

Emerson™ Location Awareness with *WirelessHART®* Protocol



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WirelessHART®

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Emerson™ Location Awareness

Notice

Read this manual before working with the product. For personal and system safety and for optimal product performance, understand the contents completely before installing, using, or maintaining this product.

Emerson™ has two toll-free assistance numbers and one international number.

Customer Central

1 800 999 9307 (7:00 a.m. to 7:00 p.m. CST)

National Response Center (equipment service needs)

1 800 654 7768 (24 hours a day)

International

1 952 906 8888

Nuclear qualification

The products described in this document are NOT designed for nuclear-qualified applications. Using non-nuclear qualified products in applications that require nuclear-qualified hardware or products may cause inaccurate readings.

For information on Rosemount nuclear-qualified products, contact an Emerson Sales Representative.

Wireless Gateway

The Location Anchor and all other wireless devices should be installed only after the Wireless Gateway has been installed and is functioning properly. Wireless devices should also be powered up in order of proximity from the Wireless Gateway, beginning with the closest. This will result in a simpler and faster network configuration.

Use caution when making changes to the TCP/IP network settings. If they are lost or entered incorrectly, the Gateway will require a factory reset. Contact your network administrator for information on the proper TCP/IP network settings.

Hazardous substance

Individuals handling products exposed to hazardous substances can avoid injury if they are informed of and understand the hazard. If the returned product was exposed to a hazardous substance as defined by OSHA, a copy of the Material Safety Data Sheet (MSDS) for each hazardous substance identified must accompany the returned goods.

▲ WARNING

Failure to follow these installation guidelines could result in death or serious injury.

- Only qualified personnel should perform the installation. Explosions could result in death or serious injury.
- Verify the operating atmosphere of the transmitter Anchor & Tag is consistent with the appropriate hazardous location certifications.
- The Anchor enclosure has a high surface resistivity that may present a static hazard. Take care during transportation and installation.

Battery considerations

Battery hazards remain when cells are discharged. Batteries should be stored in a clean dry area. For maximum battery life, storage temperature should not exceed 30 °C (86 °F). The Location Anchor battery shall only be replaced in a non-hazardous area. The Personnel Tag battery is rechargeable and shall only be charged in a non-hazardous area.

Installation considerations

Only qualified personnel should perform the installation. Verify the operating atmosphere of the Anchor & Tag are consistent with applicable hazardous area certifications. Reference the Product Certifications section of this manual for information regarding hazardous certification.

The Anchor, Model GEO20, must be installed to ensure a minimum antenna separation distance of 20 cm (8 in.) from all persons. Only use certified Field Communicator for local Anchor configuration.

Location Awareness devices and services are meant to augment, not replace, safety and security measures within a plant and must not be used as the sole method of locating or tracking personnel within a customer's facility. Even when properly installed and maintained, and when working as intended, location position information will only be provided every 32 seconds or longer depending on system configuration. Location Awareness devices and services are designed to provide x and y location in a given level. In addition, structures within a plant, including moveable heavy equipment or other changes made after the initial installation, can prevent or delay detection. Location Awareness devices and services can also experience a loss or delay of signal as a result of software or hardware malfunction, or as a result of interruption or limitation of services by third party networks. Inform employees or contractors about the features and limitations of the Location Awareness System before allowing use.

Section 1: Introduction

1.1 Using This Manual

The sections in this manual provide information on installing, operating, and maintaining the Emerson™ Location Awareness solution. The sections are organized as follows:

[Section 2: Plantweb Insight Location application](#) provides overview on installation.

[Section 3: Location Anchor Safety Messages](#) contains safety information related to the Location Anchors.

[Section 4: Location Anchor Configuration](#) contains techniques for proper configuration.

[Section 5: Location Anchor Installation](#) contains techniques for properly installing and mounting.

[Section 6: Location Anchor Commissioning](#) contains techniques for proper commissioning.

[Section 7: Location Anchor Operation and Maintenance](#) contains operations and maintenance techniques.

[Section 8: Location Anchor Troubleshooting](#) provides troubleshooting techniques for the most common operating problems.

[Section 9: Personnel Tag Safety Messages](#) contains safety information related to the Personnel Tags.

[Section 10: Personnel Tag Commissioning and Configuration](#) contains techniques for proper configuration.

[Section 11: Personnel Tag Operation and Maintenance](#) contains operations and maintenance techniques.

[Section 12: Plantweb Insight Location Application Configuration](#) contains techniques for proper configuration.

[Section 13: Plantweb Insight Location Application Operation and Maintenance](#) contains operations and maintenance techniques.

[Appendix A: Specifications and Reference Data](#) supplies reference and specification data, as well as ordering information.

[Appendix B: Tools](#) contains readily available tools for reference.

[Appendix C: Recommended Practices](#) contains guidelines to achieve the best possible Location Network.

1.2 Product Recycling and Disposal

Recycling of equipment and packaging should be taken into consideration and disposed of in accordance with local and national legislation/regulations.

Section 2: Install Plantweb Insight and Plantweb Insight Location application

Follow instructions in the Plantweb Insight Quick Start Guide.

Section 3: Location Anchor Safety Messages

3.1 Safety Messages

Instructions and procedures in this section may require special precautions to ensure the safety of the personnel performing the operations, information that potentially raises safety issues is indicated by a warning symbol (⚠). Refer to the following safety messages before performing an operation preceded by this symbol.

⚠ CAUTION

Mount Anchors clear of walkways and doorways to reduce risk of someone contacting unit unexpectedly.

⚠ WARNING

If Anchor positions are physically changed/moved in the plant after initial commissioning, their positions need to be updated in the App in order for the App to report accurate Tag locations.

If an Anchor has to be removed for any reason (e.g. for service or battery replacement), make sure that the same Anchor is put back into the same location and orientation from which it was removed since the Plantweb Insight Location application has this location for calculation. If this is not done, the location system may interpret inaccurate locations.

If an Anchor has to be moved for any reason (e.g. for site redesign), make sure that the Anchor location is updated in Plantweb Insight Location application. If this is not done, the location system may interpret inaccurate locations.

Location Awareness Tags and Anchors use lithium batteries and are subject to local, state, national, and/or international requirements. Lithium batteries may ignite, explode or release toxic and harmful materials or chemicals if mishandled. Do not use a battery that is damaged. Do not incinerate batteries. Do not crush, disassemble, heat batteries above 100°C (212°F) or expose contents to water. Please check and comply with all applicable local, state, national, and international regulations before transporting, disposing or recycling lithium batteries. Do not recharge Anchor battery. Do not use Anchor battery that has been dropped. Use of damaged

equipment can be dangerous and could result in injury. Properly dispose of damaged Anchor batteries or Tags immediately.

The Emerson Location Anchor shall be used only with the battery (00G45-9000-0001) supplied by Rosemount. This battery has been officially tested with the Location Anchor as required by the I.S. standards during the assessment of the Emerson Location Anchor.

The battery is not replaceable in a hazardous location.

Dispose of battery in accordance with local and national requirements.

Do not place the Location Awareness Anchor, Anchor battery or the Location Awareness Tag device near fire or heat to reduce the risk of explosion and possible injury.

Notice

Shipping considerations

The Anchor unit was shipped with the battery installed. Each Location Anchor contains one “D” size primary lithium battery. Primary lithium batteries are regulated in transportation by the U. S. Department of Transportation and are also covered by the International Air Transport Association (IATA), International Civil Aviation Organization (CAO), and European Ground Transportation of Dangerous Goods (ARD). It is the shipper’s responsibility to ensure compliance with these or any other local requirements. Consult current regulations and requirements before shipping.

This Location Anchor complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: The Anchor may not cause harmful interference. The Anchor must accept any interference received, including interference that may cause undesired operation. The Anchor, Model GEO20, must be installed to ensure a minimum antenna separation distance of 20 cm (8 in.) from all persons.

Section 4: Location Anchor Configuration

4.1 Location Anchor Configuration

Remove the Location Anchor electronics cover and connect to the HART® Communication terminals for configuration.

The Emerson Location Anchor will receive HART Communication from any HART handheld Field Communicator or AMS™ Device Manager.

AMS Device Manager

AMS Device Manager can connect to devices directly, using a HART modem, or remotely using the Gateway. To configure the Emerson Location Anchor, double click (or right click and select Configure/Setup) on the device icon that will appear below either the HART modem or Gateway connection tree.

4.2 Device Network Configuration

To communicate with the Gateway (and ultimately the host system), the transmitter must be configured to communicate with the wireless network. Using a Field Communicator or AMS Device Manager, enter the network ID and join key so they match the network ID and join key of the Gateway and other devices in the network. If they do not match, the Location Anchor will not communicate with the network. The network ID and join key may be obtained from the Gateway on the *Systems Settings>Network>Network Settings* page on the web server, shown in [Figure 4-1](#).

Figure 4-1. Gateway Network Settings

4.2.1 AMS Device Manager

Right click on the Location Anchor and select **Configure**. When the menu opens, select **Join Device to Network** and follow the method to enter the network ID and join key. See table 3.1 for menu items.

4.2.2 Field Communicator

The network ID and join key may be changed in the wireless device by using the following the Menu Items. Set both network ID and join key. See table 3.1 for menu items.

Table 4.1. Device Configuration

Function	Menu Items
Join Device to Network	Network ID, Set Join Key
Device Information	Tag, Long Tag, Descriptor, Message, Date,
Guided Setup	Basic Setup, Join Device to Network, Configure Update Rates,
Manual Setup	Wireless, Location Network, HART, Security, Device Information, Power

Wireless	Network ID, Join Device to Network, Broadcast Information
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4.3 Power Down

After the Location Anchor has been configured, turn power off to the electronics by moving the power switch to off and reinstall the cover. Power should only be turned back on when the Anchor is ready for commissioning.

Section 5: Location Anchor Installation

5.1 Considerations

5.1.1 General

The Emerson™ Location Awareness solution is comprised of the Emerson Location Tag, Emerson Location Anchor, Emerson Gateways, and Plantweb Insight Location application. Emerson™ Location Awareness provides the user with safety-focused monitoring of their most valued resource - their people. Rechargeable, battery-operated Personnel Tags communicate with WirelessHART® Anchors, creating visibility in the most remote and hazardous areas of the facility for better personnel safety and security. The Plantweb™ Insight Location application provides a streamlined, user interface that manages geofencing, safety mustering, and user assisted safety alerts, helping the user digitally transform their facility's safety.

5.1.2 Wireless Considerations

Power-Up Sequence

The Wireless Gateway should be installed and functioning properly before any wireless devices are powered. Battery is already installed in the Location Anchor. Move power switch to "ON" position to power up. This results in a simpler and faster network configuration. Enabling Active Advertising on the Gateway ensures new devices are able to join the network faster. For more information, see the Smart Wireless Gateway [Reference Manual](#).

Antenna Position

The antenna is internal to the Location Anchor. To achieve optimal range and performance, position the Location Anchor with the stem in a horizontal position as shown in [Figure 5-1](#). Good connectivity can also be achieved in other orientations. The antenna should also be approximately 1 m (3 ft.) from any large structure, building, or conductive surface, and a minimum of 2 m (6 ft) and maximum of 4 m (13 ft) from the ground to allow for clear communication to other devices. Refer to best practices for additional information on optimal mounting locations of the Location Anchor.

Recommended Practices

When mounting the Location Anchor, recommended practices should be considered to achieve the best wireless performance. See [Appendix C: Recommended Practices](#) for more information on recommended practices.

5.1.3 Electrical Battery

The Emerson Location Anchor is self-powered. The battery is a single “D” size primary lithium/thionyl chloride battery. Each battery contains approximately 5.0 grams of lithium. Under normal conditions, the battery materials are self-contained and are not reactive as long as the battery is maintained. Care should be taken to prevent thermal, electrical, or mechanical damage. Contacts should be protected to prevent premature discharge. Battery cannot be changed in a hazardous location.

5.1.4 Installation Considerations

1. Inspect mounting bands periodically and re-tighten if necessary. Some loosening may occur after initial installation due to thermal expansion/contraction.
2. The stainless-steel mounting bands could be affected by stress corrosion and potentially fail when in the presence of chlorides.
3. The Location Anchor should be installed such that steam or other high temperature fluids do not directly impinge the housing of the Location Anchor.
4. Good connectivity can also be achieved in other orientations. The antenna should also be approximately 1 m (3 ft.) from any large structure, building, or conductive surface, and a minimum of 2m (6 ft) and a max of 4m (13 ft) from the ground to allow for clear communication to other devices.

5.2 Mounting

1. For optimal radio connectivity the Anchor needs to be installed with the on/off switch on the top, as shown in below image. The below mounting procedure will walk through how to properly install the Anchor without removing the electronics cover to check the switch orientation.



2. Locate mounting position on stanchion that is at least 2m above ground.
3. Install pipe mount, using pipe clamp, to stanchion with opening facing upward (as shown below). Install off the left side of the pipe (as you are facing it) for optimal radio performance, if possible.



4. Tighten clamp to 10.2 N-m (90 in-lb) using 5/16" (8mm) socket and torque wrench.
5. Slide Anchor universal connection into pipe mount from above. Anchor should sit in pipe mount with nut loose.



6. Tighten nut hand tight. Anchor should now look below image. Mount off the left side of the pipe with the cover facing you (as shown), if possible.



7. If commissioning the Location Anchor, refer to Location Awareness Quick Start Guide
8. Ensure the cover is fully tightened to prevent moisture ingress. The lip of the polymer electronics cover should be in contact with the surface of the polymer enclosure to ensure a proper seal. Do not overtighten

Section 6: Location Anchor Commissioning

6.1 Verify Operation

There are three methods available to verify operation:

- Field Communicator
- Gateway's integrated web interface
- AMS™ Suite Wireless Configurator or AMS Device Manager

If the Emerson Location Anchor was configured with the network ID and join key, and sufficient time has passed, the Anchor will be connected to the network. If network ID and join key were not configured, reference "[Troubleshooting](#)".

Note:

It may take several minutes for the Location Anchor to join the network.

6.1.1 Field Communicator

For *WirelessHART*® transmitter communication, an Emerson Location Anchor Device Driver (DD) is required. To obtain the latest DD, visit the Emerson™ Easy Upgrade site at: [Emerson.com/Rosemount/Device-Install-Kits](https://emerson.com/Rosemount/Device-Install-Kits).

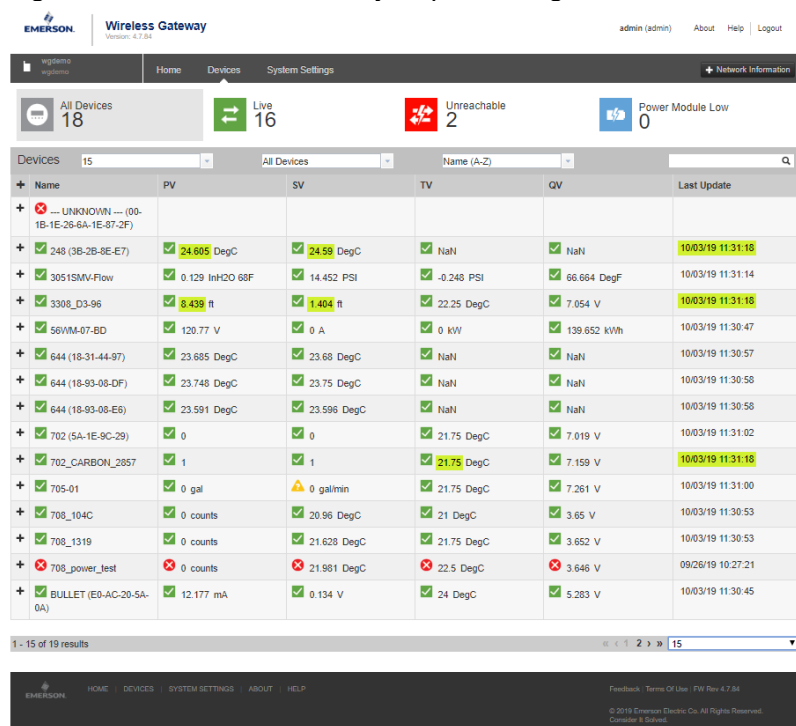
The communication status may be verified in the wireless device using the following the menu items.

Function	Menu Items
Communications	Join Status, Wireless Mode, Join Mode, Number of Available Neighbors, Number of Advertisements Heard, Number of Join Attempts

6.1.2 Wireless Gateway

Using the Gateway's web interface, navigate to the Devices page as shown in [Figure 6-1](#). Locate the device in question and verify all status indicators are good (green).

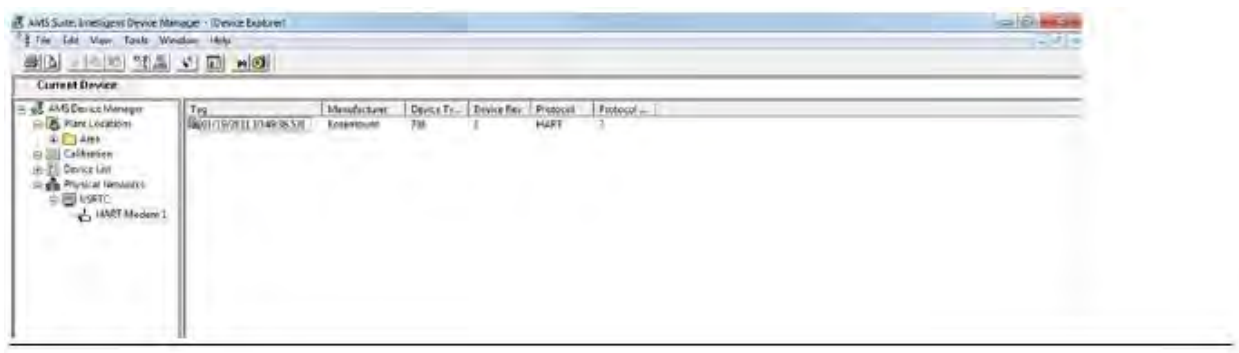
Figure 6-1. Wireless Gateway Explorer Page



AMS Device Manager

When the Location Anchor has joined the network, it will appear in the AMS Device Manager as illustrated in [Figure 6-2](#). For *WirelessHART* transmitter communication, a Location Anchor DD is required. To obtain the latest DD, visit the Emerson Easy Upgrade site at: Emerson.com/Rosemount/Device-Install-Kits.

Figure 6-2. AMS Device Manager



Note:

Plantweb Insight™ Location application is provided for viewing Location Anchor status.

Troubleshooting:

If the device is not joined to the network after power up, verify the correct configuration of the network ID and join key, and that Active Advertising has been enabled on the Gateway. The network ID and join key in the device must match the network ID and join key of the Gateway. The network ID and join key may be obtained from the Gateway on the *System Settings>Network>Network Settings* page of the web server (see [Figure 6-3](#)). The network ID and join key may be changed in the wireless device by following the Menu Items sequence shown below.

Function	Menu Items
Join Device to Network	Network ID, Set Join Key

Figure 6-3. Wireless Gateway Network Settings

The screenshot displays the 'Network Settings' page of an Emerson Wireless Gateway. The left sidebar contains a navigation menu with 'Gateway', 'Network', 'Protocols', and 'Users'. The 'Network' section is expanded, showing 'Channels', 'Network Settings', 'Access Control List', and 'Network Statistics'. The main content area is titled 'Network Settings' and includes the following fields and options:

- Network name:** myNet
- Network ID:** 10725
- Join Key:** Four input fields containing 44555354, 4e455457, 4f524b53, and 524f434b. A checkbox for 'Show join key' is checked.
- Rotate network key?:** Radio buttons for 'Yes' and 'No' (selected).
- Change network key now?:** Radio buttons for 'Yes' and 'No' (selected).
- Security mode:** Radio buttons for 'Common join key' (selected) and 'Access control list'.
- Active Advertising:** Radio buttons for 'Yes' (selected and highlighted with a yellow box) and 'No'.
- Stale Data Detection:** Two input fields for 'Missed updates' (8) and 'Minimum timeout' (90).

At the bottom of the form are 'Save Changes' and 'Cancel' buttons. The footer of the page includes the Emerson logo, navigation links (HOME, DEVICES, SYSTEM SETTINGS, ABOUT, HELP), and copyright information: 'Copyright © 2019 Emerson Electric Co. All Rights Reserved. Emerson H. Salsed'.

6.1.3 Field Communicator

Note:
In order to establish communication with a Field Communicator, power the Location Anchor by switching the power switch to the “ON” position.

