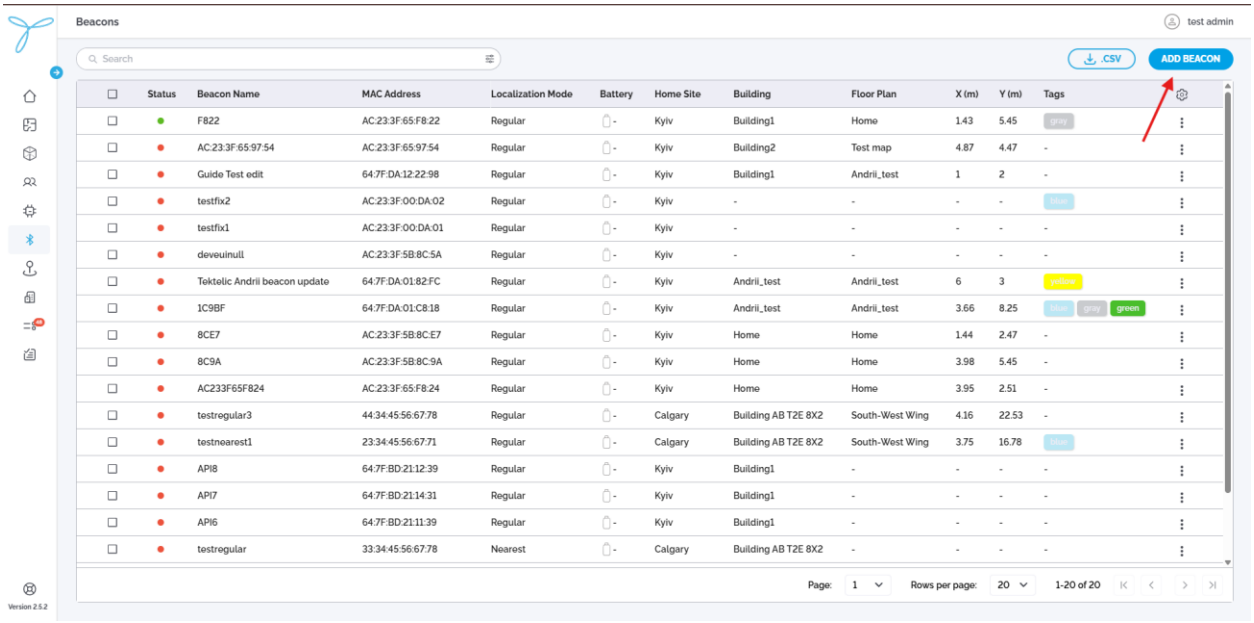


4. Select “**Home Site**”. Select “**Building**”. Select “**Floor plan**”. Click “**Save**”

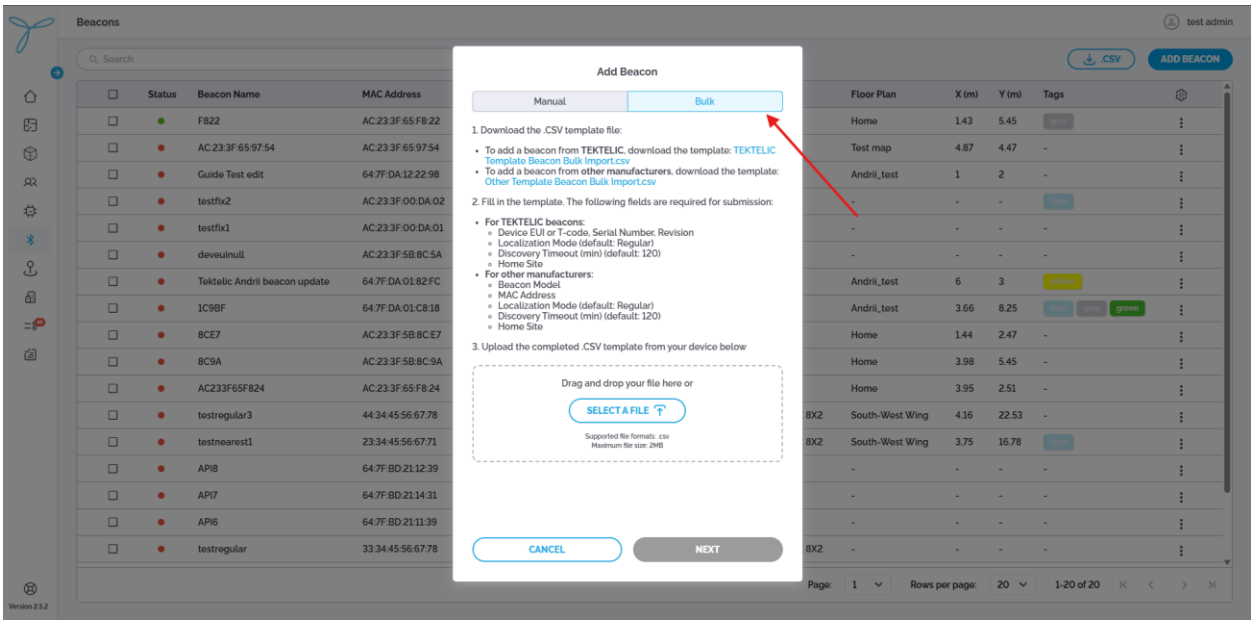


4.17 Add new beacons via Bulk

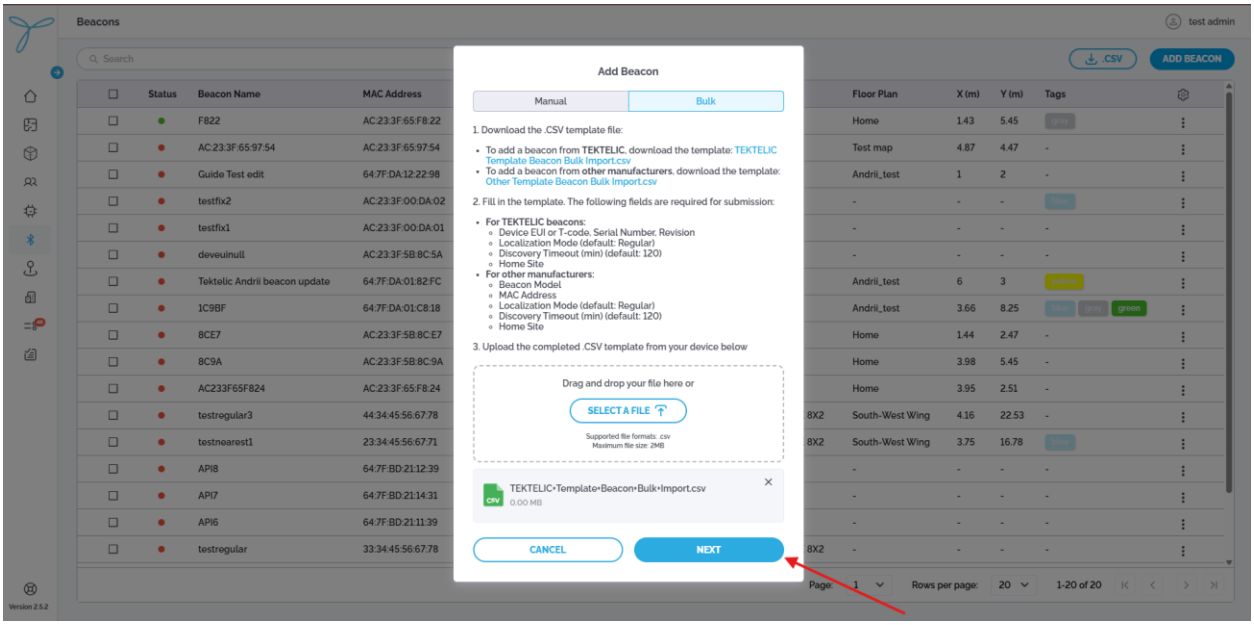
1. Navigate to **Beacons** menu and click “**Add beacon**”.



2. Select “**Bulk**”



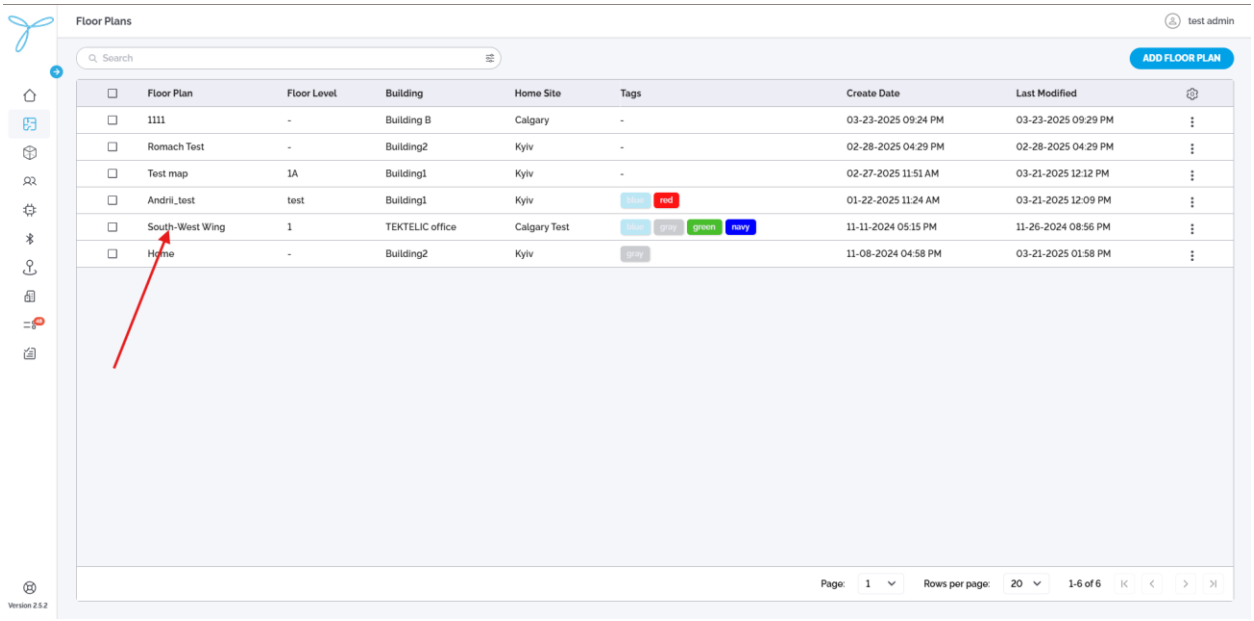
3. Import customer`s CSV file. Click “**Next**”