Function	Menu Items
Guided Setup	Basic Setup, Join Device to Network, Configure Update Rates,
Wireless	Network ID, Join Device to Network, Broadcast Information

Section 7: Location Anchor Operation and Maintenance

This section contains information on commissioning and operating Location Anchors. Field Communicator and AMS™ Device Manager instructions are provided for convenience.

7.2 Battery Replacement

The Emerson Location Anchor shall be used only with the battery (00G45-9000-0001) supplied by Rosemount. The battery is not replaceable in a hazardous location.

Procedure to replace the battery:

1. Remove devices from hazardous area.
2. Remove enclosure cover.
3. Switch the Location Anchor "OFF".
4. Loosen the screw holding the electronics assembly to the enclosure.
5. Release battery connection from electronics board.
6. Loosen the two screws on the battery holder and slide the battery holder to the left.

Note

The screws holding down the electronics board do not need to be removed, just loosened.

Take care not to let the battery fall out of the enclosure.

7. Remove battery from enclosure.
8. Installation of new battery is the reverse of the removal.

7.3 Local Location Anchor Status and Notifications

The flashing LED indicated Location Anchor status using the colors described in table 6.2. To see the LED, remove the enclosure cover.

Table 7.2. Anchor LED Status Descriptions

LED Color	Device Status
 Green	Functioning properly
 Amber	Battery is low, battery replacement recommended
 Red	Battery replacement required OR Device is Malfunctioning
 No Color	No power, verify ON/OFF switch is in "ON" position

Section 8: Location Anchor Troubleshooting

8.1 Service Support

To expedite the return process outside of the United States, contact the nearest Emerson™ representative.

Within the United States, call the Emerson Instrument and Valve

Response Center using the 1-800-654-RSMT (7768) toll-free number. This center, available 24 hours a day, will assist with any needed information or materials.

The center will ask for product model and serial numbers and will provide a Return Material Authorization (RMA) number. The center will also ask for the process material to which the product was last exposed.

For inquiries outside of the United States, contact the nearest Emerson representative for RMA instructions.

Emerson representatives will explain the additional information and procedures necessary to return goods exposed to hazardous substances.

8.2 Local Troubleshooting

Table 8-1. Interpreting Local Notifications

LED Color	Device Status	Recommended Action(s)
Green 	Functioning properly	No action required.
Amber 	Battery is low	Battery replacement recommended.
Red 	Battery replacement required OR Device is malfunctioning	Investigate active notification via a HART Communicator. Replace battery if device is determined to be functioning properly and notifications have been verified.
Black, no color  = 	No power	Verify ON/OFF switch is in "ON" position

8.3 Remote Troubleshooting

Table 8-2. Interpreting Device Status

Status	Notification	Description	Recommended Action(s)
Good	None	Functioning Properly	No action required
Advisory	Database Storage Error	The device has failed to write to the database memory at some point in the past. Any data written during this time may have been lost.	1. Perform a Device Reset. 2. If logging dynamic data is not needed, this advisory alert can be safely ignored. 3. If the condition persists, replace the device.
	Simulate Active	The device is in simulation mode and may not be reporting actual information.	1. Verify that simulation is no longer required. 2. Disable simulation mode. 3. Reset the device.
	Anchor/Device Overload	The device is not able to receive information from all the Location Tags in the area	1. May need to deploy more Anchors/device to cover the load
	Non-Critical User Data	A user written parameter does not match its expected value.	1. Restart the device. 2. Reconfirm all configuration items in the device. 3. Restore the default settings and reconfigure device.

			4. If the condition persists, replace the device.
	Muster mode activated	The device is placed into a mode where it is not forwarding information to calculate full position	1. Verify that muster mode is needed 2. Disable muster mode 3. Reset the device
Status	Notification	Description	Recommended Action(s)
Maintenance	Voltage Conditions Out of Range	The supply voltage is low and may soon affect device operation.	1. Replace the battery.
	Environmental Conditions Out of Range	The device is outside its normal environmental operating conditions which may affect accuracy and/or proper operation.	1. Verify process and ambient temperature is within the device's operating range. 2. Remote mount the device away from process and environmental conditions. 3. Reset the device. 4. If the condition persists, replace the device.
	Capacity Denied	The device has failed to acquire the wireless communication bandwidth necessary to support the configured update rates.	1. Obtaining the bandwidth may take some time depending on the configured update rates and other devices in the network. Wait several minutes to see if the error resolves itself. 2. There may be too many devices attached to the <i>WirelessHART</i> network, or the update rates may be too fast. Try using a different network, or slowing down the update rate on one or more devices.
Status	Notification	Description	Recommended Action(s)
Failure	Configuration Alert	The device has detected a configuration error.	1. Click on details for more information. 2. Correct the parameter that has a configuration error. 3. Reset the device. 4. If the condition persists, replace the device.
	Critical Power Failure	The supply voltage is too low for the device to broadcast updates.	1. Replace the battery.
	Electronics Failure	An electronics error that could impact the device measurement reading has occurred.	1. Restore device to default settings. 2. Perform a Device Reset. 3. If the condition persists, replace the device.

Section 9: Personnel Tag Safety Messages

9.1 Safety Messages

Instructions and procedures in this section may require special precautions to ensure the safety of the personnel performing the operations, information that potentially raises safety issues is

indicated by a warning symbol (⚠). Refer to the following safety messages before performing an operation preceded by this symbol.

▲ WARNING

Location Awareness Tags and Anchors use lithium batteries and are subject to local, state, national, and/or international requirements. Lithium batteries may ignite, explode or release toxic and harmful materials or chemicals if mishandled. Do not use a battery that is damaged. Do not incinerate batteries. Do not crush, disassemble, heat batteries above 100°C (212°F) or expose contents to water. Please check and comply with all applicable local, state, national, and international regulations before transporting, disposing or recycling lithium batteries. Do not recharge Anchor battery. Do not use Anchor battery that has been dropped. Use of damaged equipment can be dangerous and could result in injury. Properly dispose of damaged Anchor batteries or Tags immediately.

The Location Awareness Personnel Tag is equipped with a permanently installed, lithium-ion rechargeable battery. Do not disassemble Personnel Tag or attempt to replace the battery. Do not store Personnel Tag in areas where there is excessive heat or cold (e.g. inside vehicles). Recharge Location Awareness Personnel Tag only with Qi certified wireless chargers in a non-hazardous area. Charger must be approved as SELV or Class 2 equipment against CSA/UL 60950, CSA/UL 61010-1 or equivalent ordinary location standard. The maximum voltage from the charger must not exceed 30 VDC. Adhere to all Qi charger manufacturer guidelines and recommendations.

Do not charge the Personnel Tag in a damp or wet location to reduce the risk of electric shock. The Personnel Tag should only be charged when the Tag is at room temperature. If the Personnel Tag has been in a cold environment, make sure to allow it to warm to room temperature before charging.

Do not place the Location Awareness Anchor, Anchor battery or the Location Awareness Tag device near fire or heat to reduce the risk of explosion and possible injury.

If wearing the Tag with a lanyard, it must be a breakaway lanyard worn properly.

Section 10: Personnel Tag Commissioning and Configuration

Power Up Sequence

1. Charge Personnel Tag for approximately three hours using a certified Qi Charger.
2. To remove Personnel Tag from shipping mode, press and hold safety button until LED is solid green. This should take approximately three seconds.
3. Once you release the safety button, the Personnel Tag LED will follow the status shown in Table 12.1.

Commissioning and Configuration

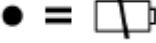
Follow steps outlined in Section 13 for Personnel Tag commissioning and configuration.

Section 11: Personnel Tag Operation and Maintenance

11.1 Personnel Tag Status and Notifications

The flashing LED Location Tag status using the colors described in table 12.1.
To see the LED, remove the enclosure cover.

Table 11.1. Personnel Tag LED Status Descriptions

LED Color	Blink rate	Device status
 Green	1 blink per second	Normal operation
 Green/Red	Toggle blink	User assistance button has been activated
 Amber	1 blink per 0.5 seconds	Aggressive network search
 Amber	1 blink per second	Moderate network search
 Amber	1 blink per 2.5 seconds	Slow network search, conserving power
 Red	1 blink per second	Critical low battery AND Battery charge required
 No Color	N/A	No power OR Shipping mode

11.2 Personnel Tag User Assistance

The Personnel Tag has a user assistance button that can be exposed by sliding the grey cover. This button, once pressed, sends an alert to the Plantweb Insight Location application to inform that the personnel may need help.



11.3 Personnel Tag Charging

The Personnel Tag has a rechargeable battery and is charged using a certified Qi charger. Emerson has spare parts available for a single charging pad.



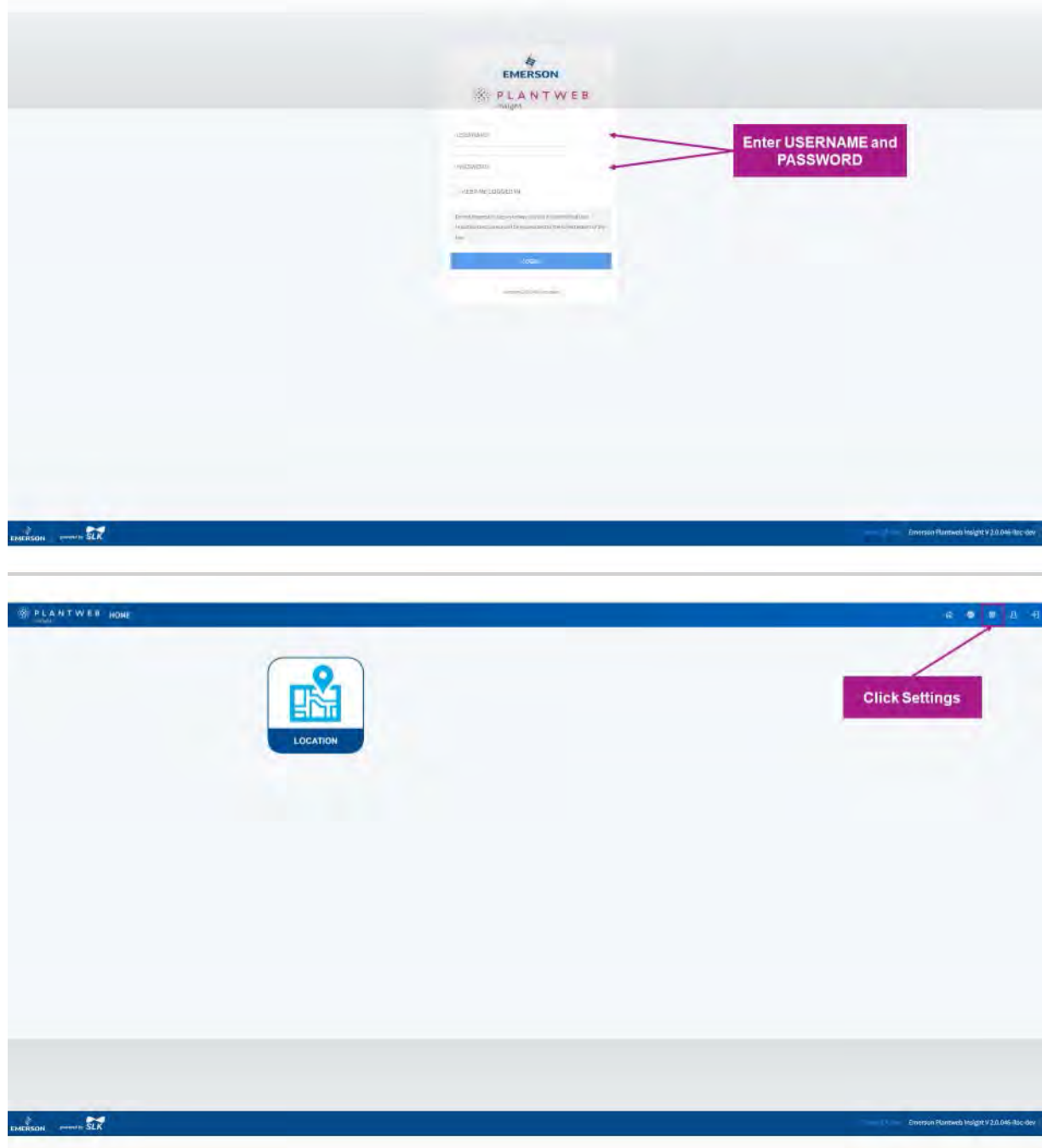
11.4 Personnel Tag Mounting Considerations

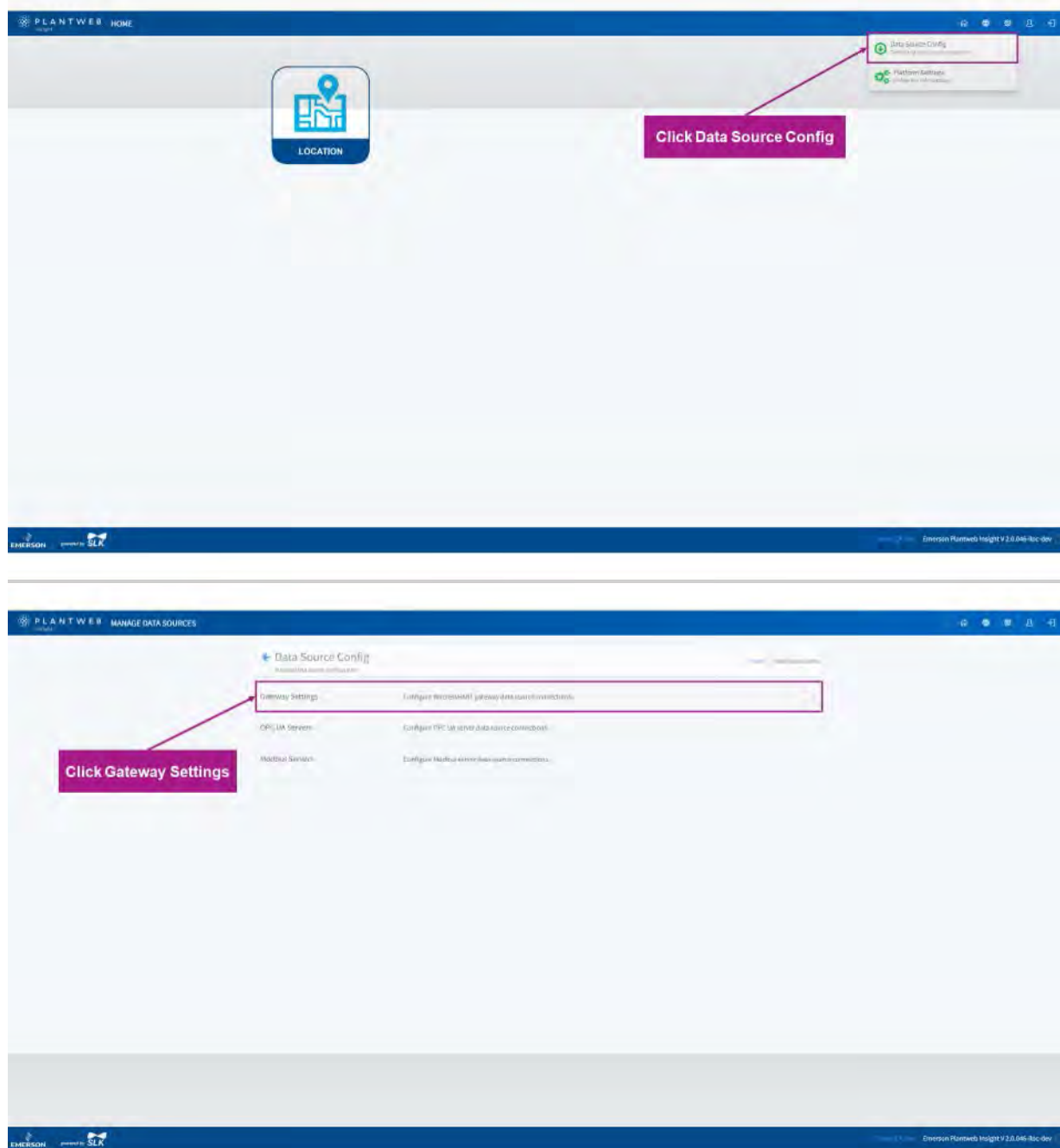
The Personnel Tag has flexible wearing options to accommodate a variety of PPE. It can be worn with a lanyard or belt clip. Lanyards are shipped with the Personnel Tags. Belt clips can be ordered separately.

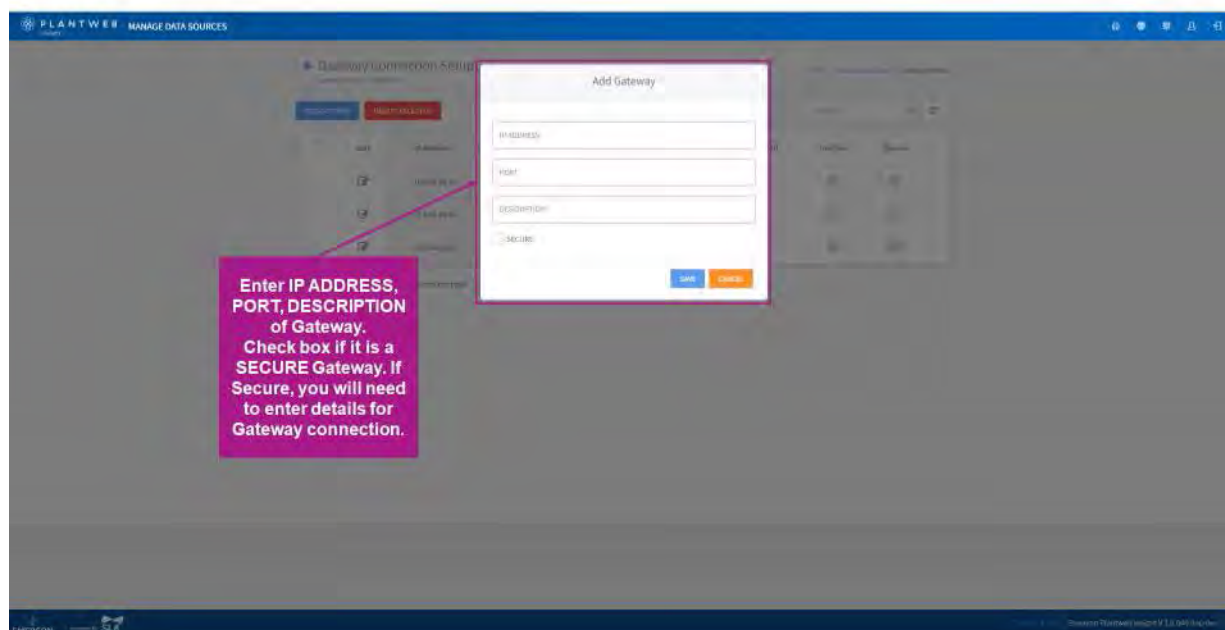
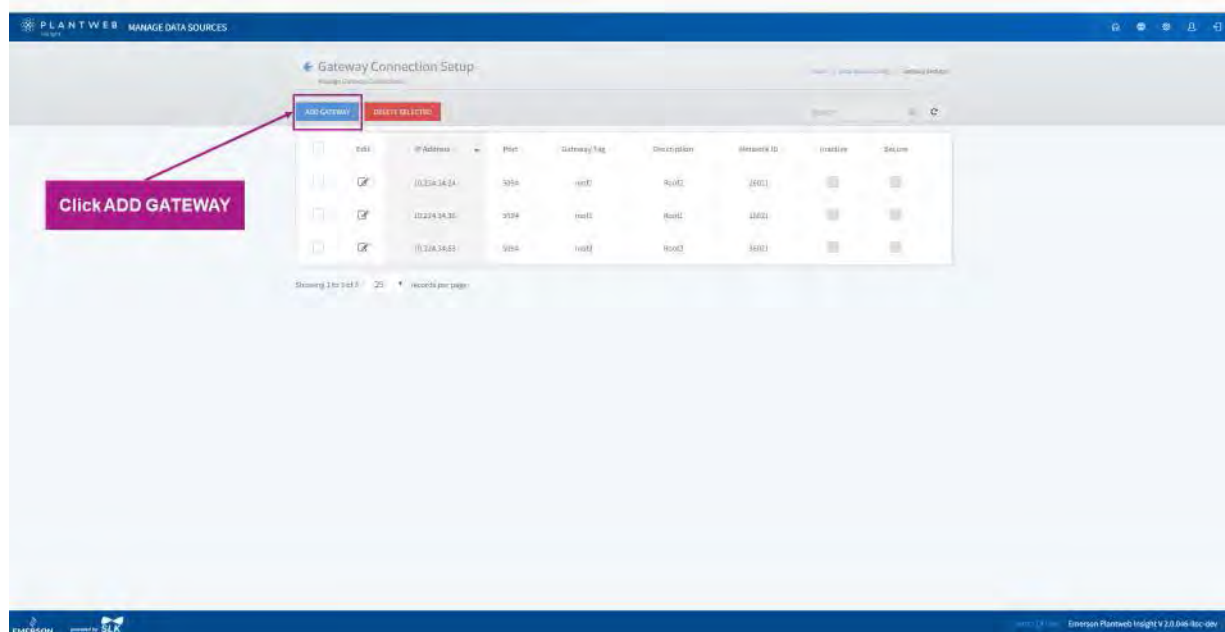