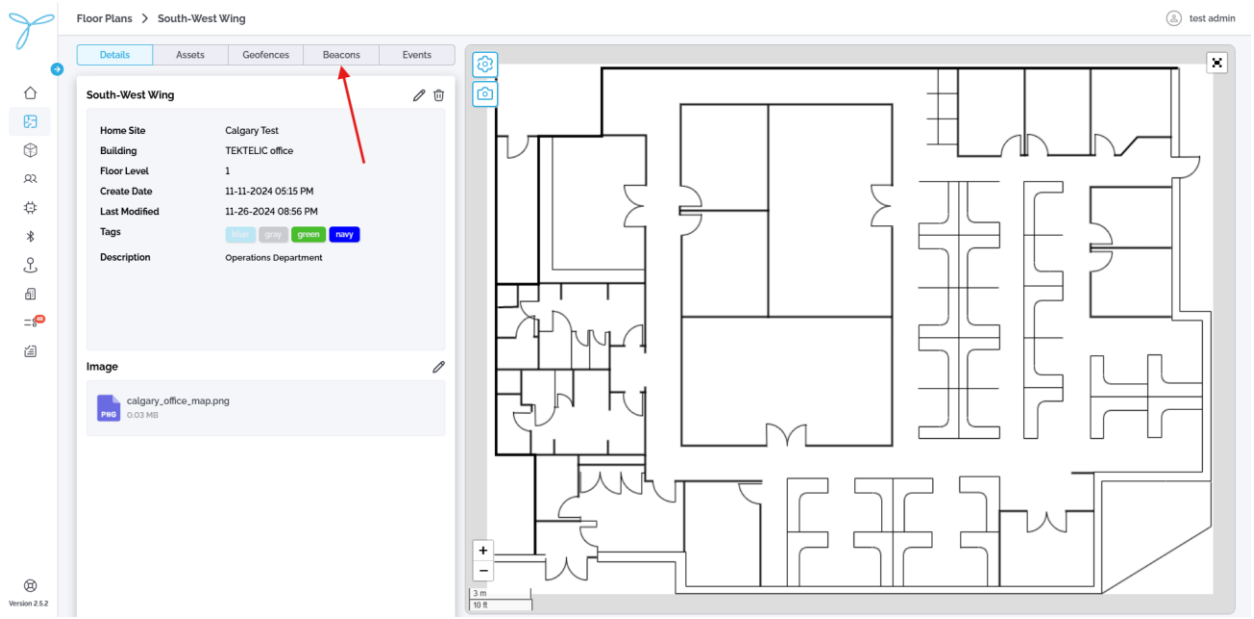
For details on editing, deleting, CSV export or viewing beacons, refer to the [Locus Web App User Documentation]

4.18 Assign Beacon to the floor plan

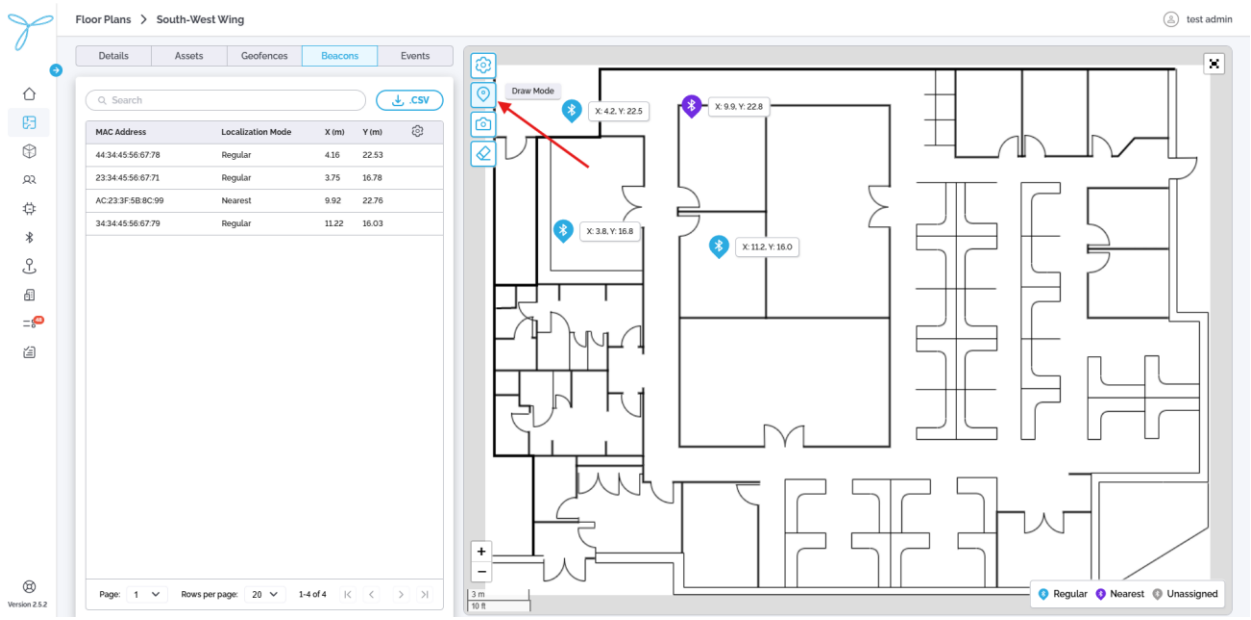
1. Navigate to **Floor plans** menu and select “**Floor plan**”



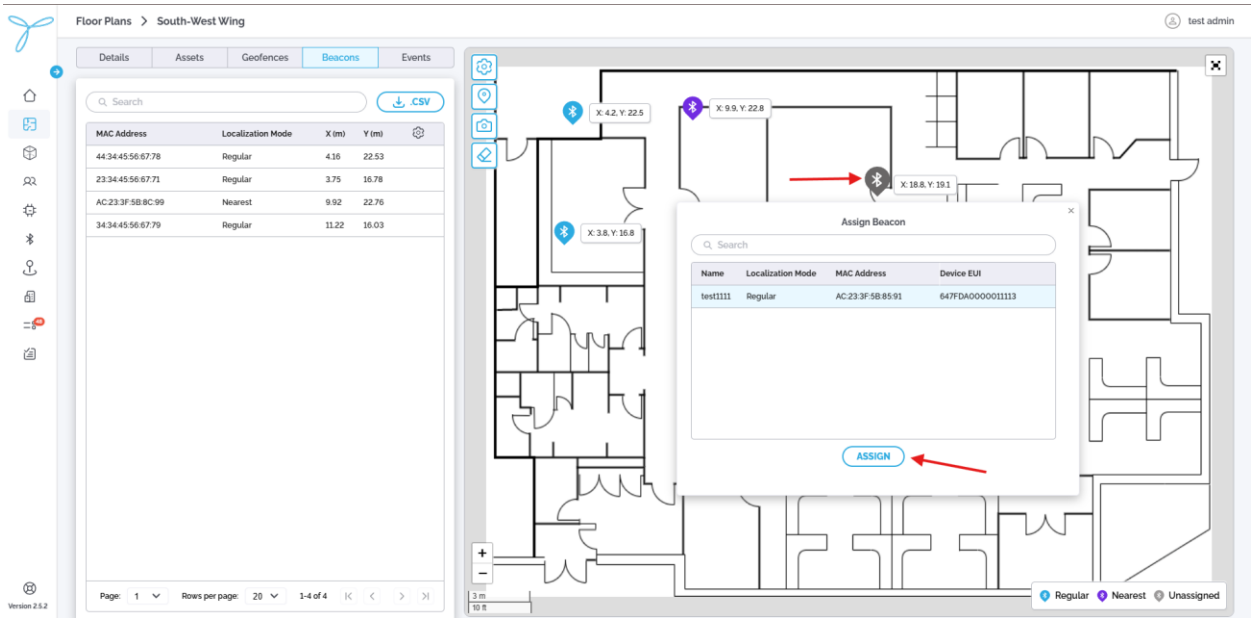
2. Open “**Beacons**” tab.