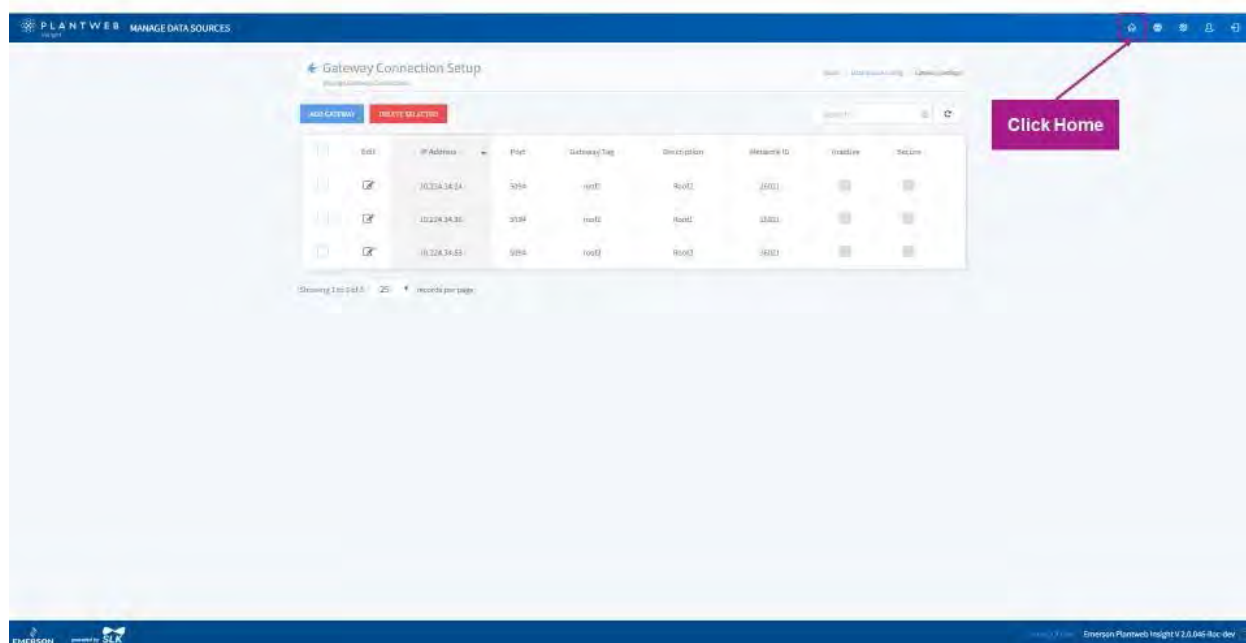
Section 12: Plantweb Insight Location Application Configuration

12.1 Gateway Configuration

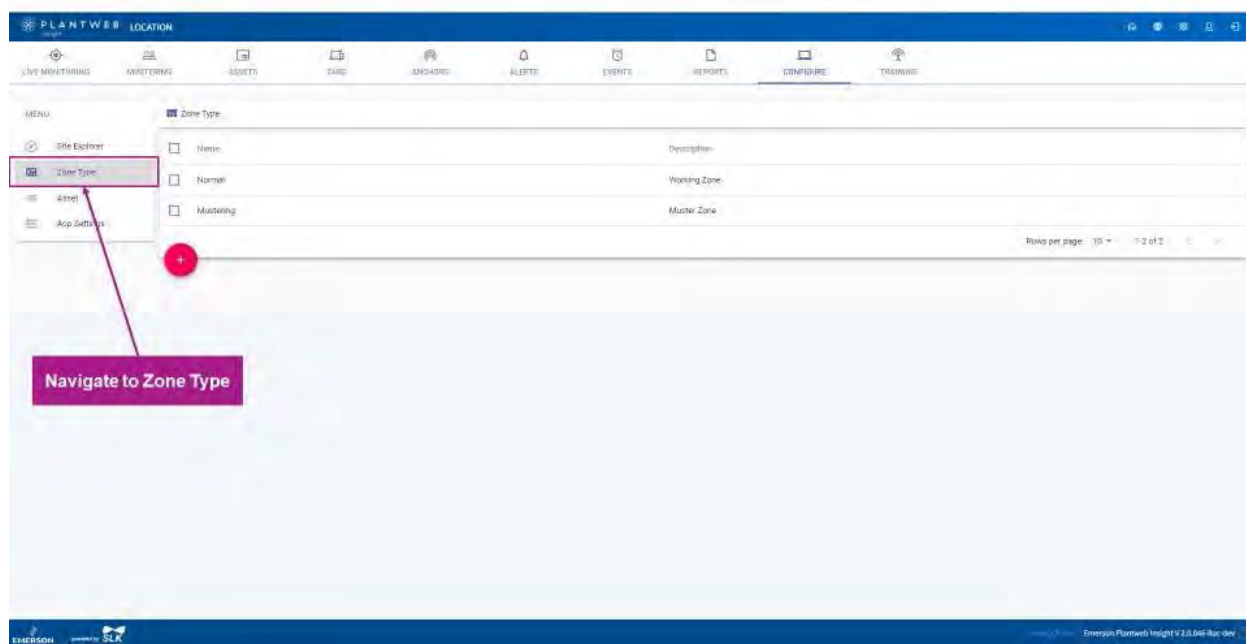


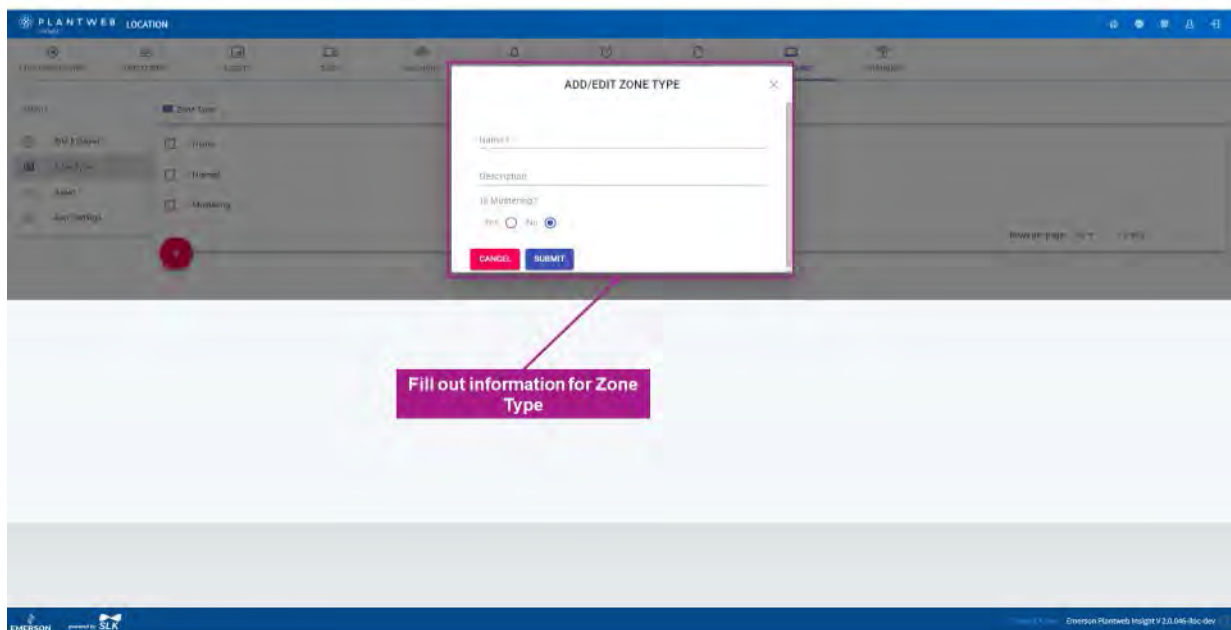
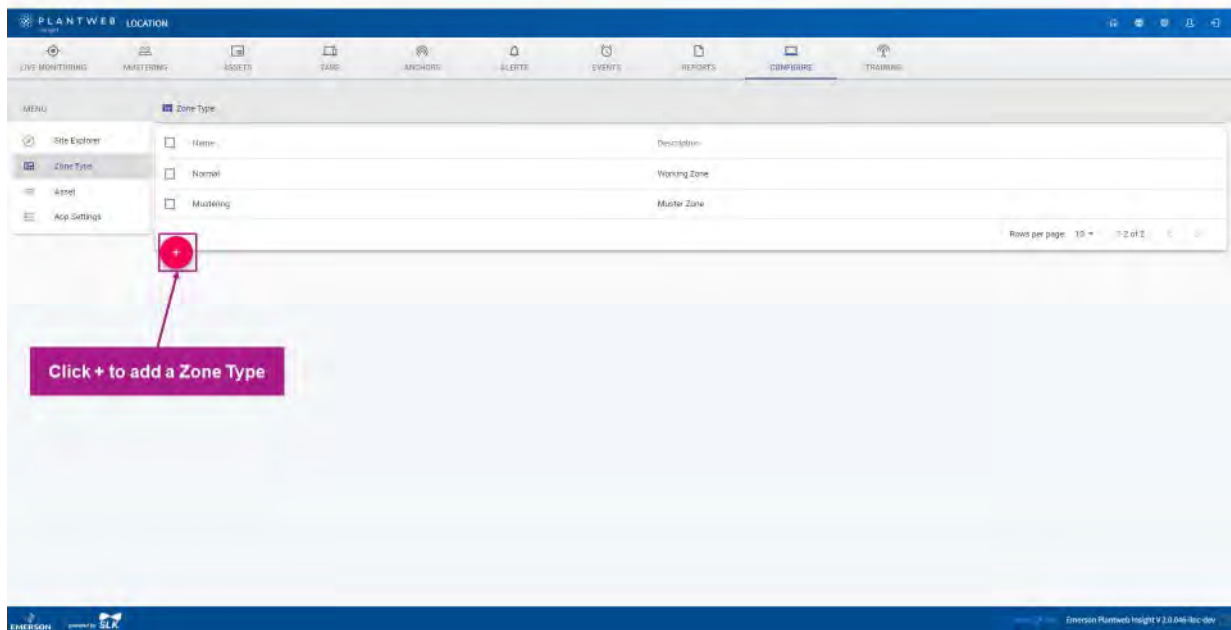


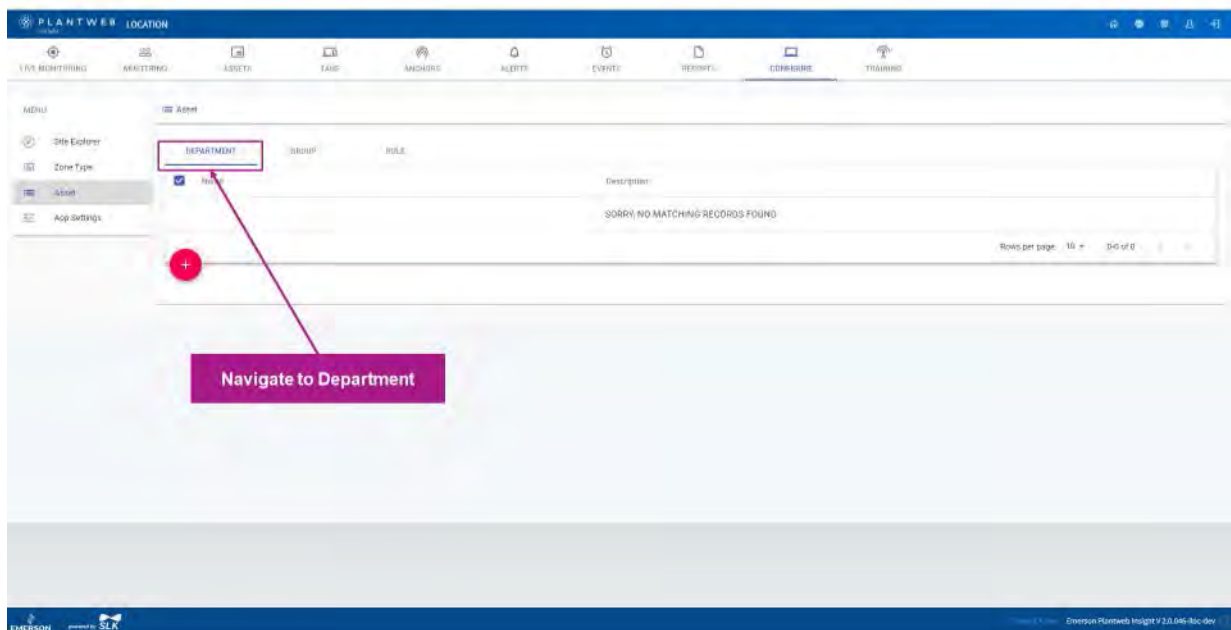
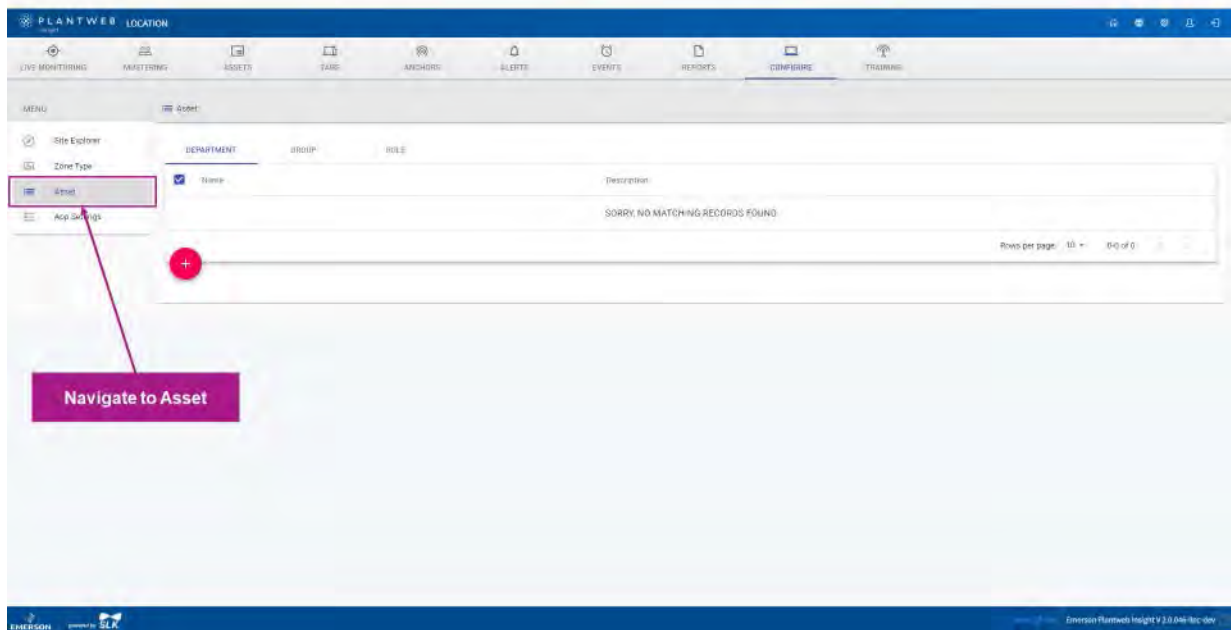


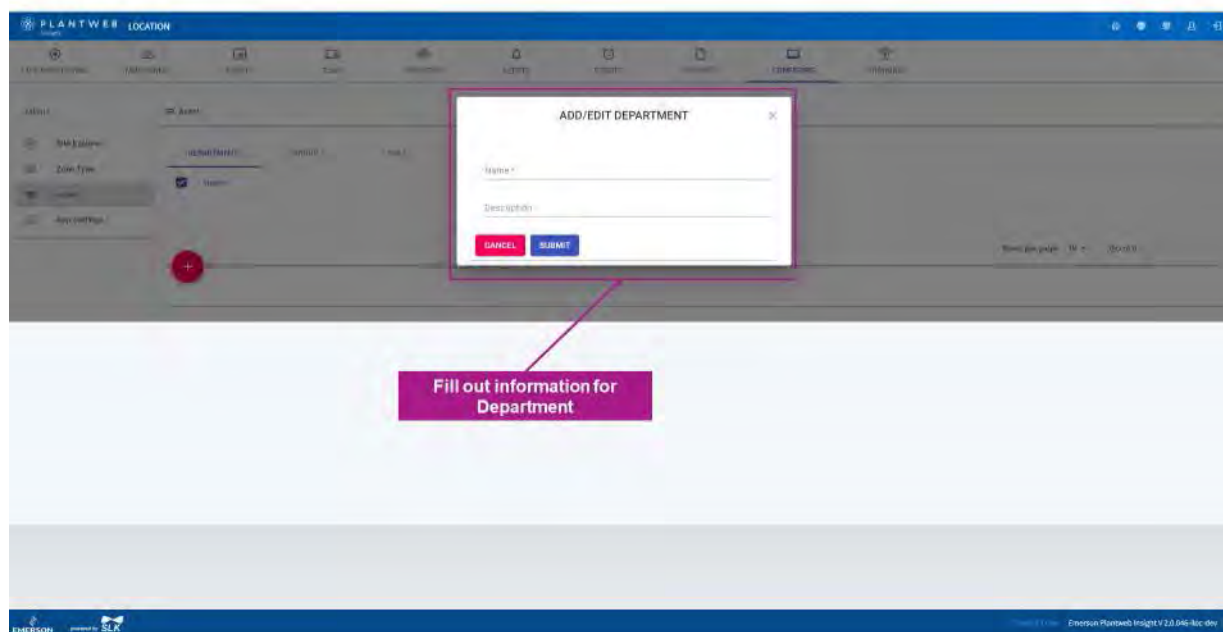
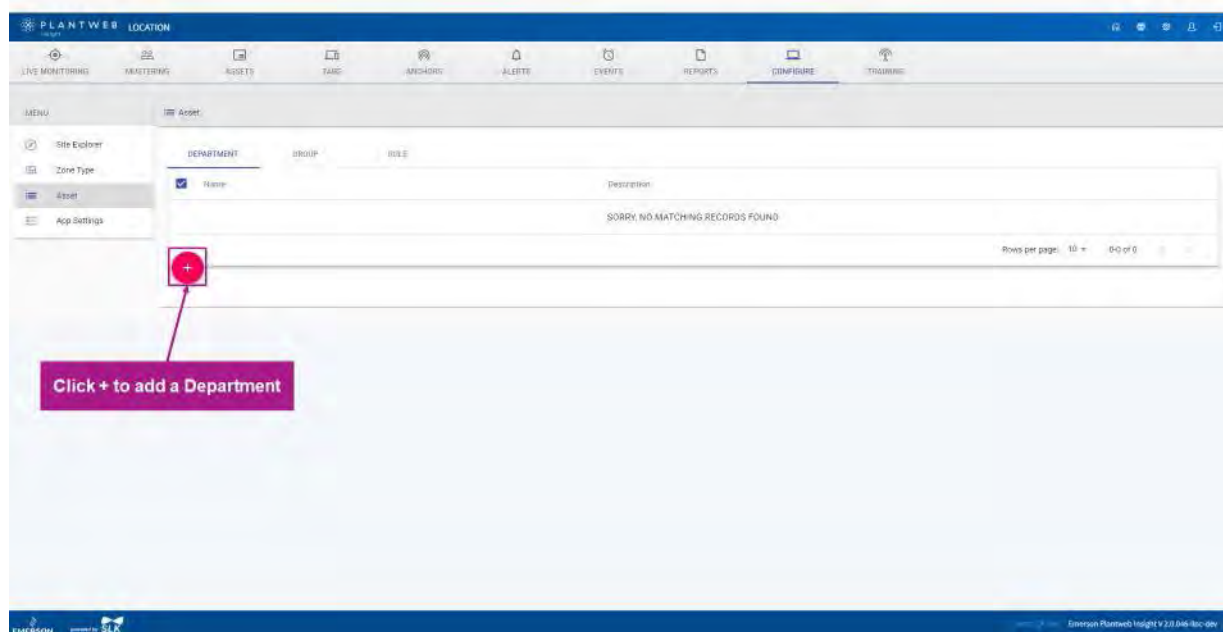


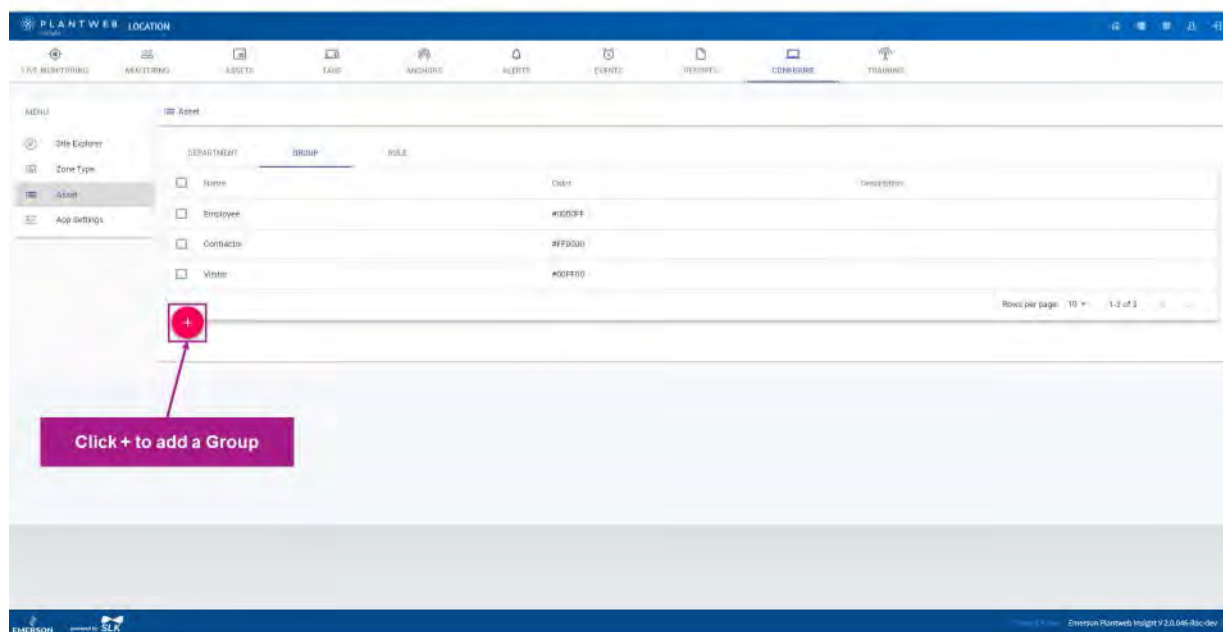
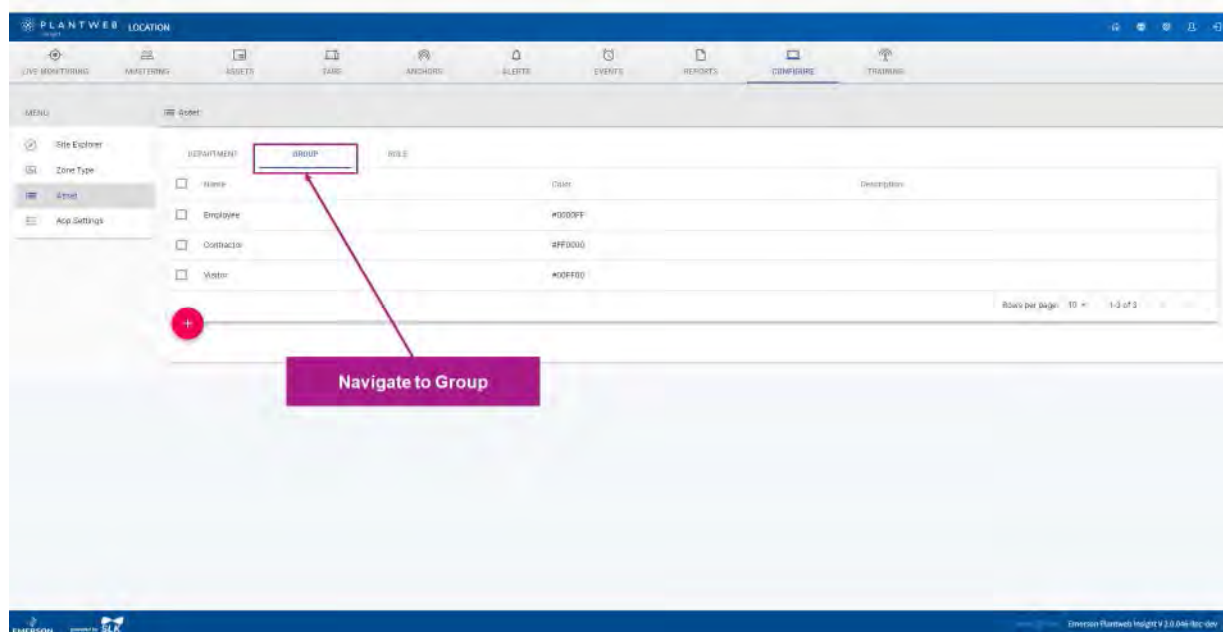
12.2 General Configuration

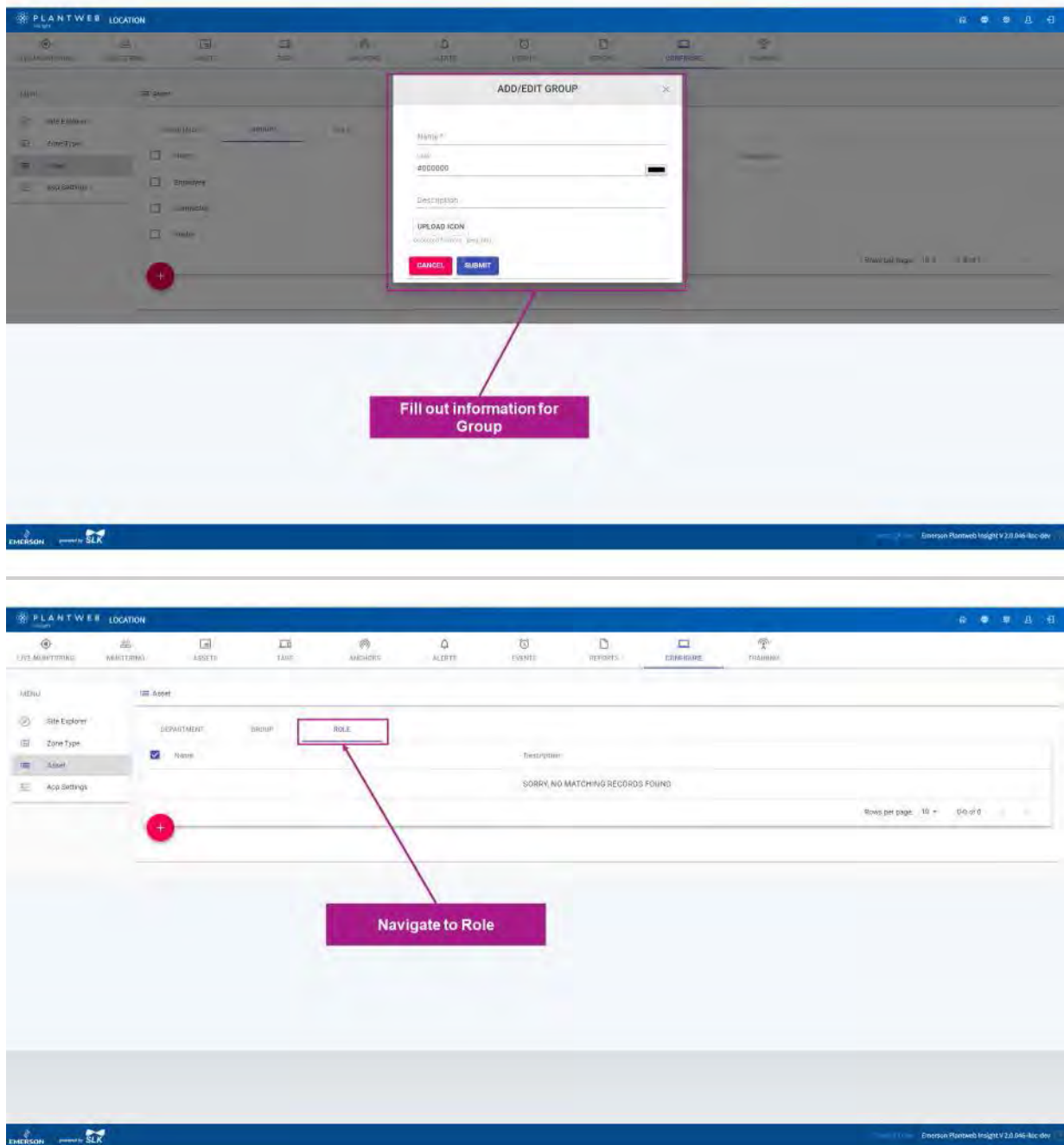


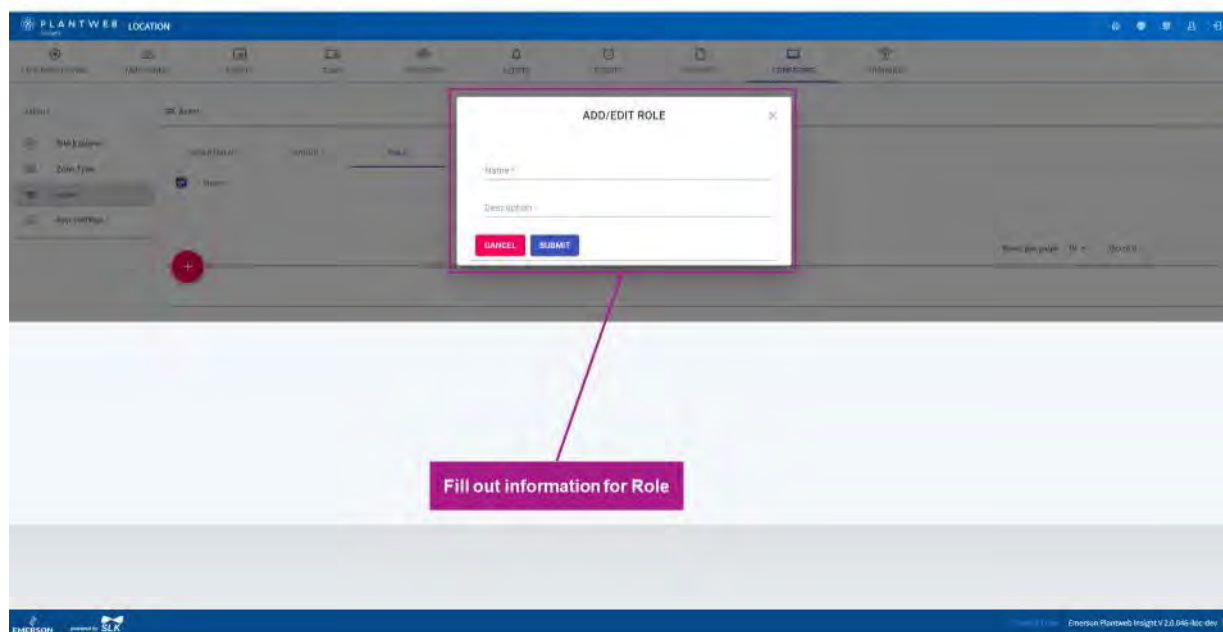
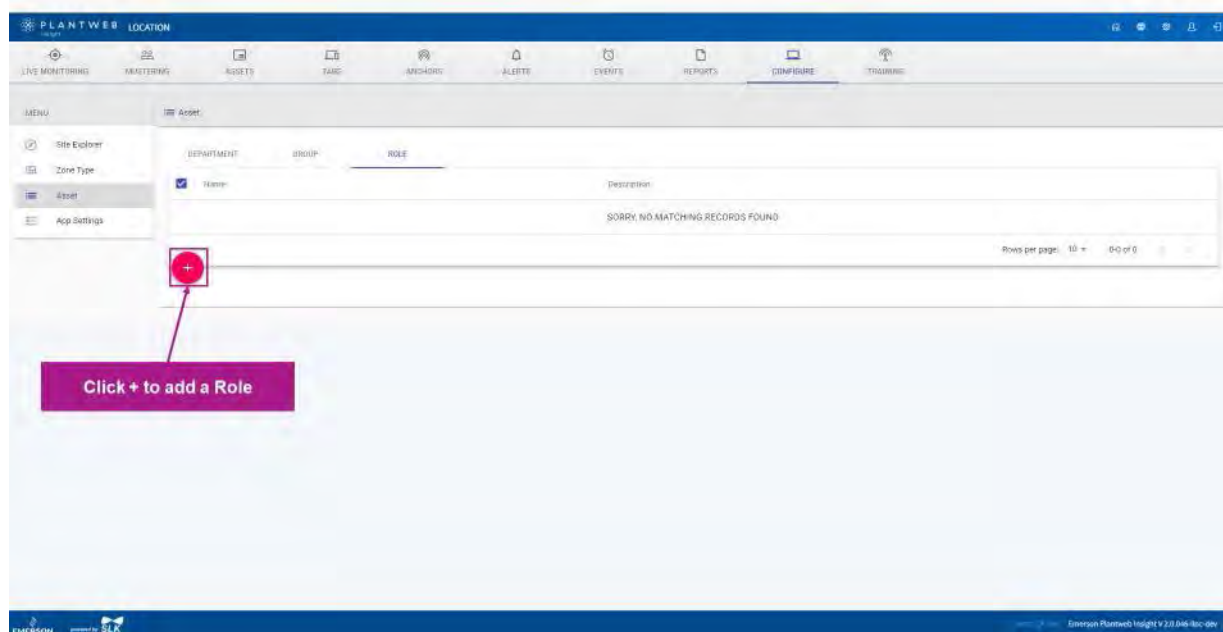


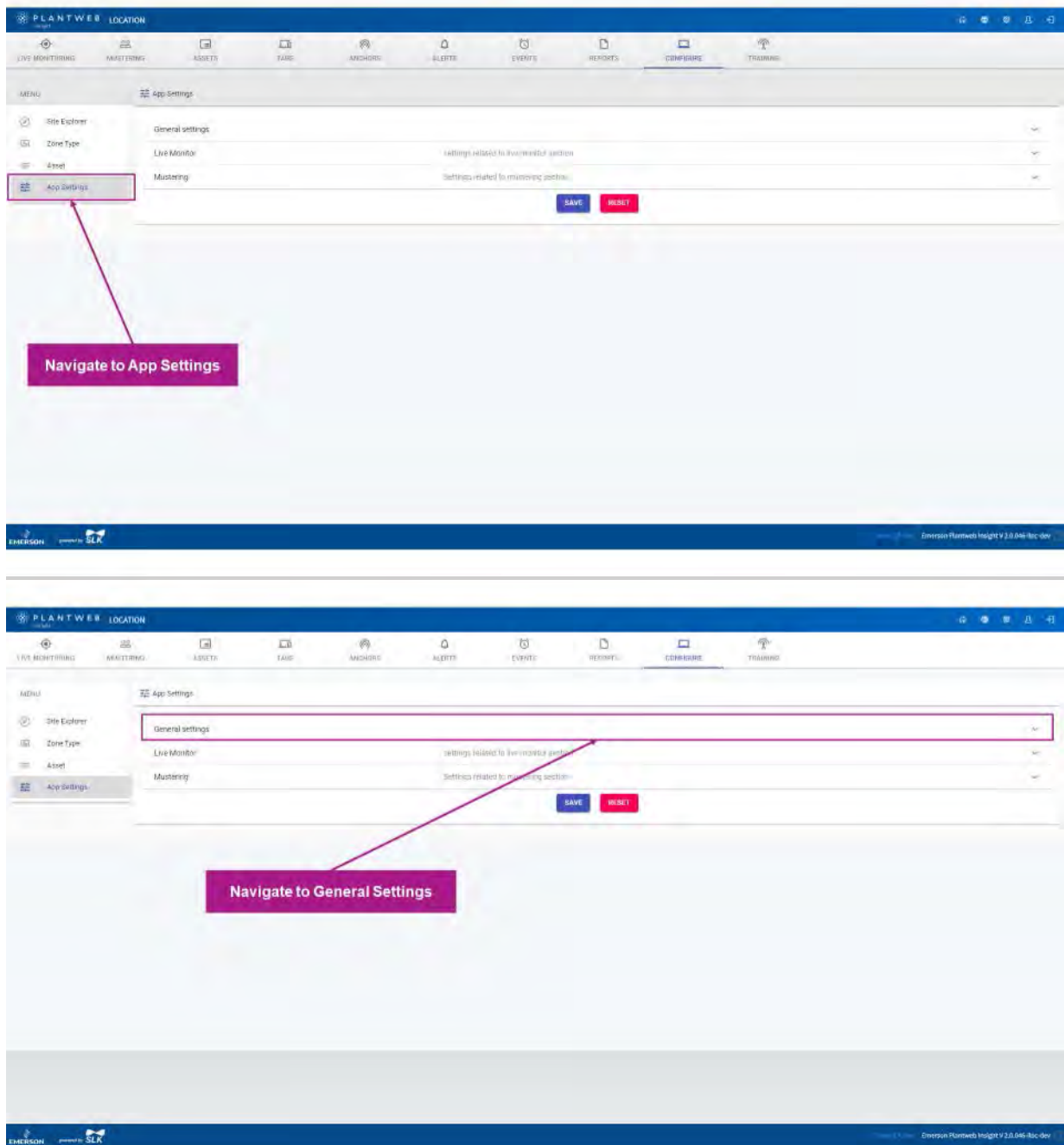


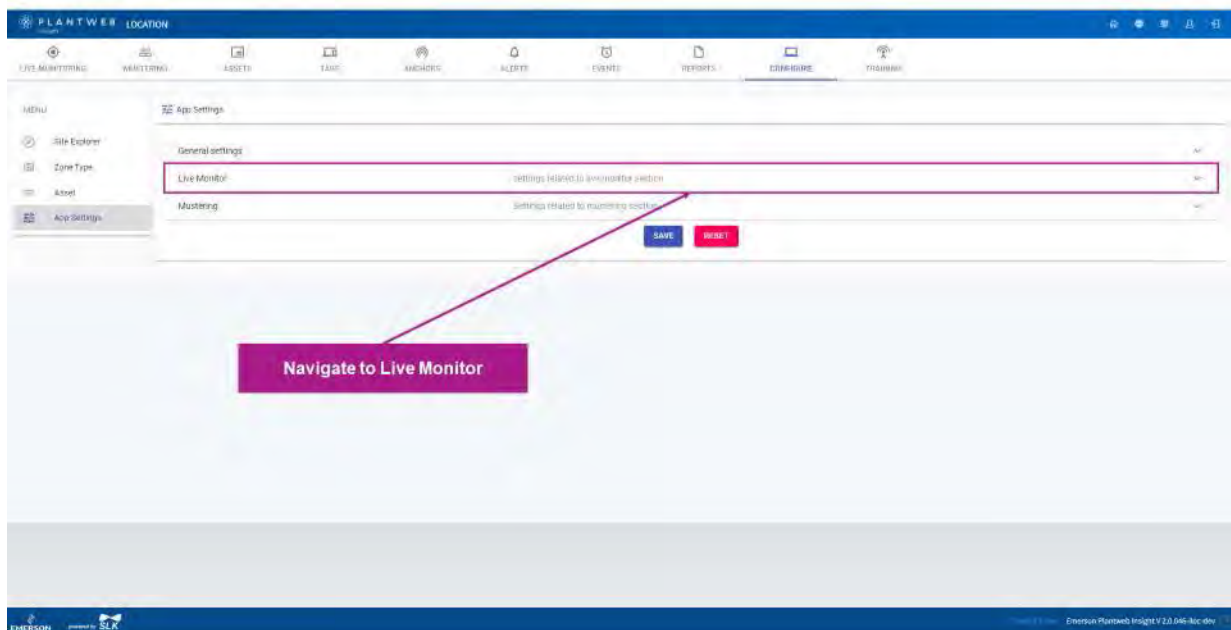
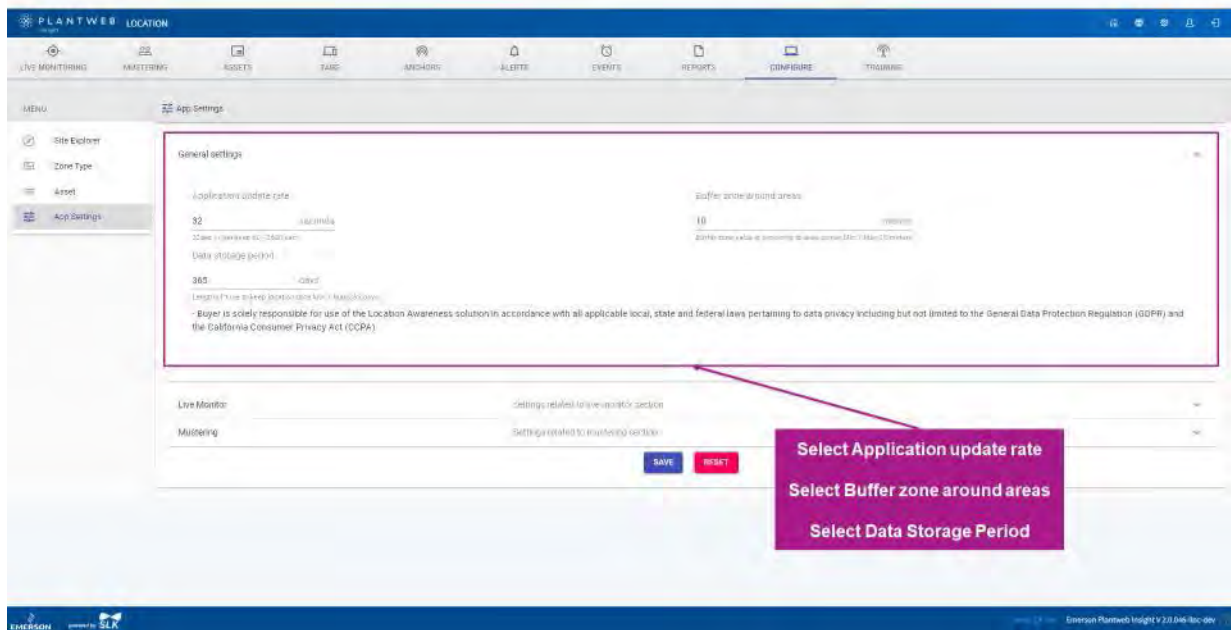