3. Click on “**Draw mode**” button. Click on the map to assign beacon position. Click on “**Draw mode**”.

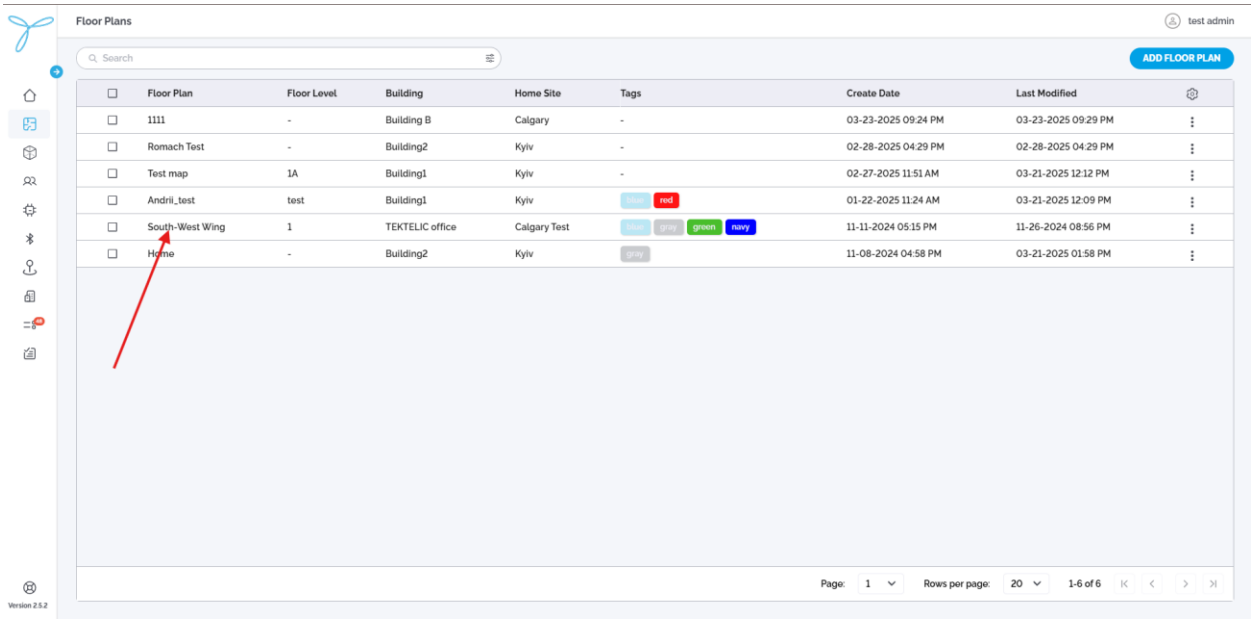


4. Click on the beacon`s pin. Select beacon from the list. Click on “**Assign**”

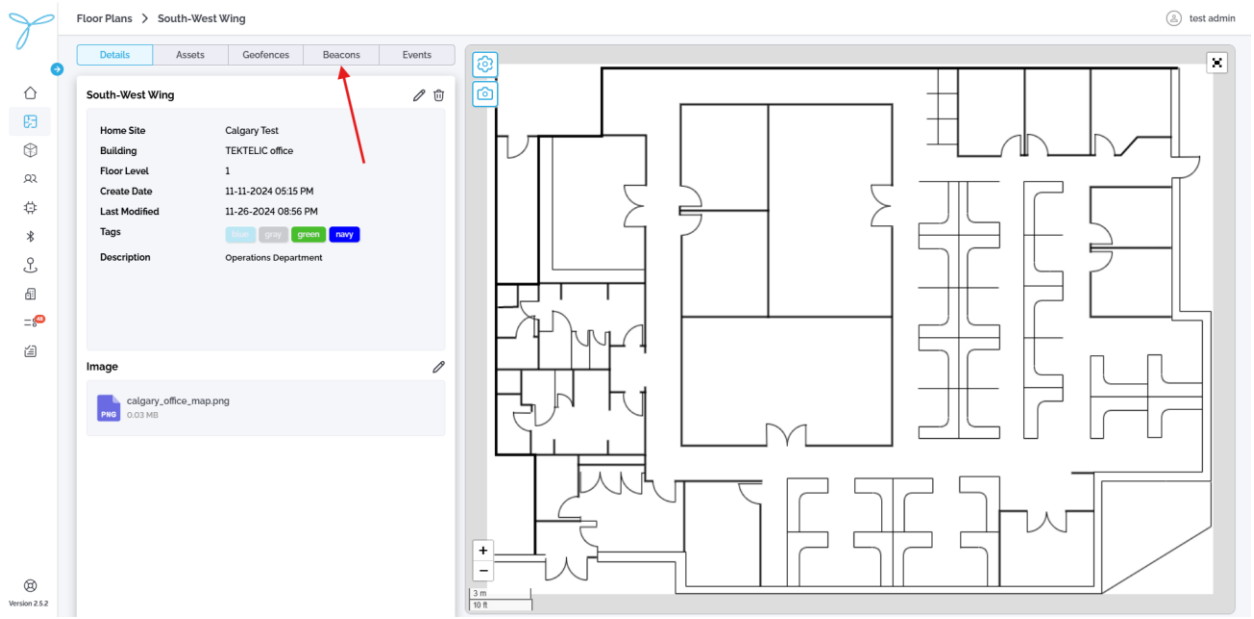


4.19 Edit Beacon`s position

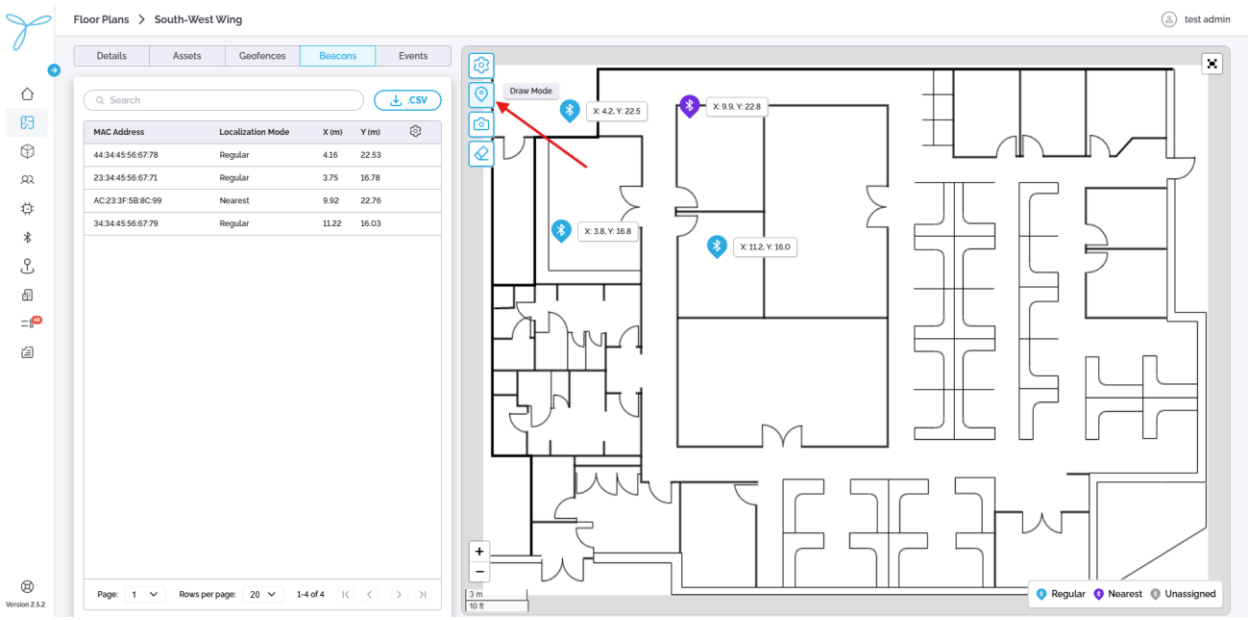
1. Navigate to **Floor plans** menu and select “**Floor plan**”



2. Open “**Beacons**” tab.



3. Click on “**Draw mode**”. Hold and “drag” beacon to it`s new position. Click on “**Draw mode**”



For more details on beacons positioning, refer to the Locus Web App User Documentation

4.20 Geofences (Optional)

Overview

The specific geofence(s) on either the indoor or outdoor map where the asset was located at the time the device generated the report.

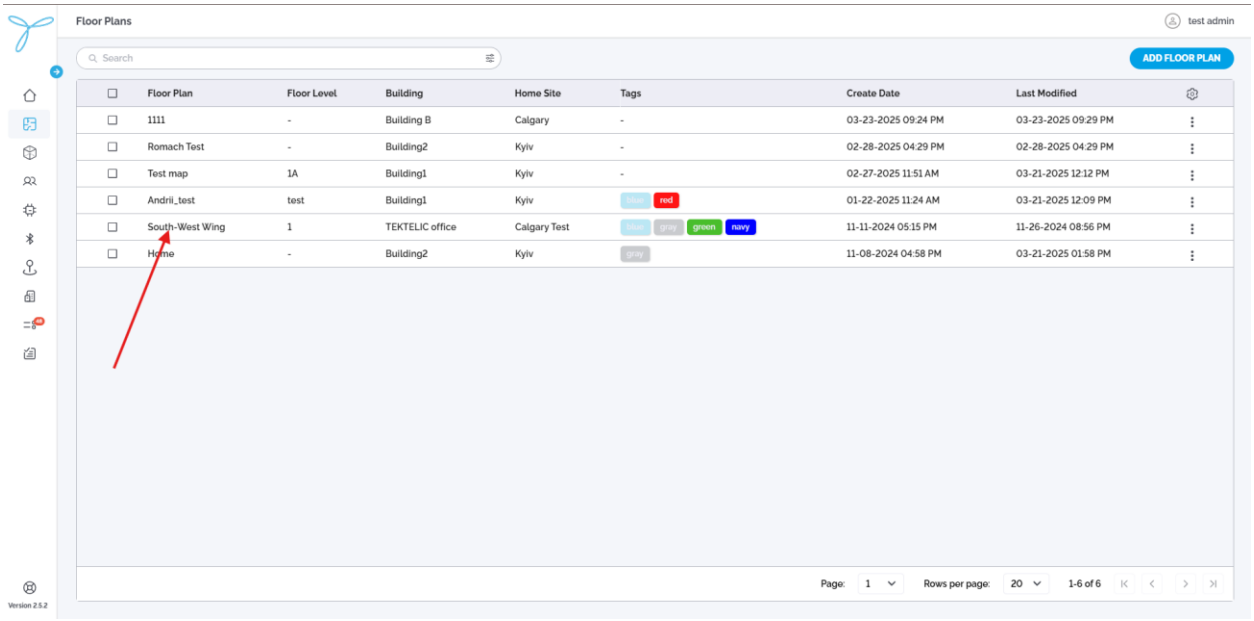
Before You Start

Ensure you have:

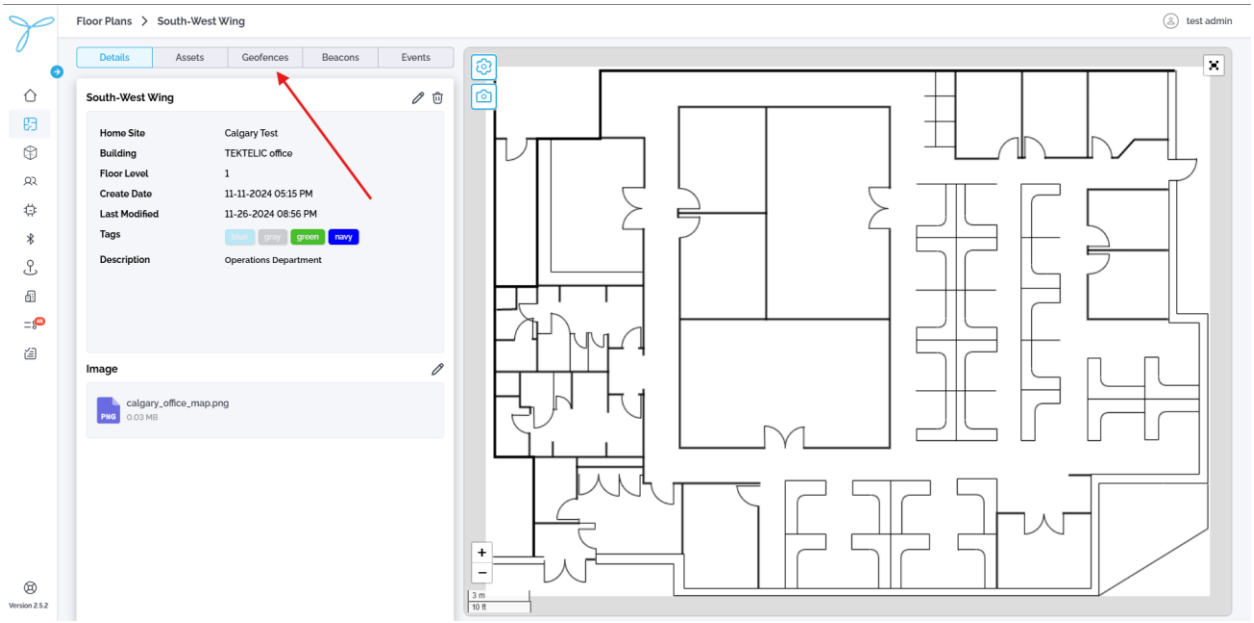
- A list of geofences provided by the customer. See the Getting Started with Locus: Setup Requirements guide for details.

4.21 Add new geofence(indoor)

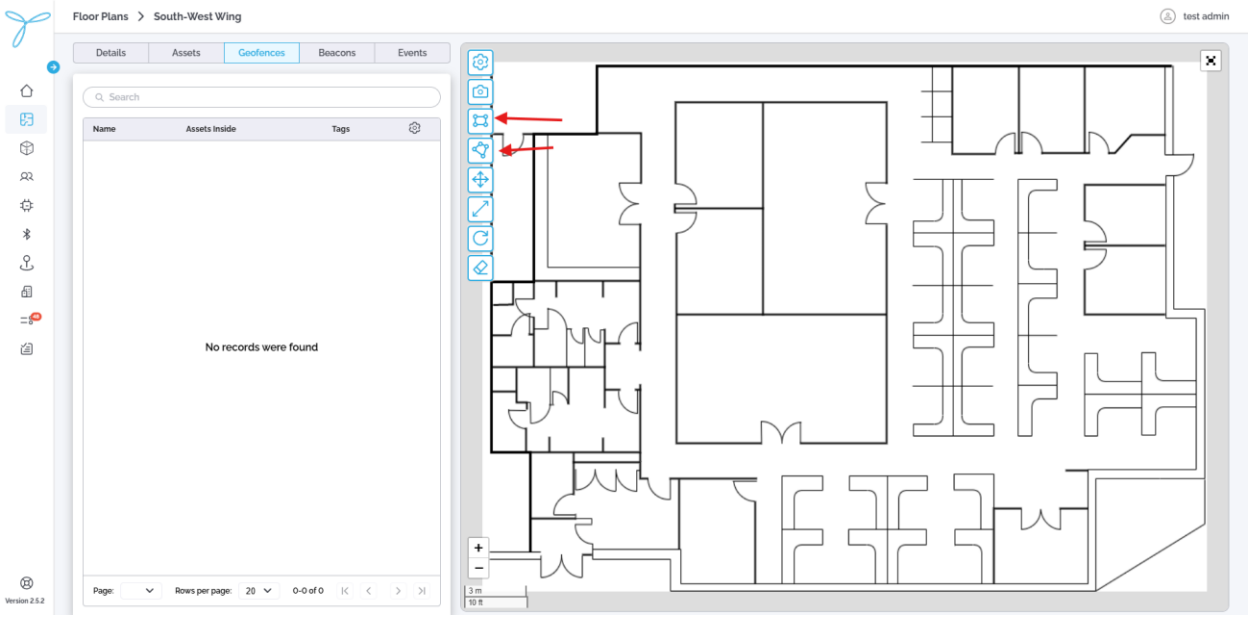
1. Navigate to **Floor plans** menu and select “**Floor plan**”



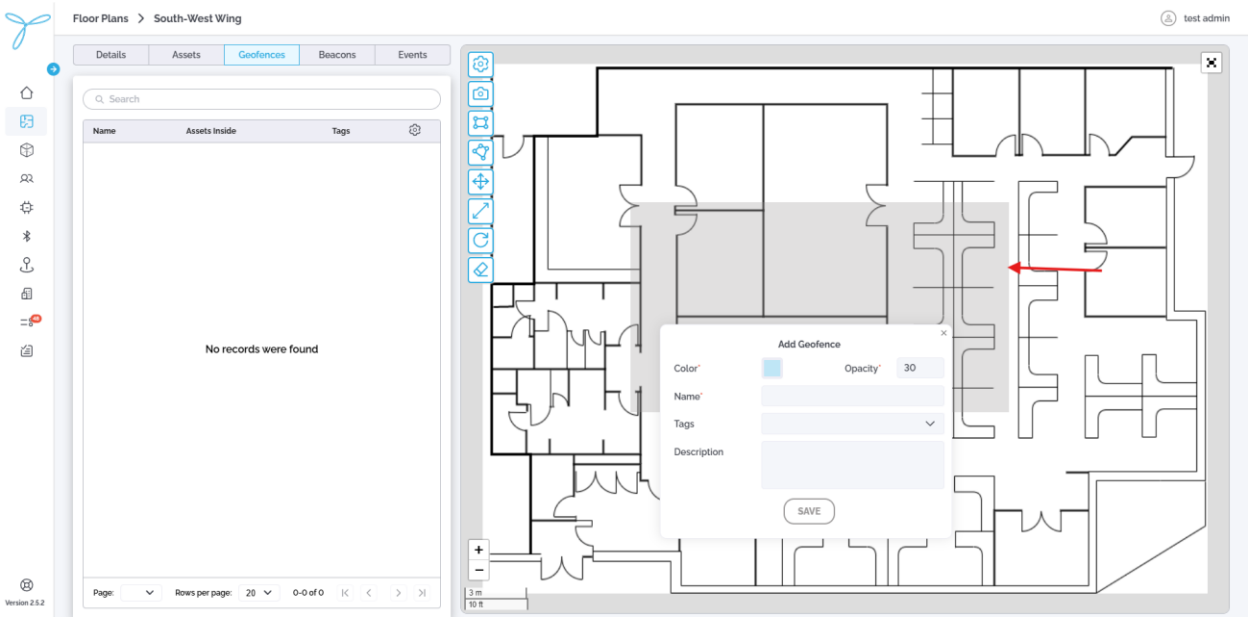
2. Open “**Geofences**” tab.



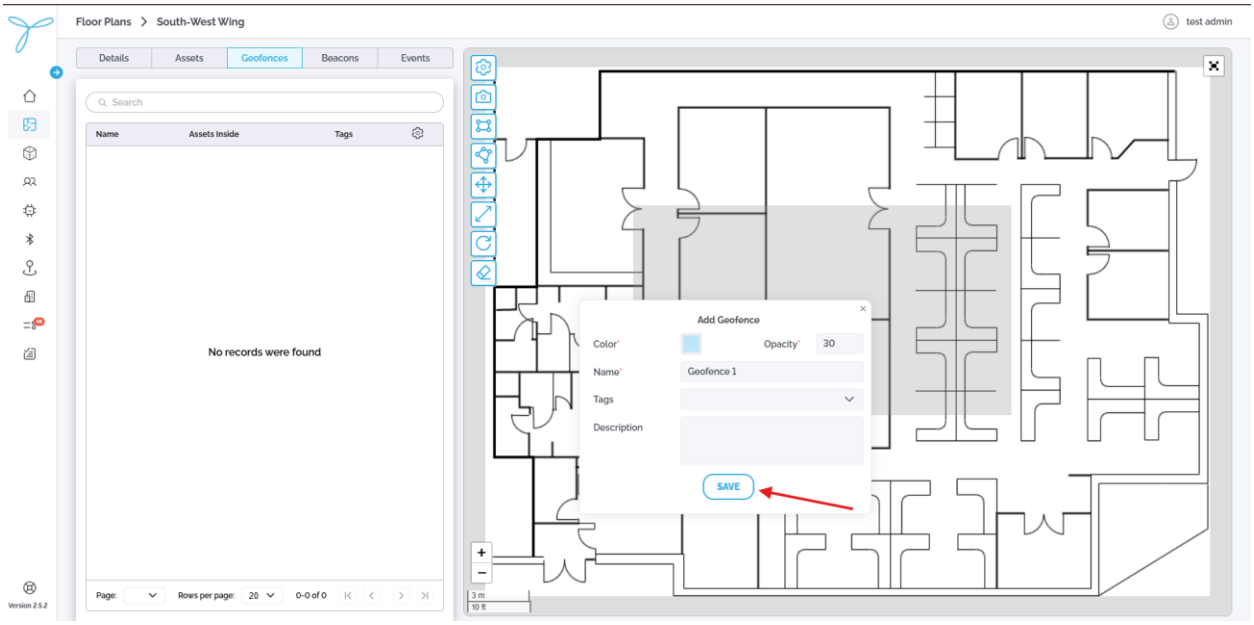
3. Select “**Draw polygon**” or “**Draw rectangle**” option



4. Define geofence boundaries. Click on “**Draw polygon**” or “**Draw rectangle**” button to exit edit mode. Click on geofence boundaries to open “**Add geofence**” modal window.

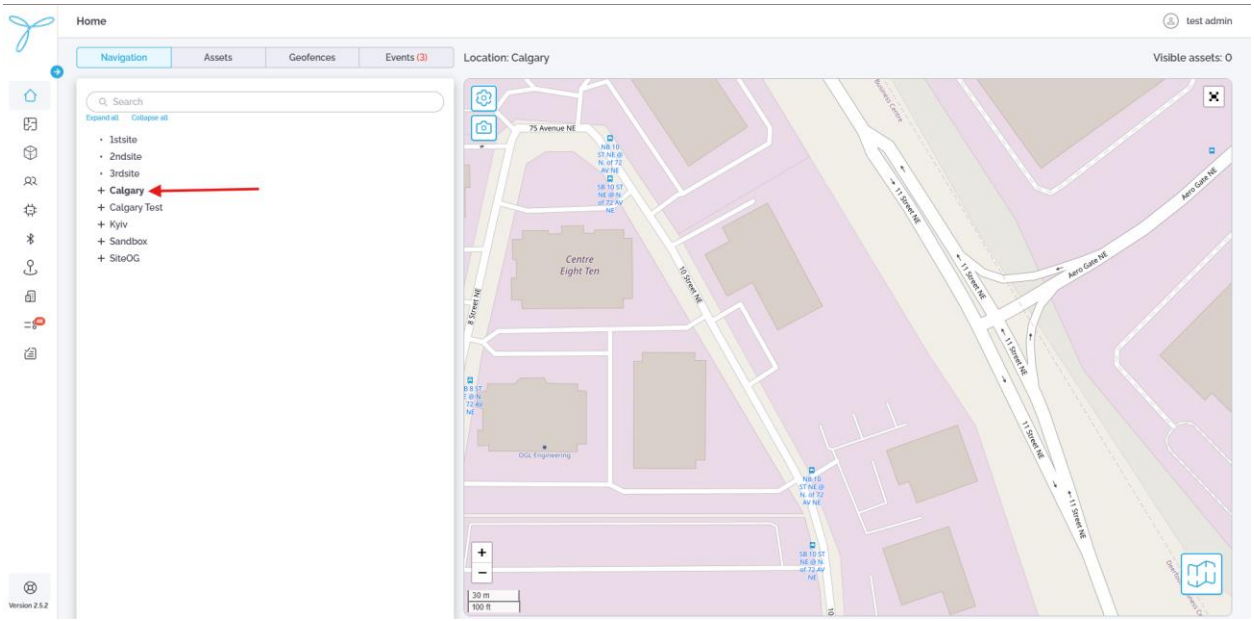


5. Select **geofence** color. Enter geofence name. Click on "**Save**" button

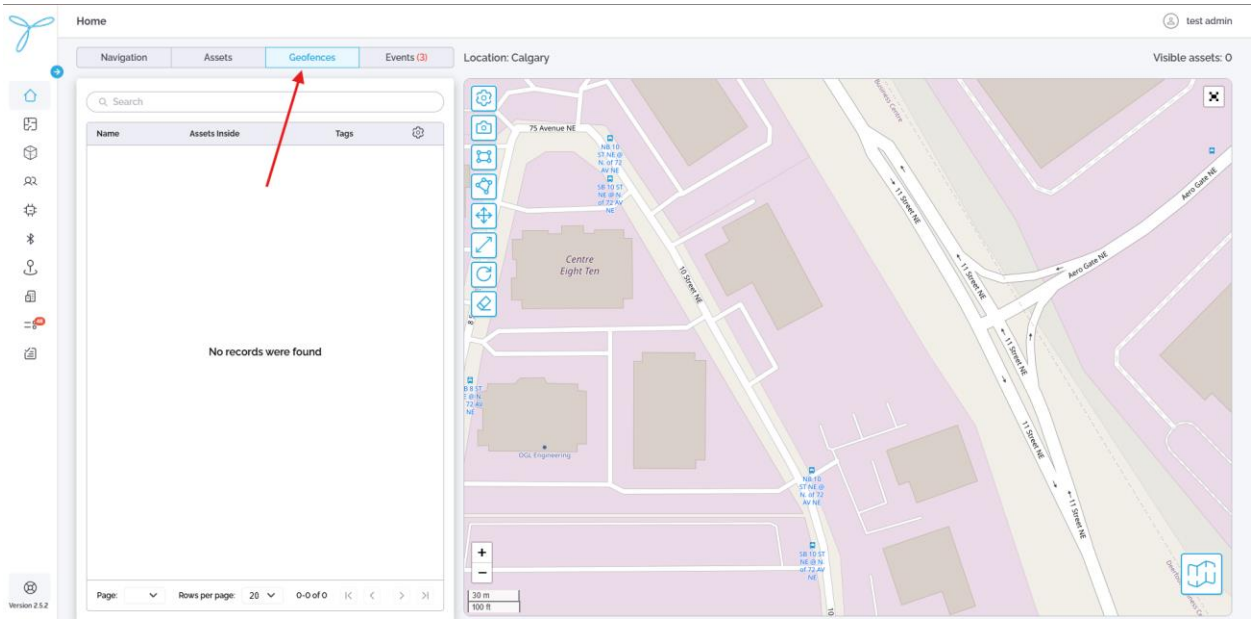


4.22 Add new geofence(outdoor)

1. Navigate to **Home** menu and select **Site.**



2. Open “**Geofences**” section.



3. Follow the same steps, as for indoor geofence.

For more details on geofences, refer to the Locus Web App User Documentation

4.23 Event Rules (Optional)

Overview

The Event Rules page lets you create and monitor rules that trigger events (e.g., assets entering/exiting geofences) across sites. Event rules are bounded with existing geofences.