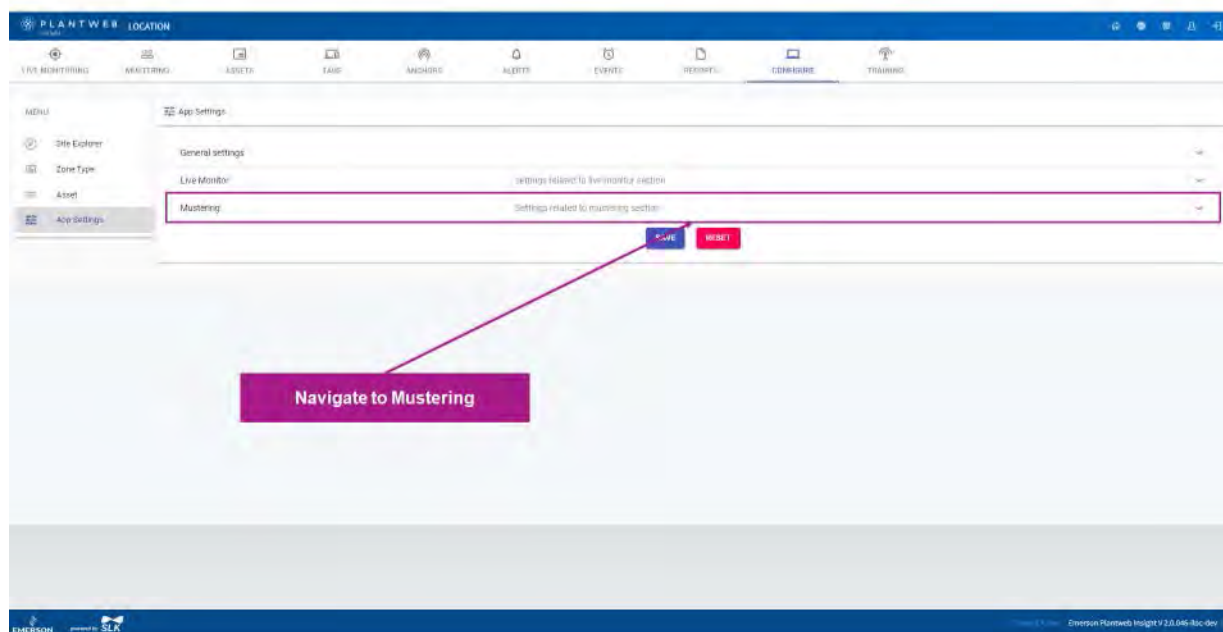
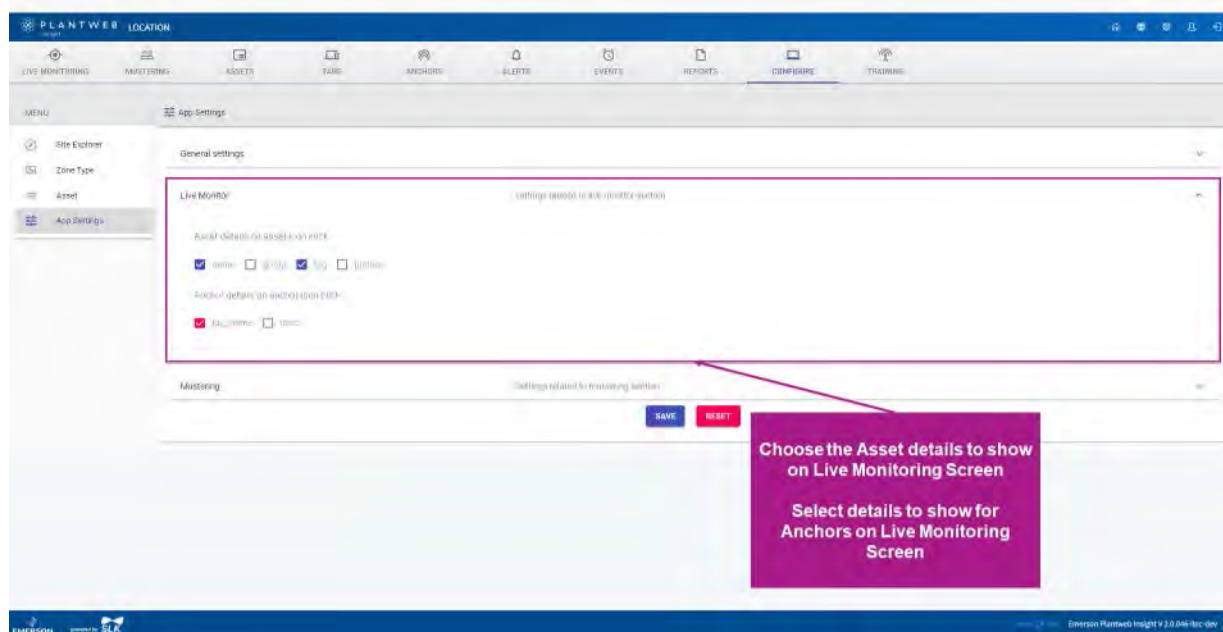