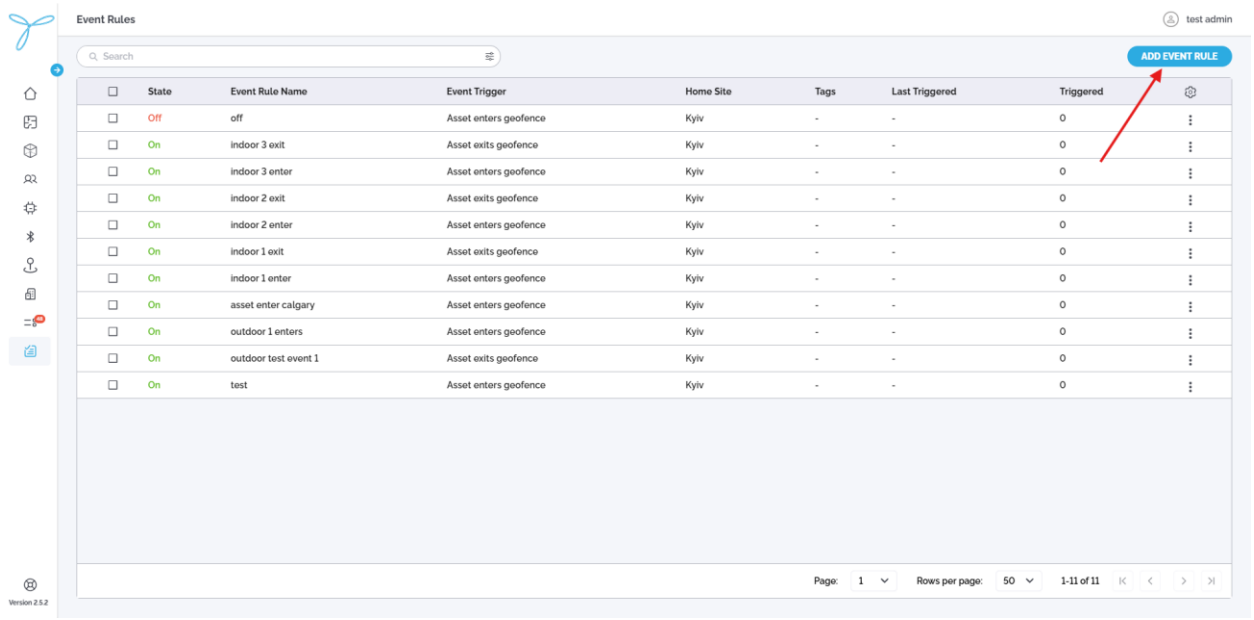
Before You Start

Ensure you have:

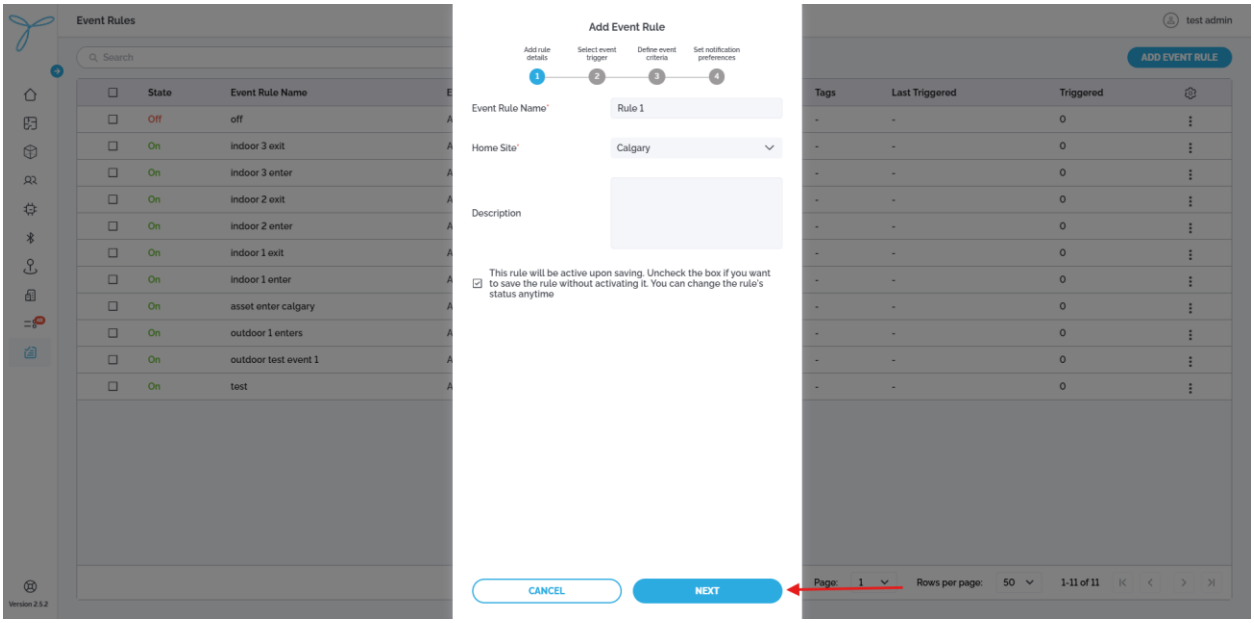
- A list of event-rules provided by the customer. See the Getting Started with Locus: Setup Requirements guide for details.

4.24 Add new Event Rule (without Webhook)

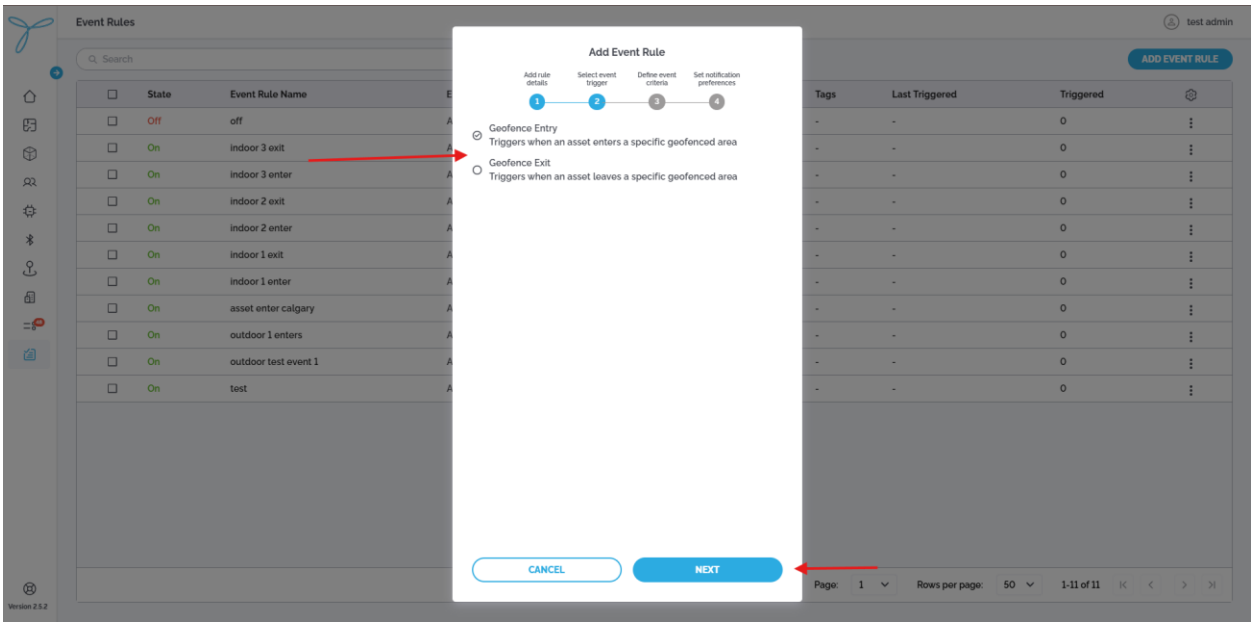
1. Navigate to **Event rules** menu and click “**Add event rule**”



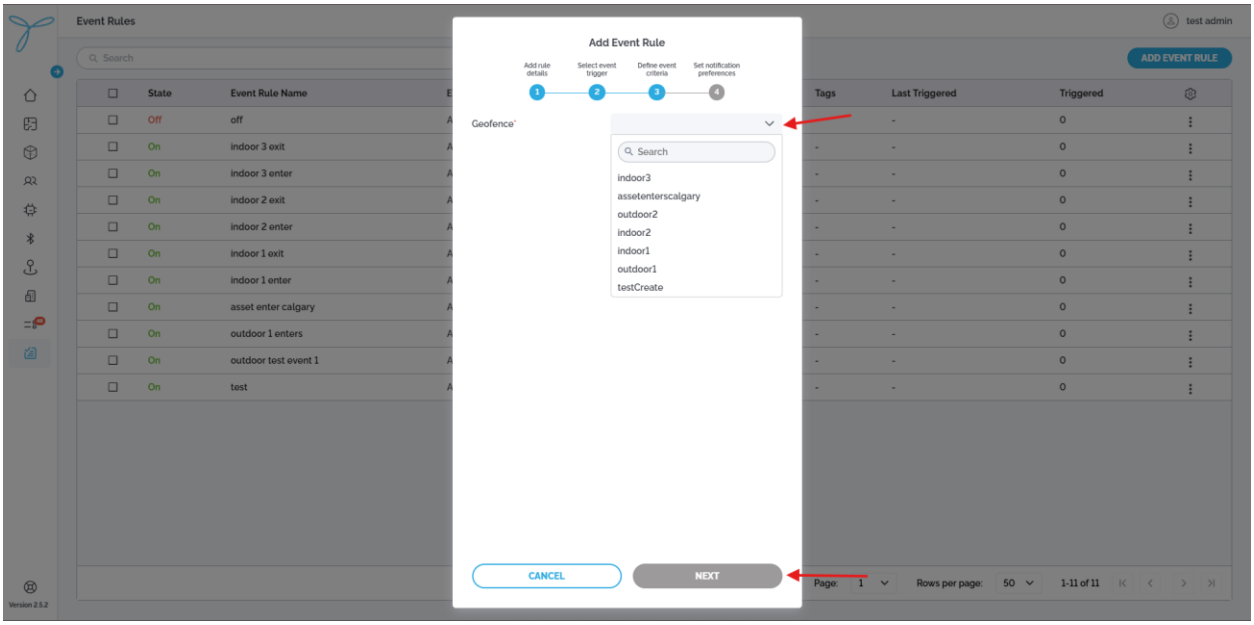
2. Enter **Name**. Select **Home Site**.



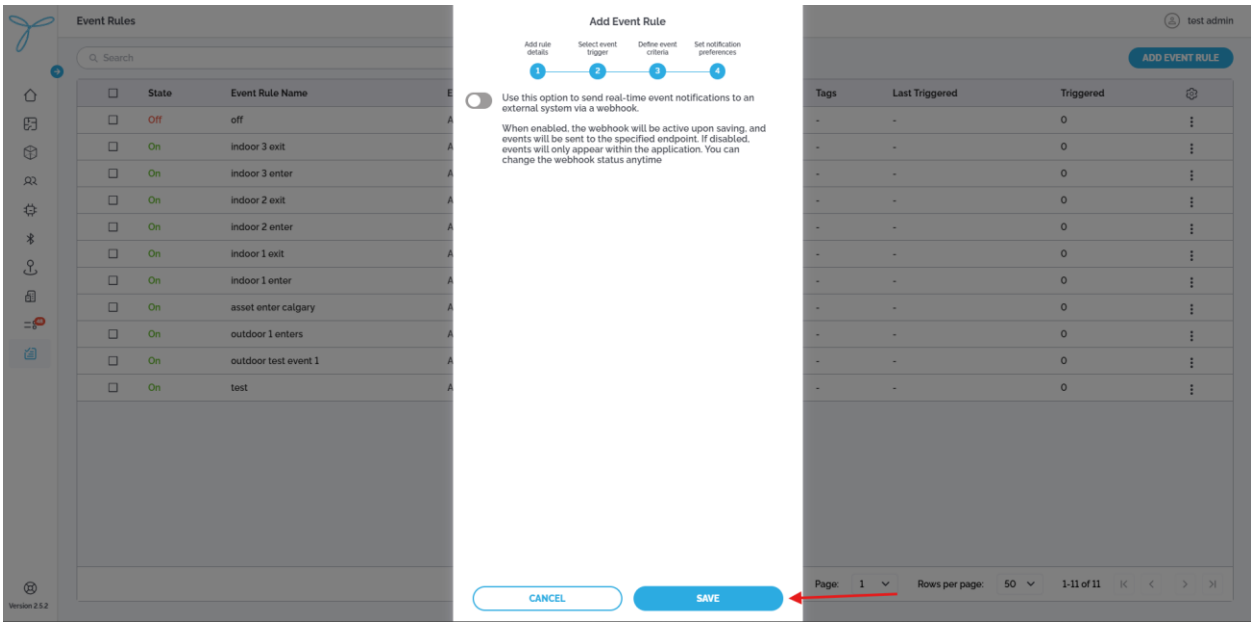
3. Select **Event trigger**. Click on "**Next**"



4. Select **geofence** to bound the **event rule**. Click on "**Next**"

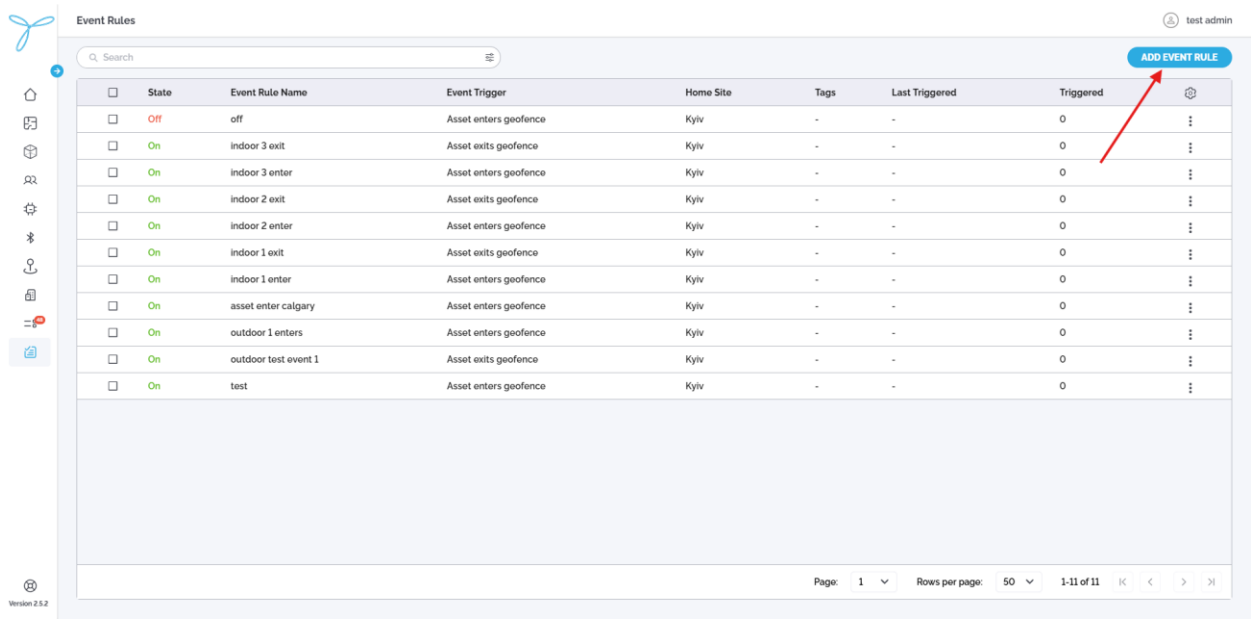


5. Click on “**Save**” button.

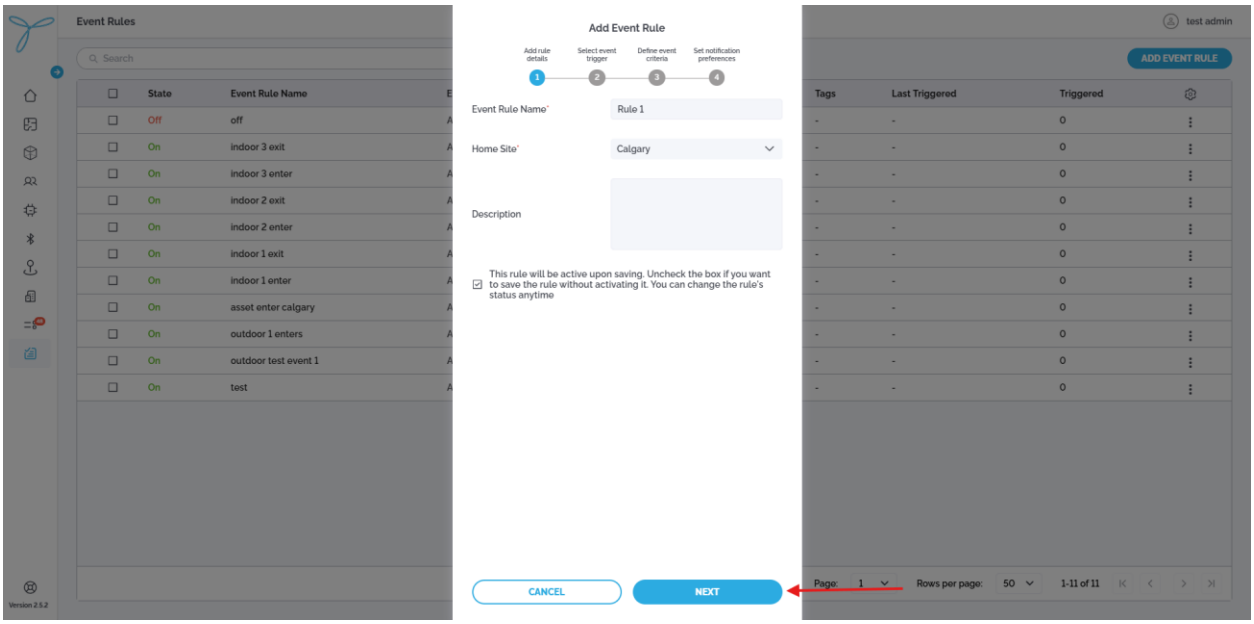


4.25 Add new Event Rule (with Webhook)

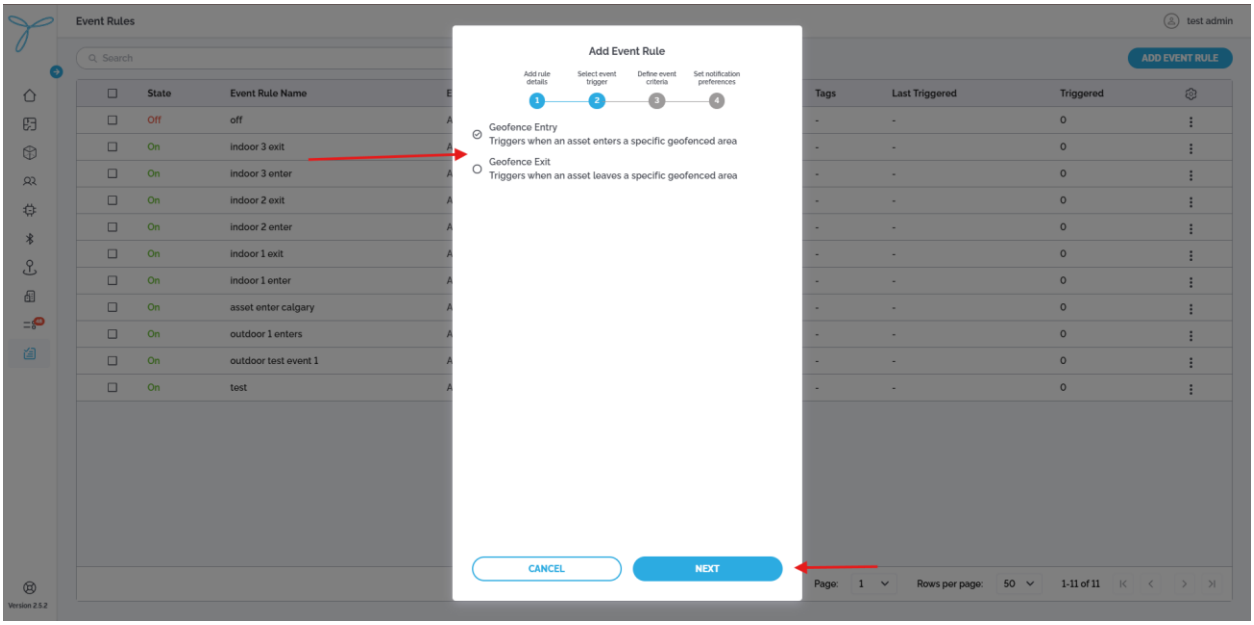
1. Navigate to **Event rules** menu and click “Add event rule”