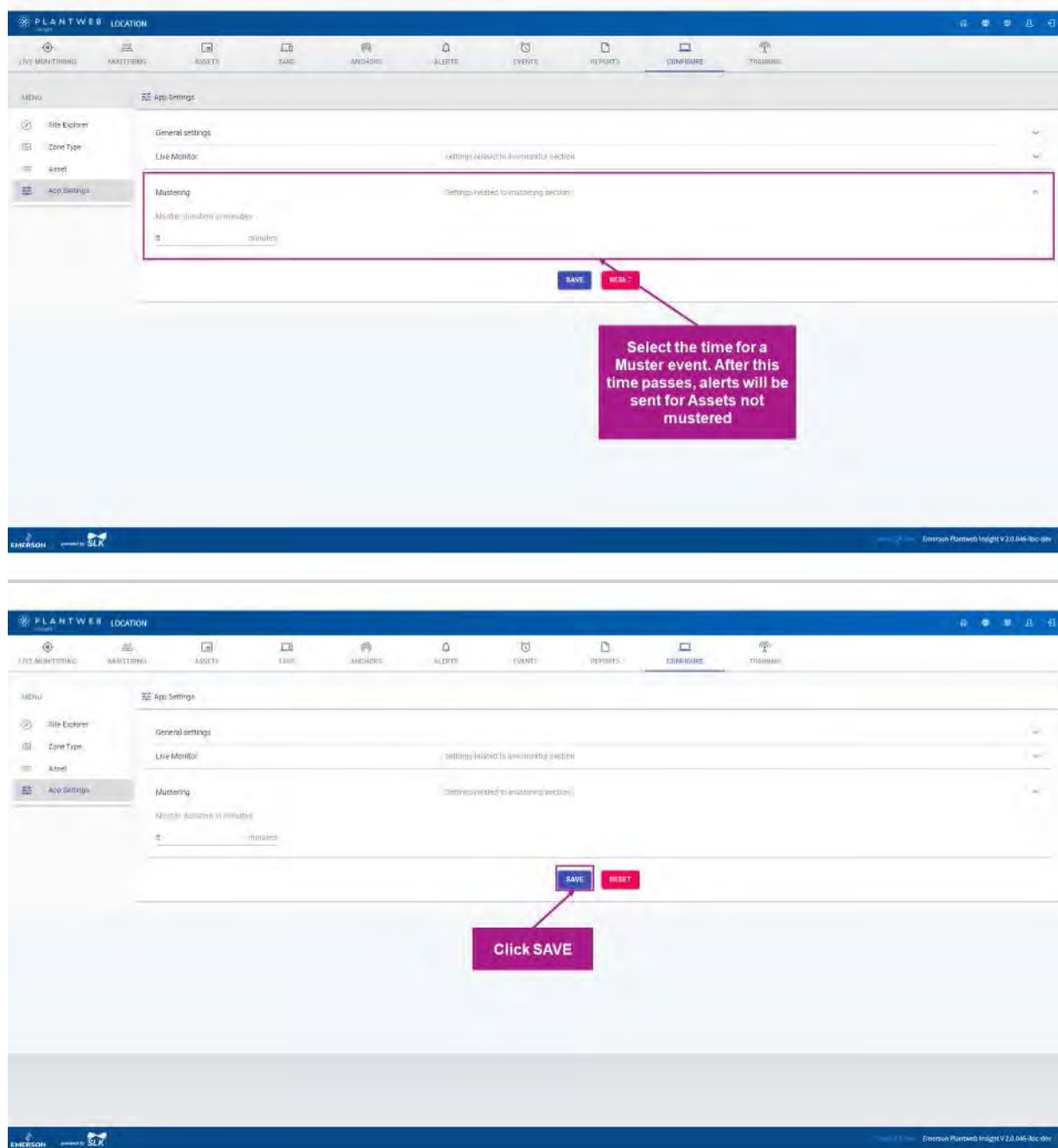




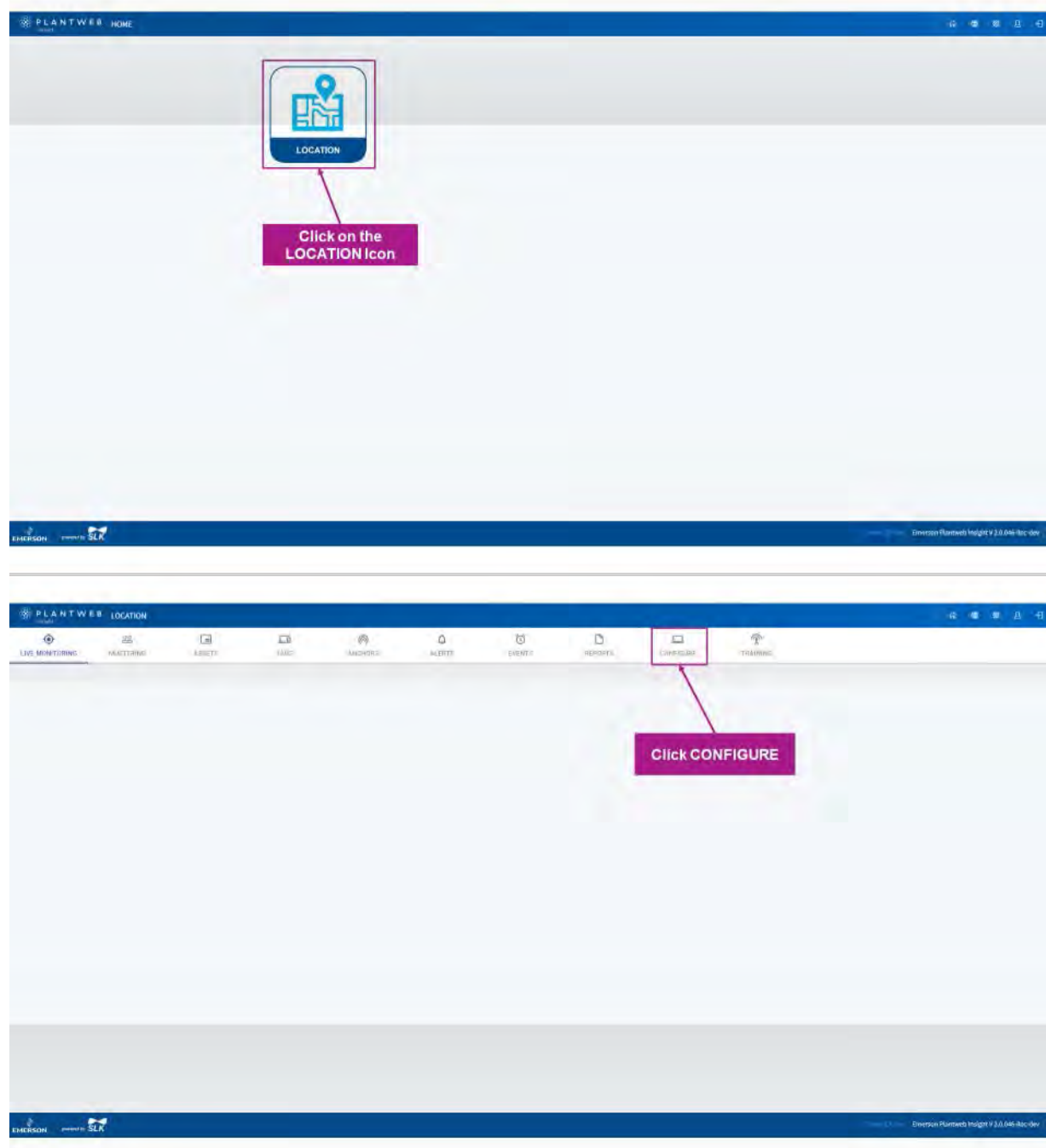


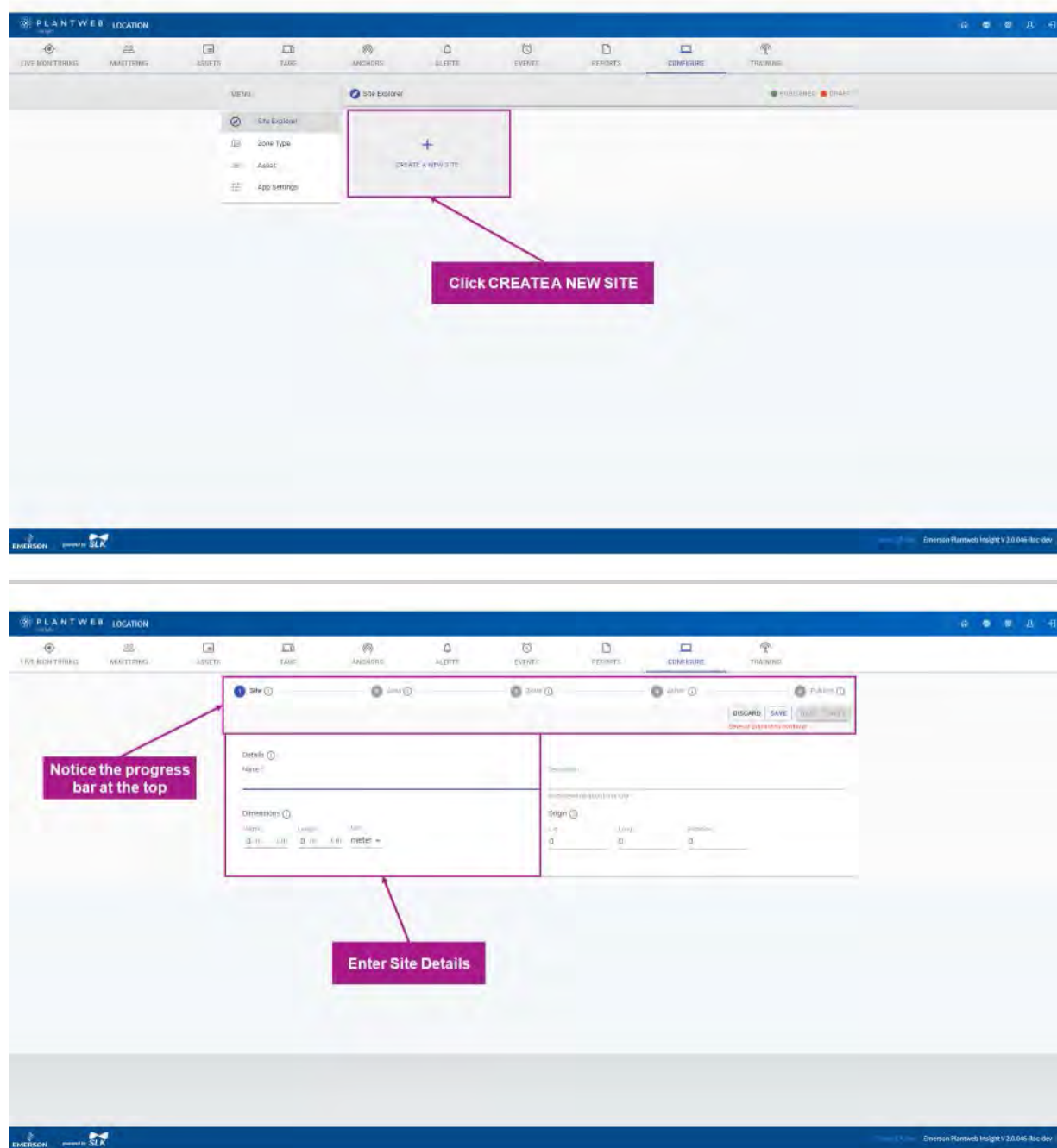


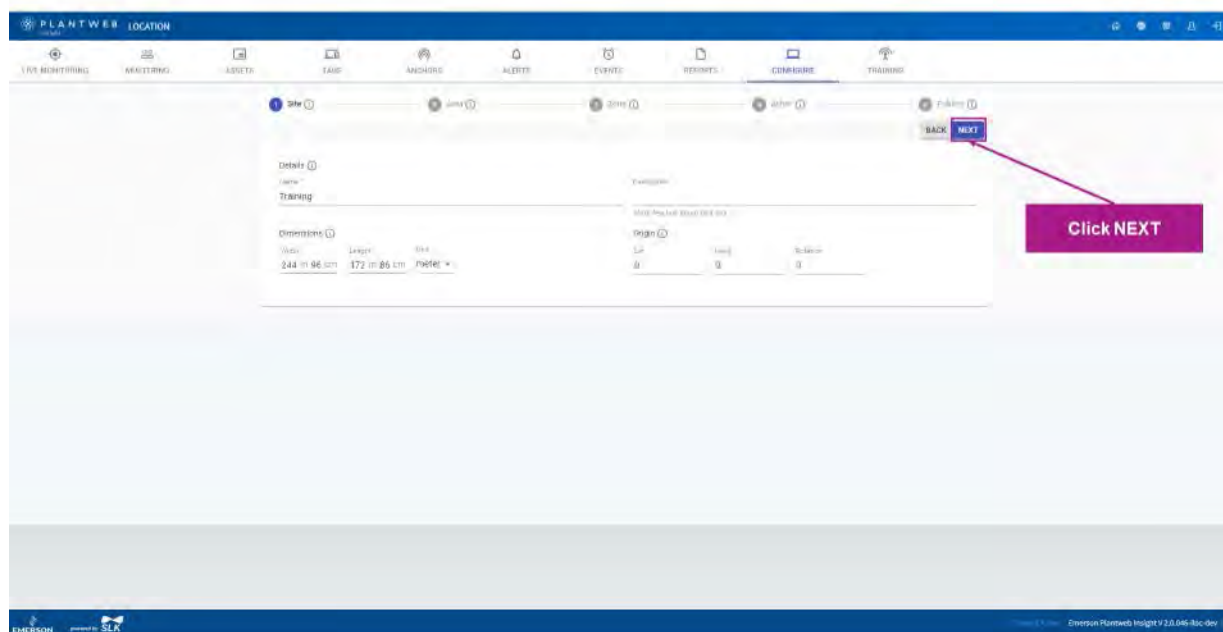
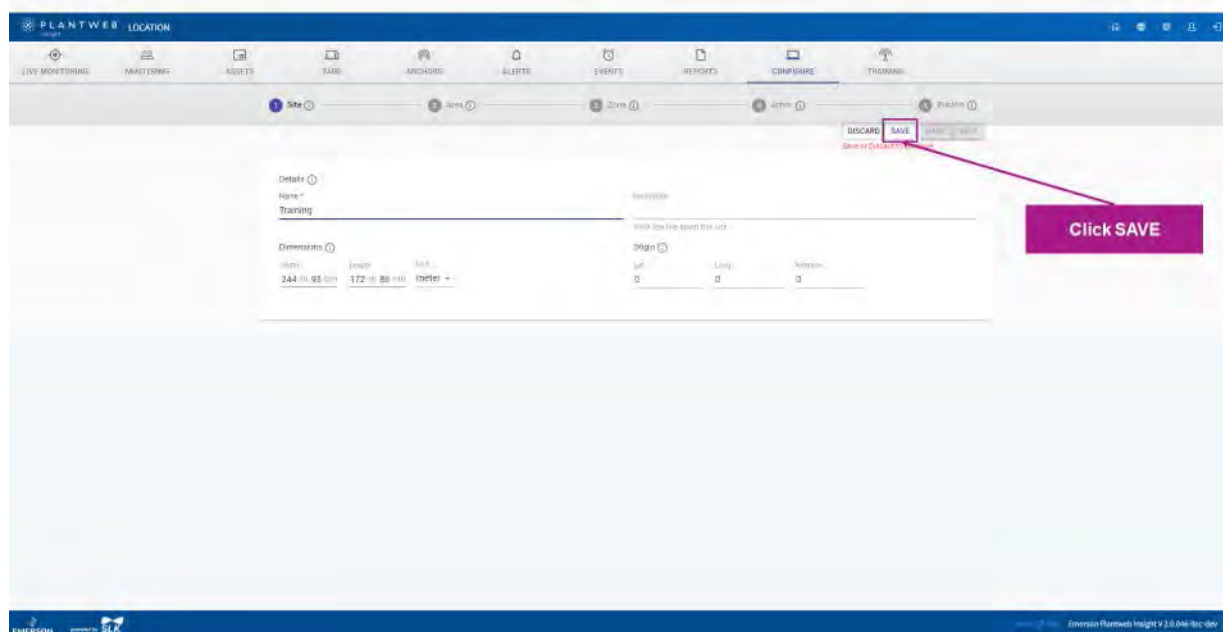


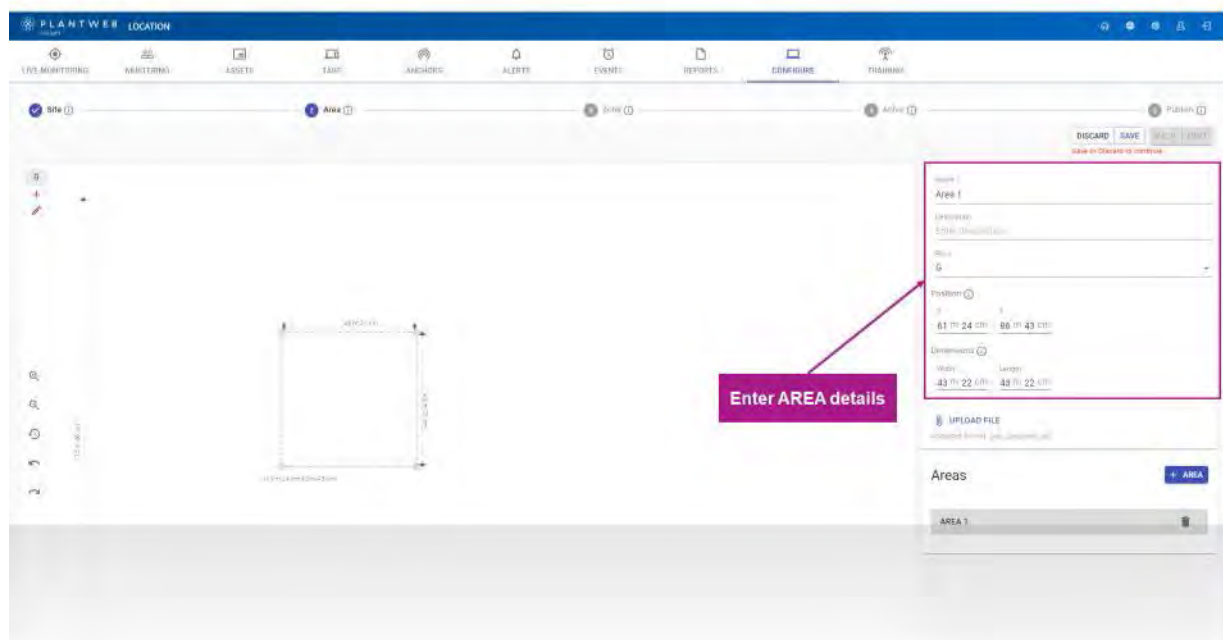
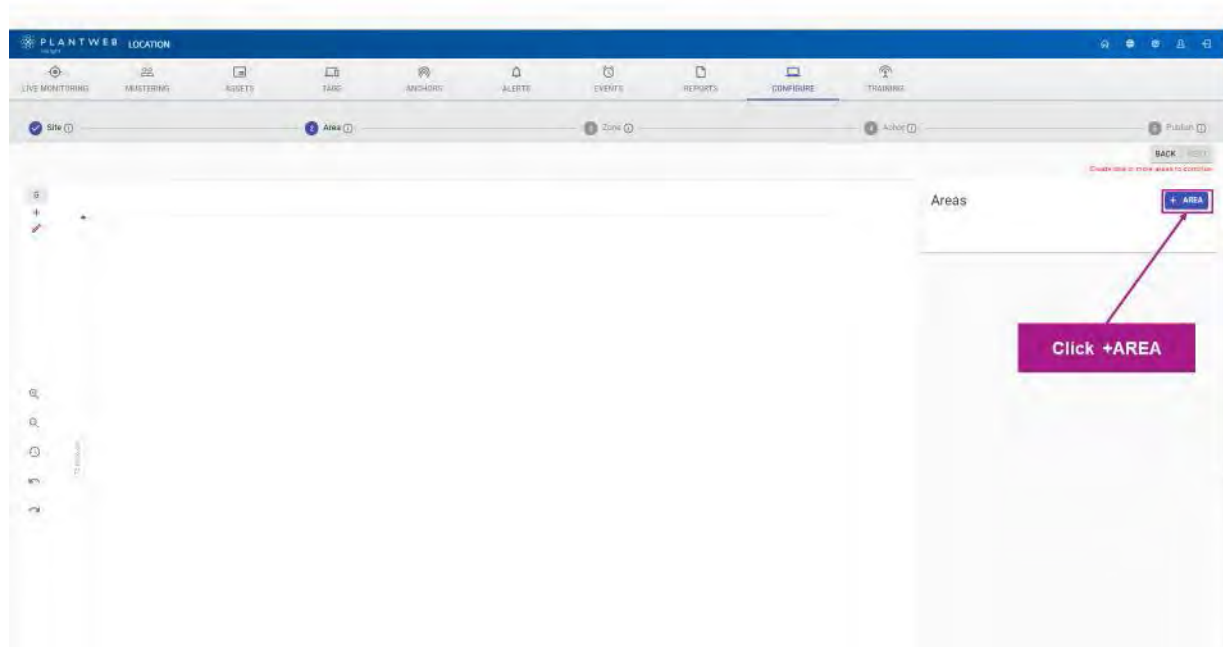


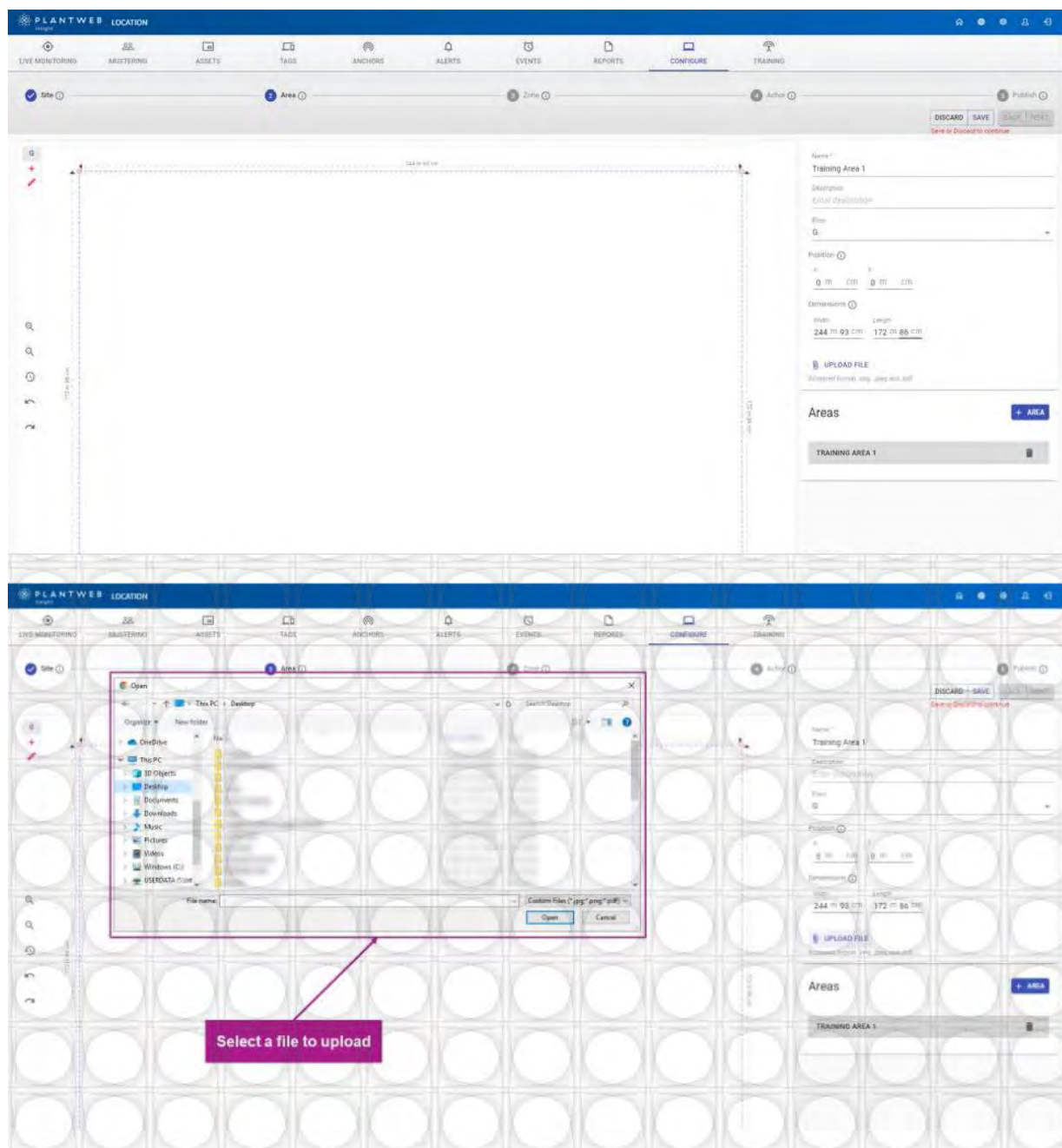
12.3 Site Configuration

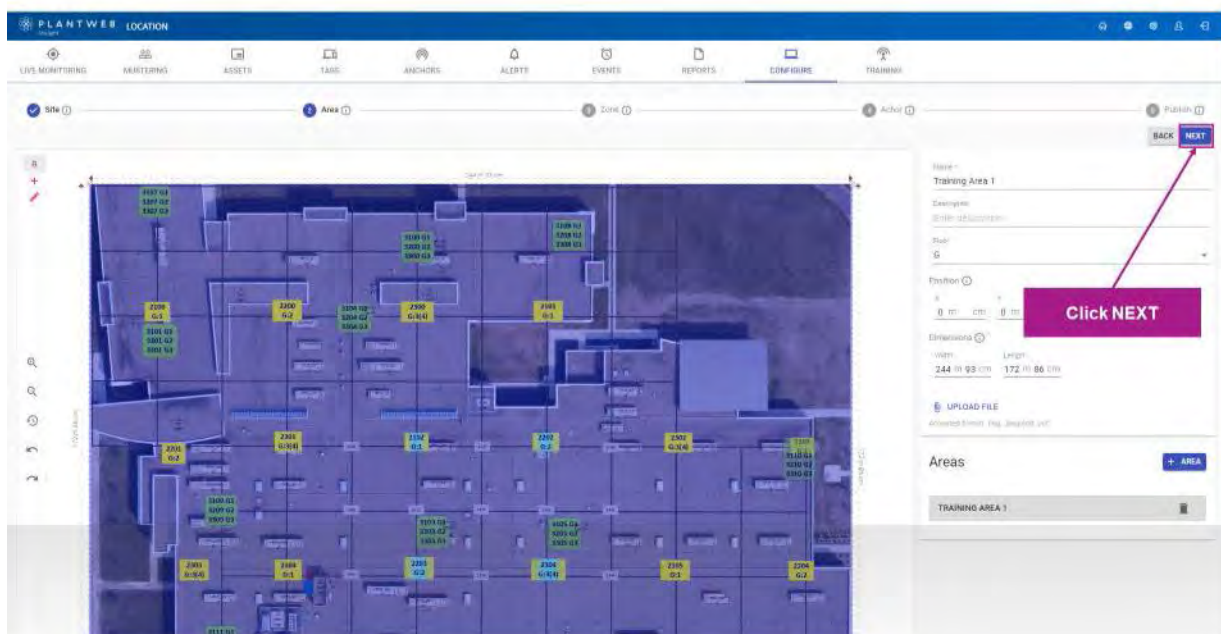
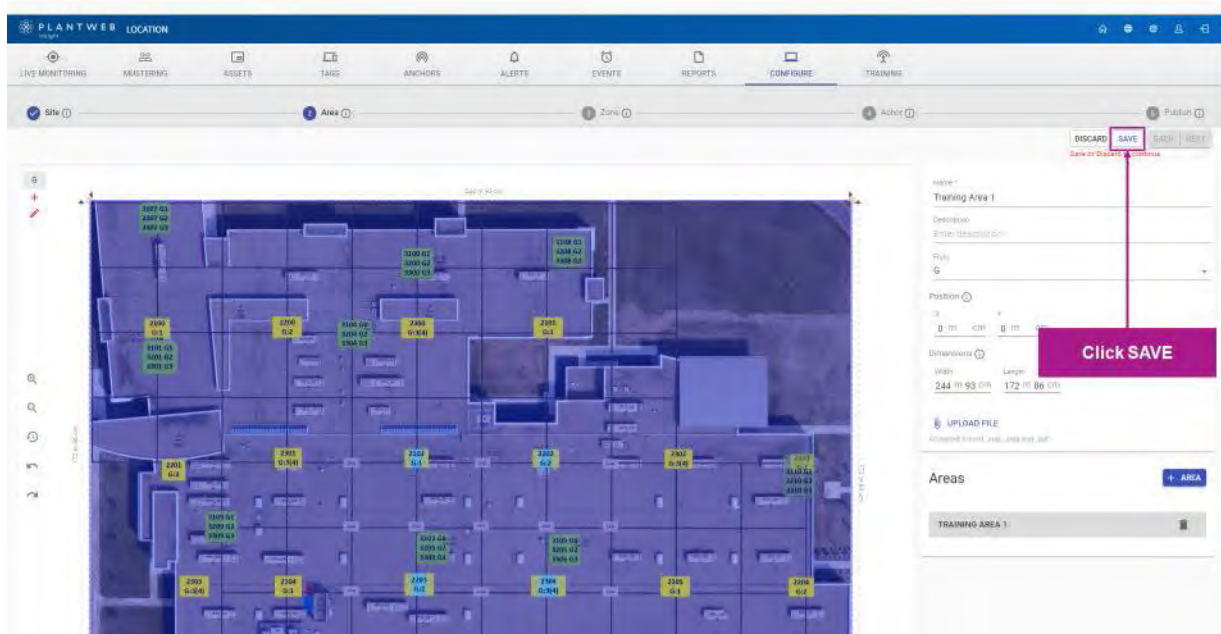


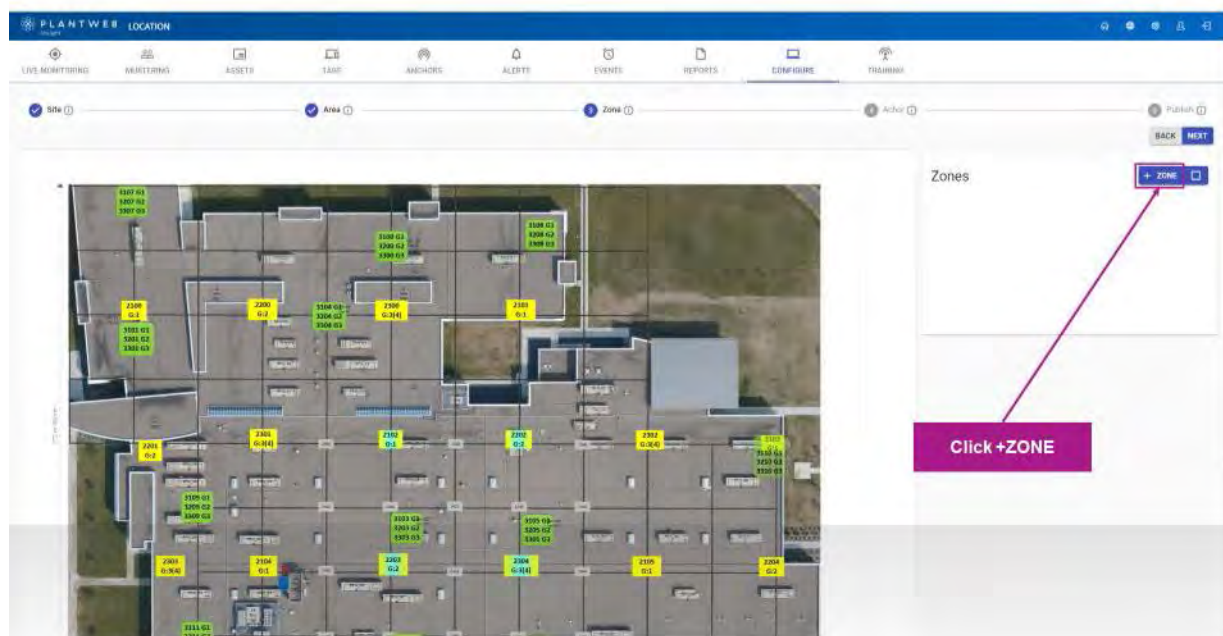
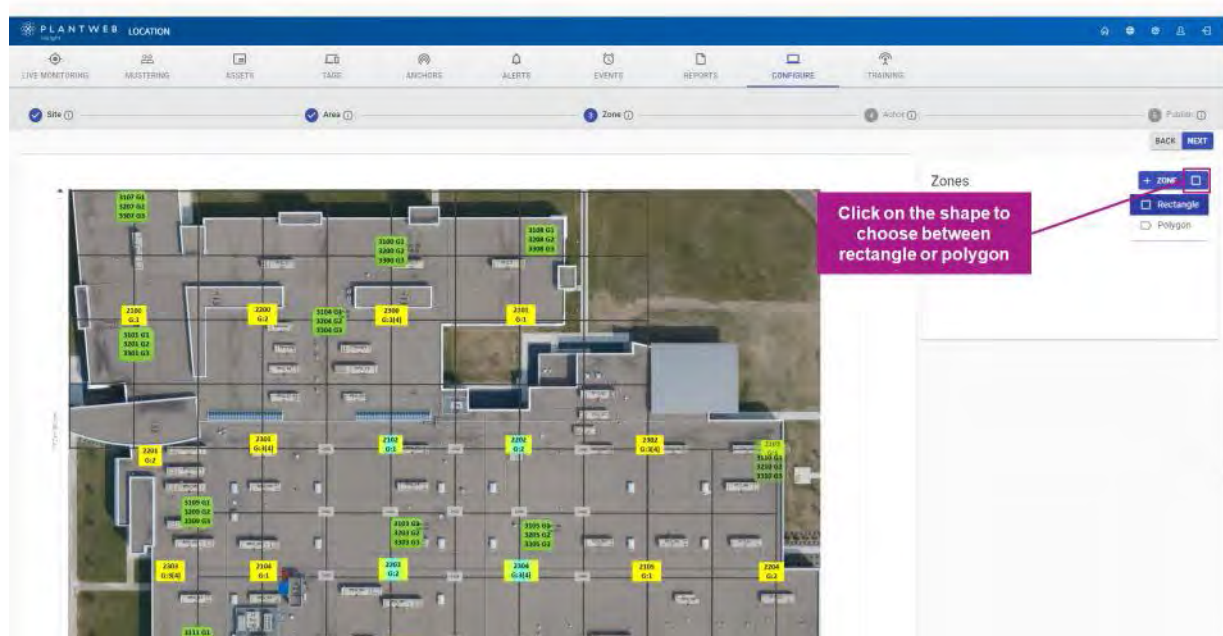