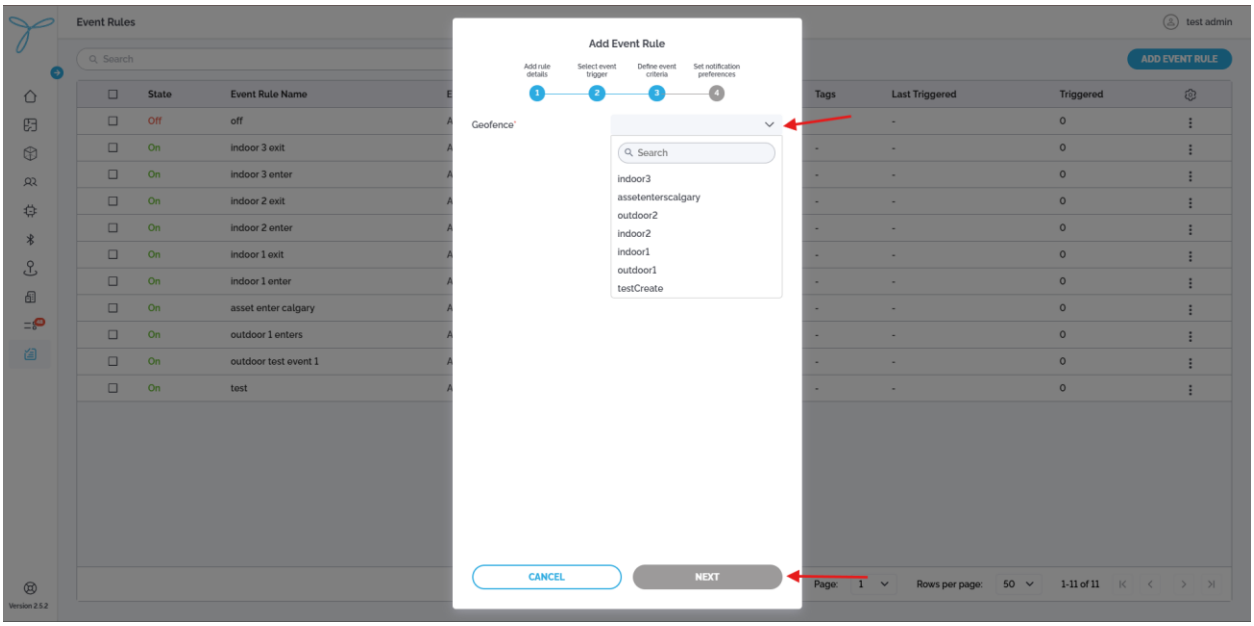
2. Enter **Name**. Select **Home Site**.



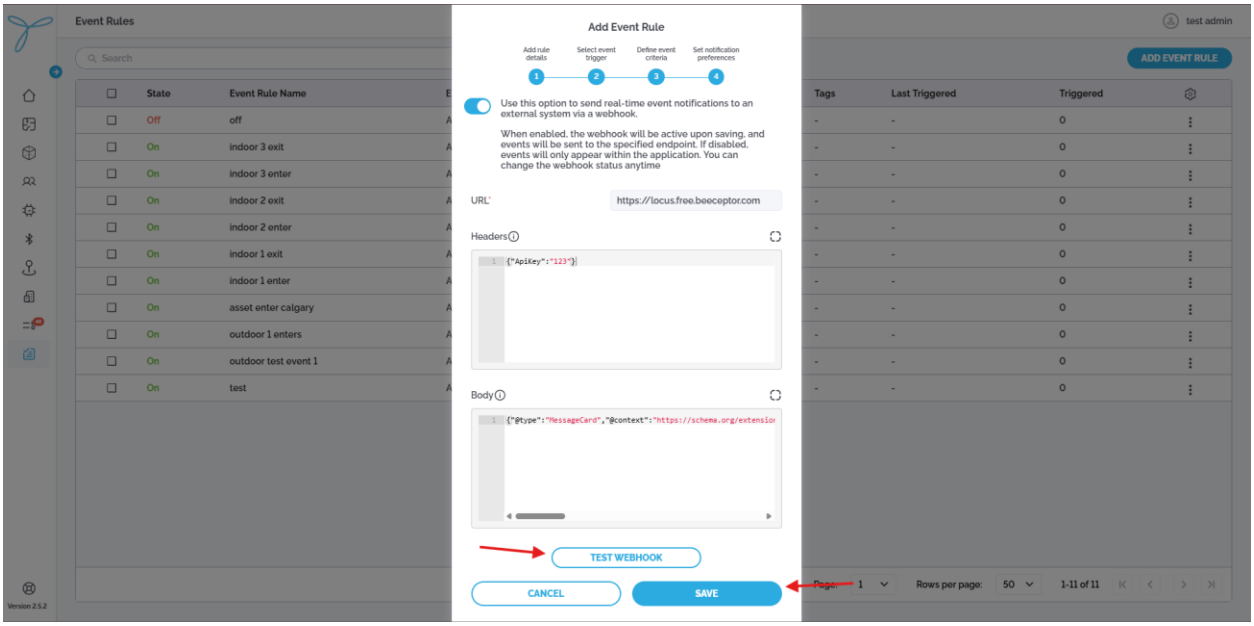
3. Select **Event trigger**. Click on "**Next**"



4. Select geofence to bound the event rule. Click on “Next”



5. Enter **URL**. Enter **Headers**. Enter **Body**. Click on “**Test webhook**” to validate integration. Click on “**Save**” button.



Example (in JavaScript):

URL : client`s HTTPS server.

Headers :

```
{
    "ApiKey": "123"
}
```

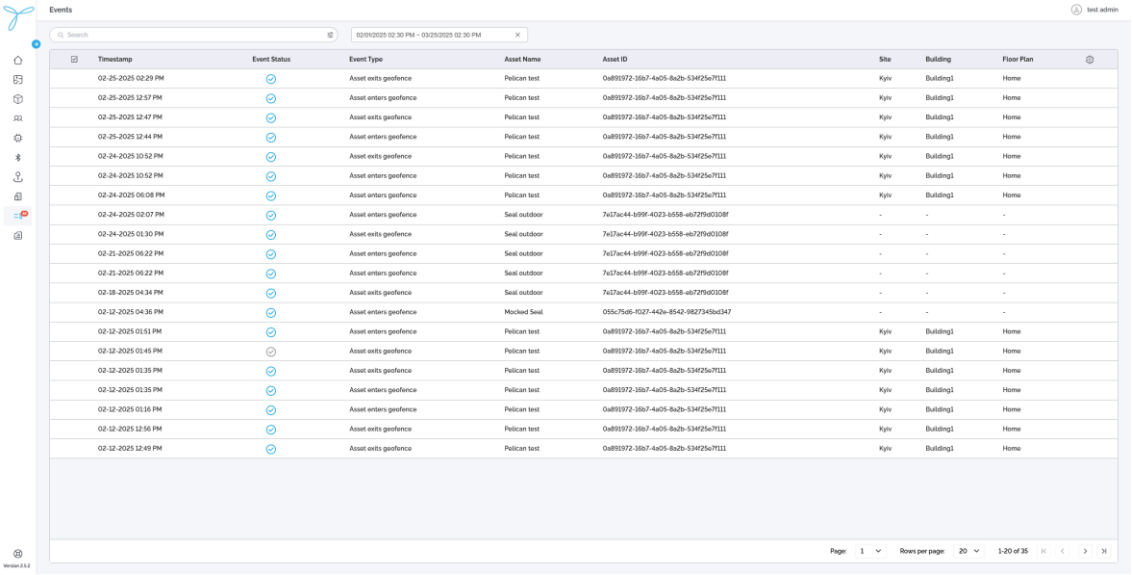
Body :

```
{
    "@type": "MessageCard",
    "@context": "https://schema.org/extensions",
    "summary": "{{eventRule.name}}",
    "themeColor": "0076D7",
    "title": "Device {{hit.last.device.eui}}",
    "text": "Event Type: {{eventType}}. Floor:
{{hit.last.indoorLocation.indoorLocation.floor.id}}. Site:
{{hit.last.indoorLocation.indoorLocation.site.id}}"
}
```

4.26 Events (Optional)

Overview

The Events page lets you monitor and analyze events related to assets, such as entering or exiting geofences, across sites, buildings, and floor plans.



5. Conclusion

Client need`s to physically place beacons accordingly to it`s placement on the Floor Plan for indoor tracking.
After than, we need to re-check workability of the complete solution. Position for indoor tracking will be recognized after 4 successfull BLE scan`s from the device, WITH valid existing beacon`s MAC addresses.