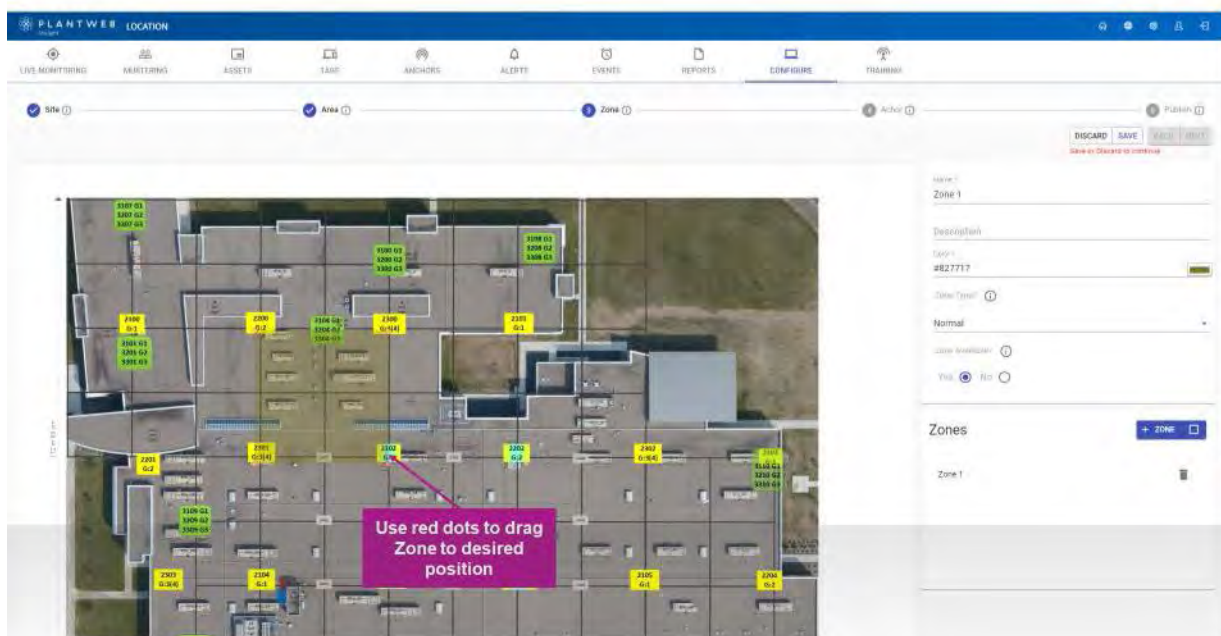
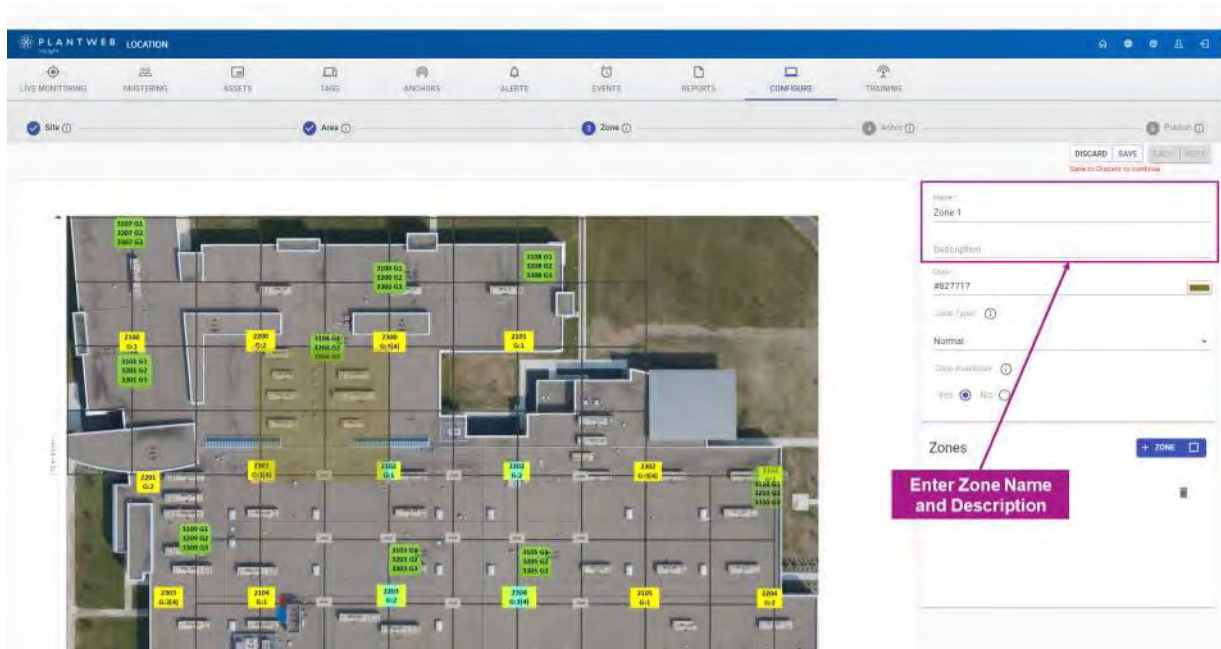


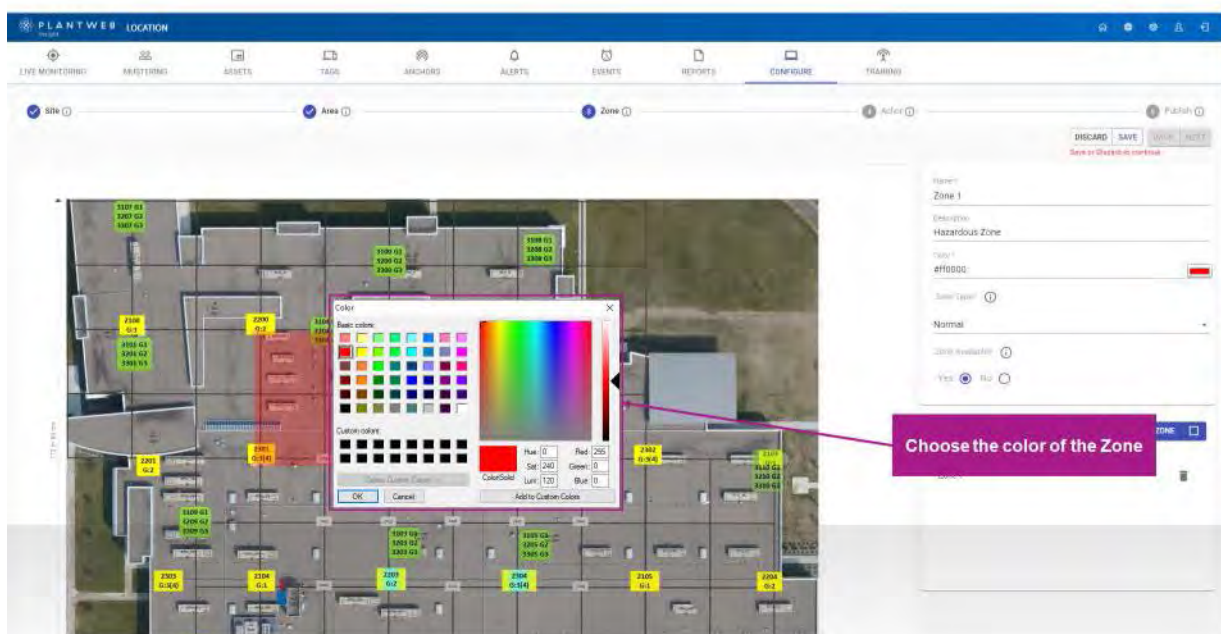
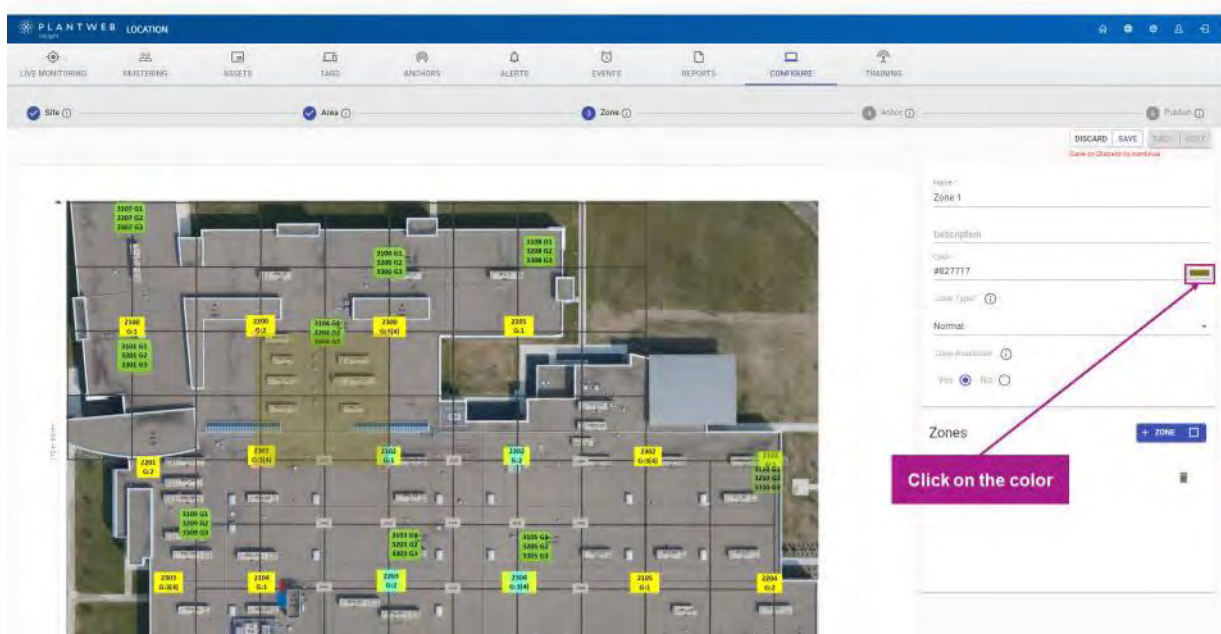


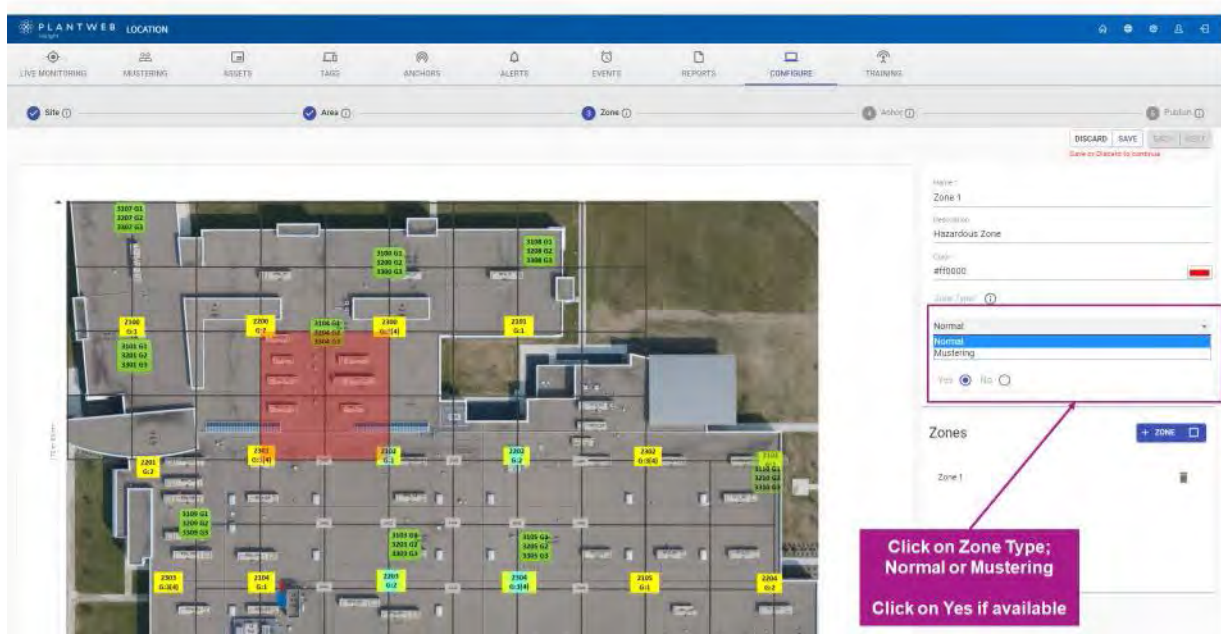






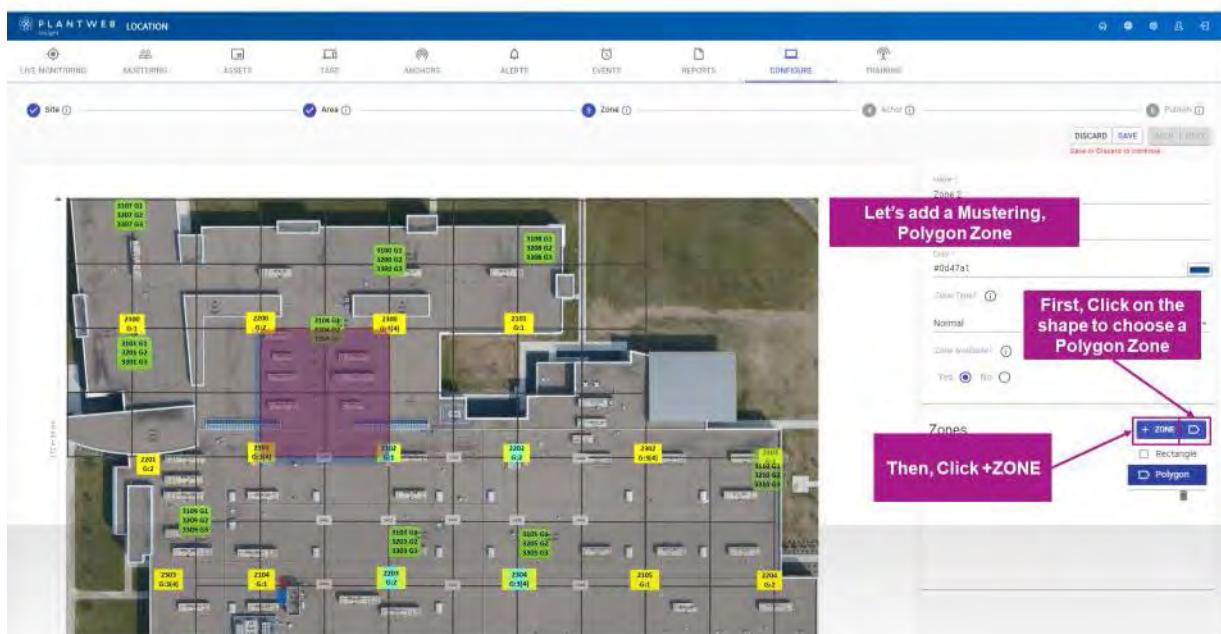






The screenshot shows the PLANTWEB LOCATION interface. The top navigation bar includes icons for LIVE MONITORING, MUSTERING, ASSETS, TAGS, ANCHORS, ALERTS, EVENTS, REPORTS, CONFIGURE, and TRAINING. Below the navigation bar, there are filters for Site, Area, Zone, and Anchor. The main map area displays a grid of zones, each labeled with a number and a date. A red zone is highlighted in the center. On the right side, there is a configuration panel for Zone 1. The panel includes fields for Name, Description, Color, and Zone Type. The Zone Type dropdown menu is open, showing options for Normal, Mustering, and Mustering. The Yes radio button is selected. Below the configuration panel, there is a list of zones with a + ZONE button.

**Click on Zone Type;
Normal or Mustering
Click on Yes if available**

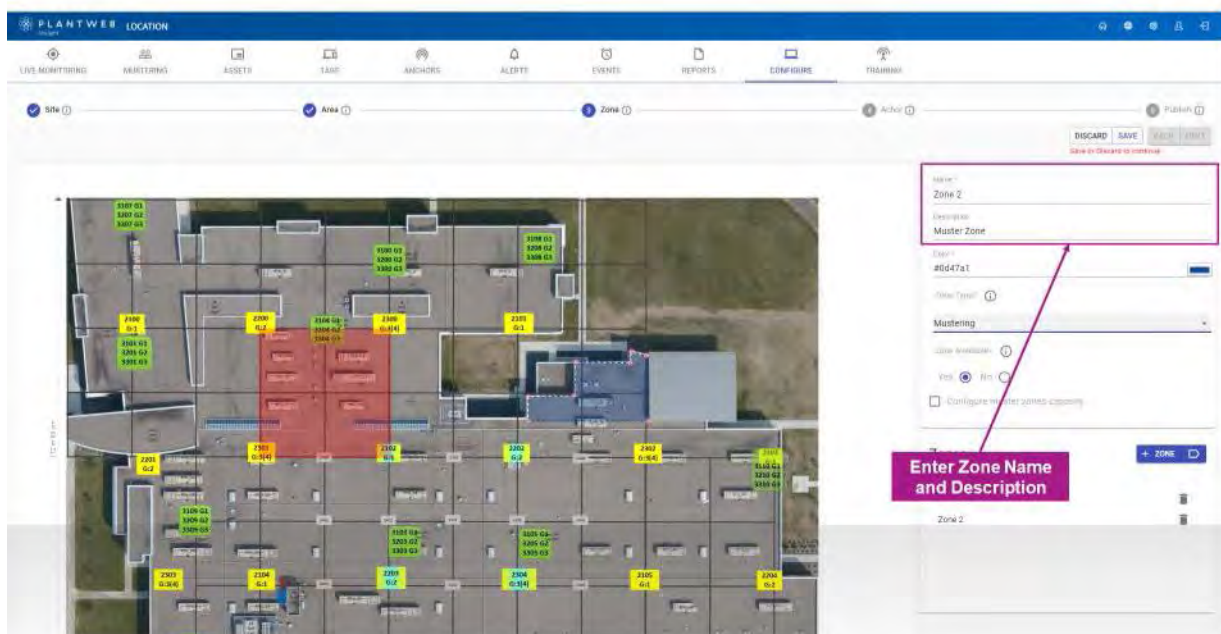
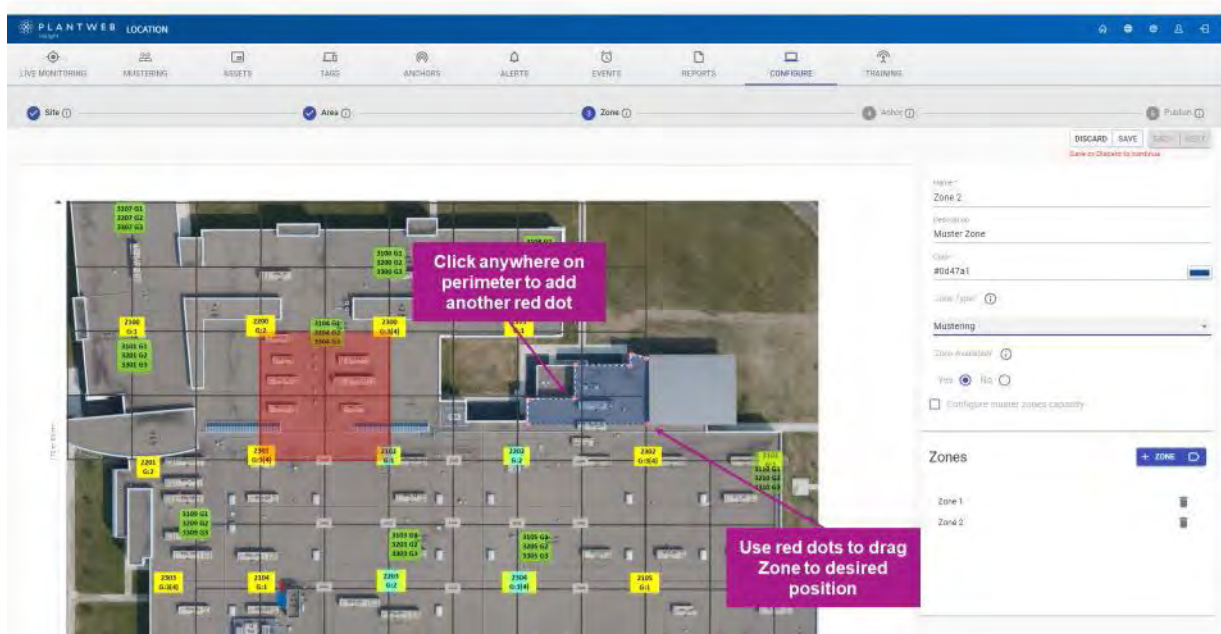


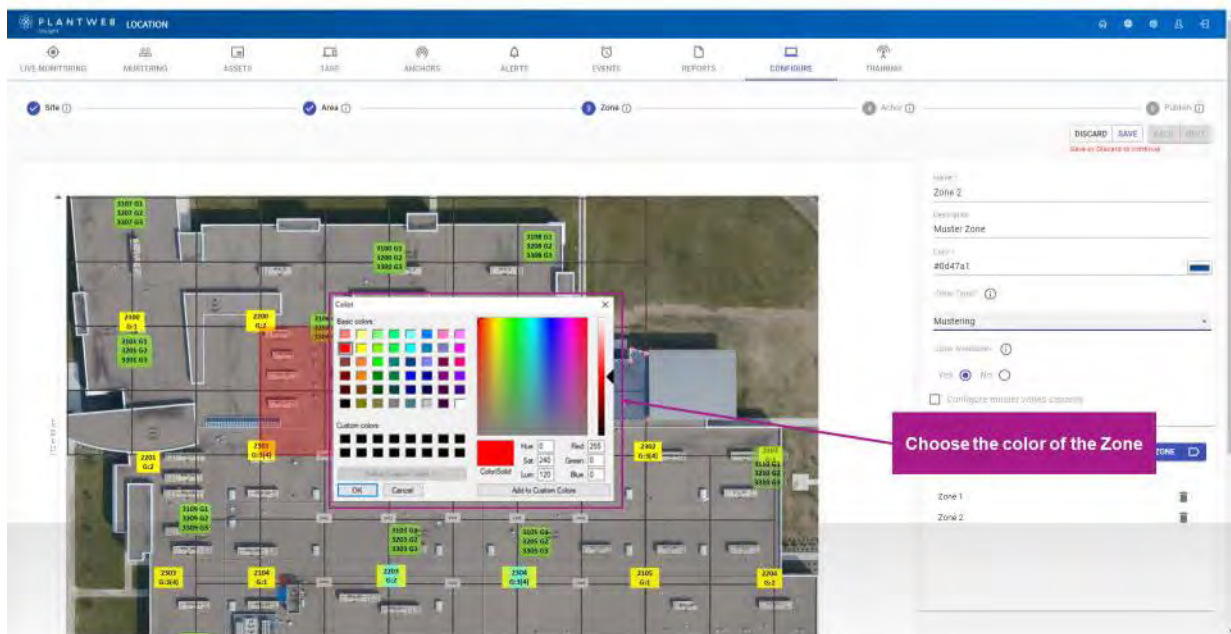
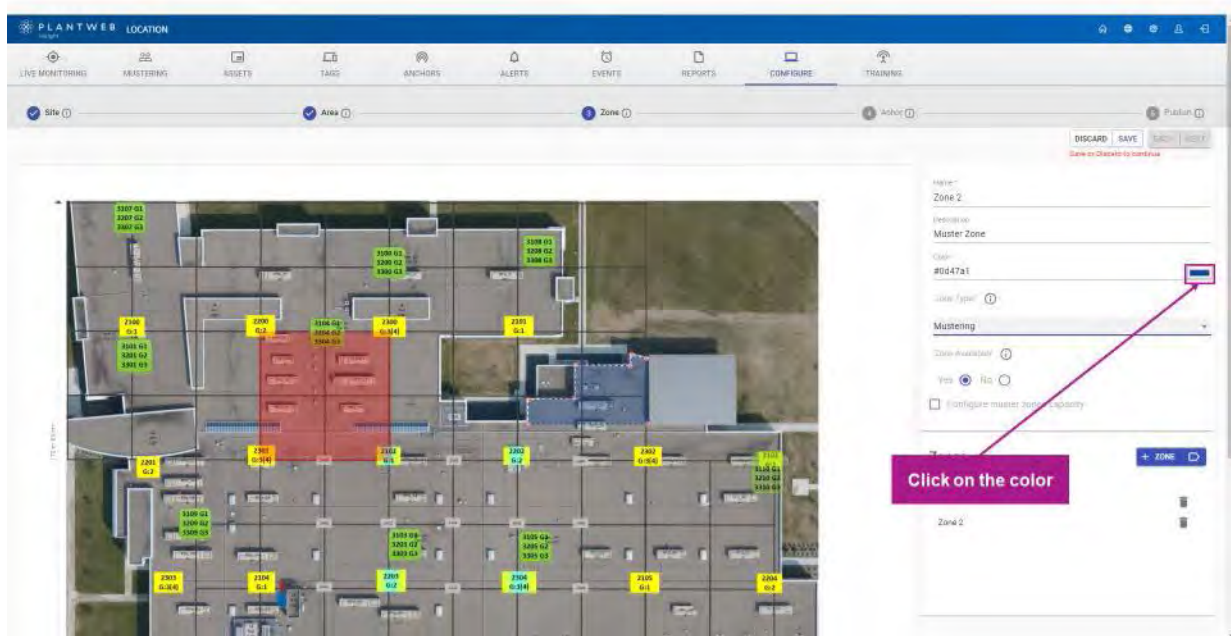
The screenshot shows the PLANTWEB LOCATION interface. The top navigation bar includes icons for LIVE MONITORING, MUSTERING, ASSETS, TAGS, ANCHORS, ALERTS, EVENTS, REPORTS, CONFIGURE, and TRAINING. Below the navigation bar, there are filters for Site, Area, Zone, and Anchor. The main map area displays a grid of zones, each labeled with a number and a date. A purple zone is highlighted in the center. On the right side, there is a configuration panel for Zone 1. The panel includes fields for Name, Description, Color, and Zone Type. The Zone Type dropdown menu is open, showing options for Normal, Mustering, and Mustering. The Yes radio button is selected. Below the configuration panel, there is a list of zones with a + ZONE button. The + ZONE button is highlighted with a red box.

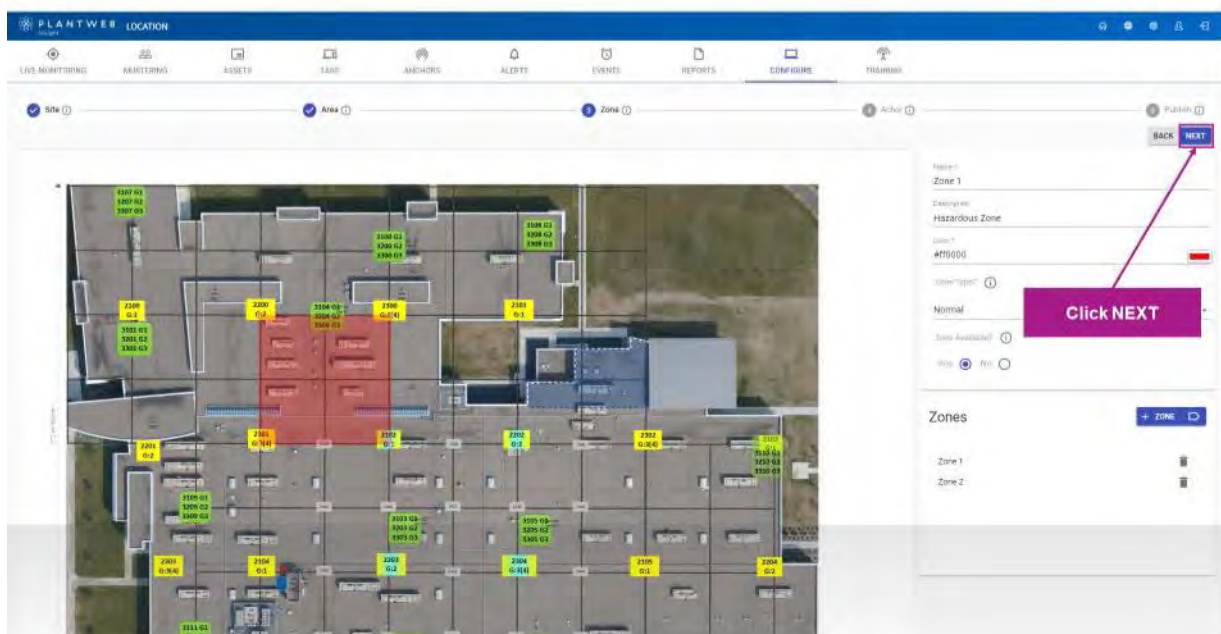
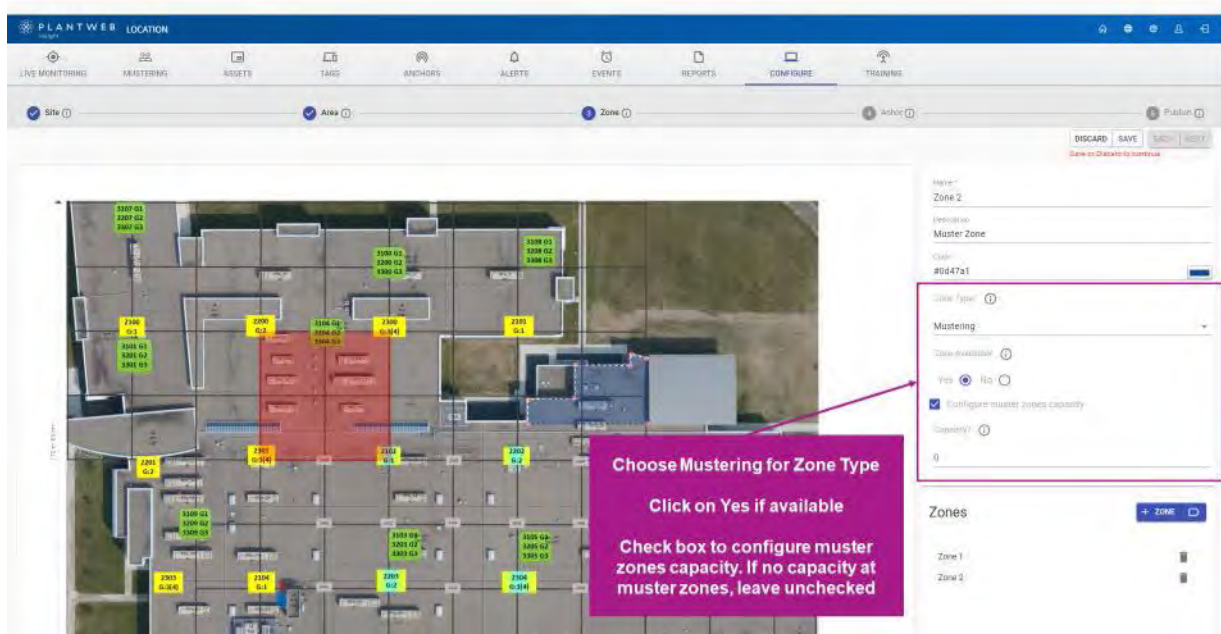
**Let's add a Mustering,
Polygon Zone**

**First, Click on the
shape to choose a
Polygon Zone**

Then, Click +ZONE

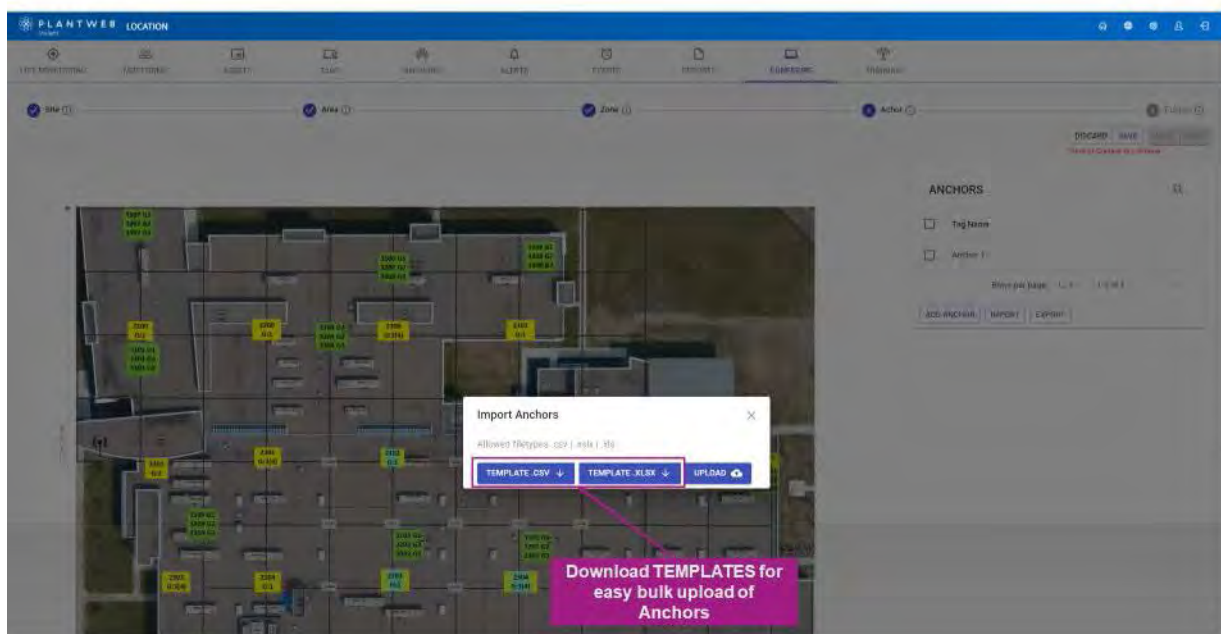
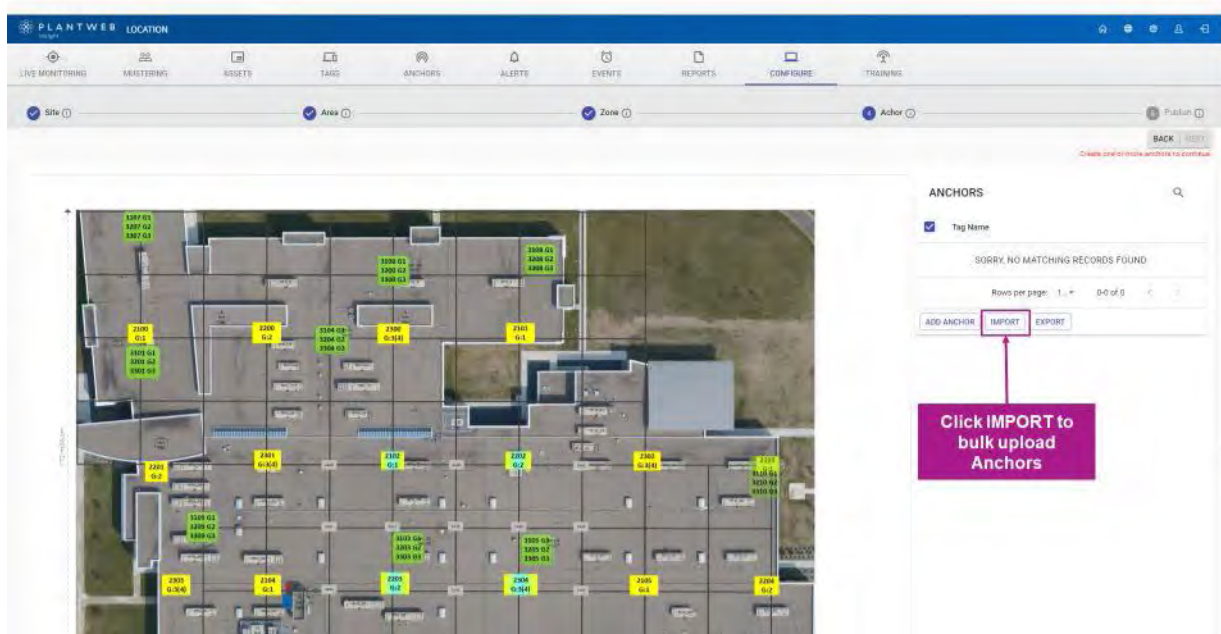


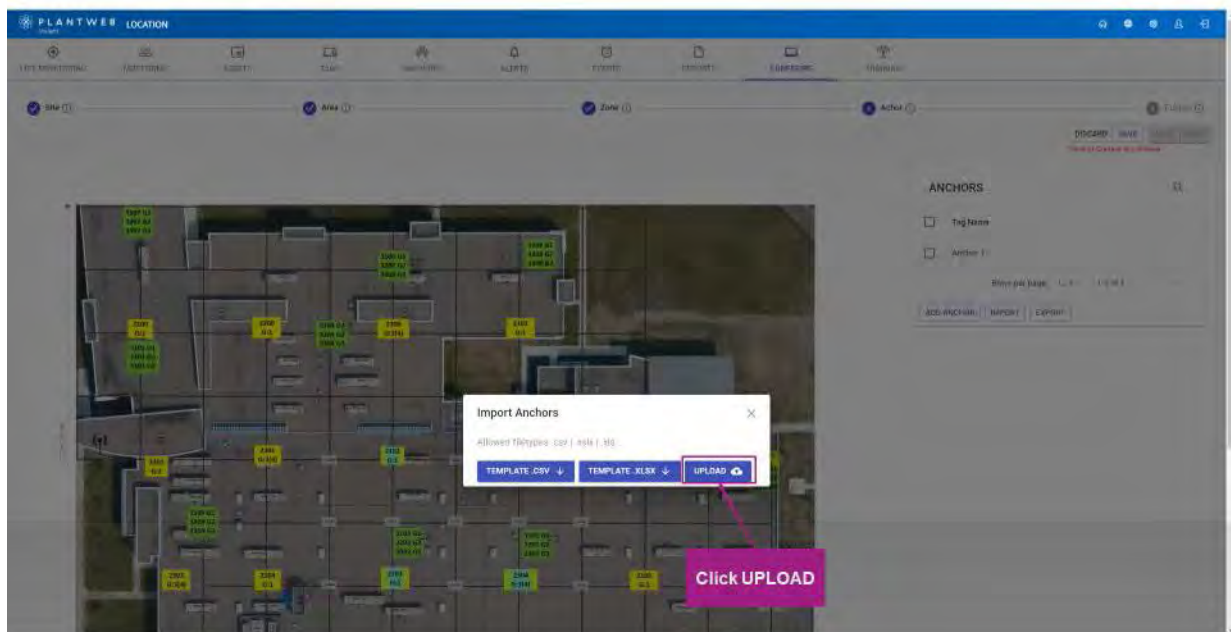
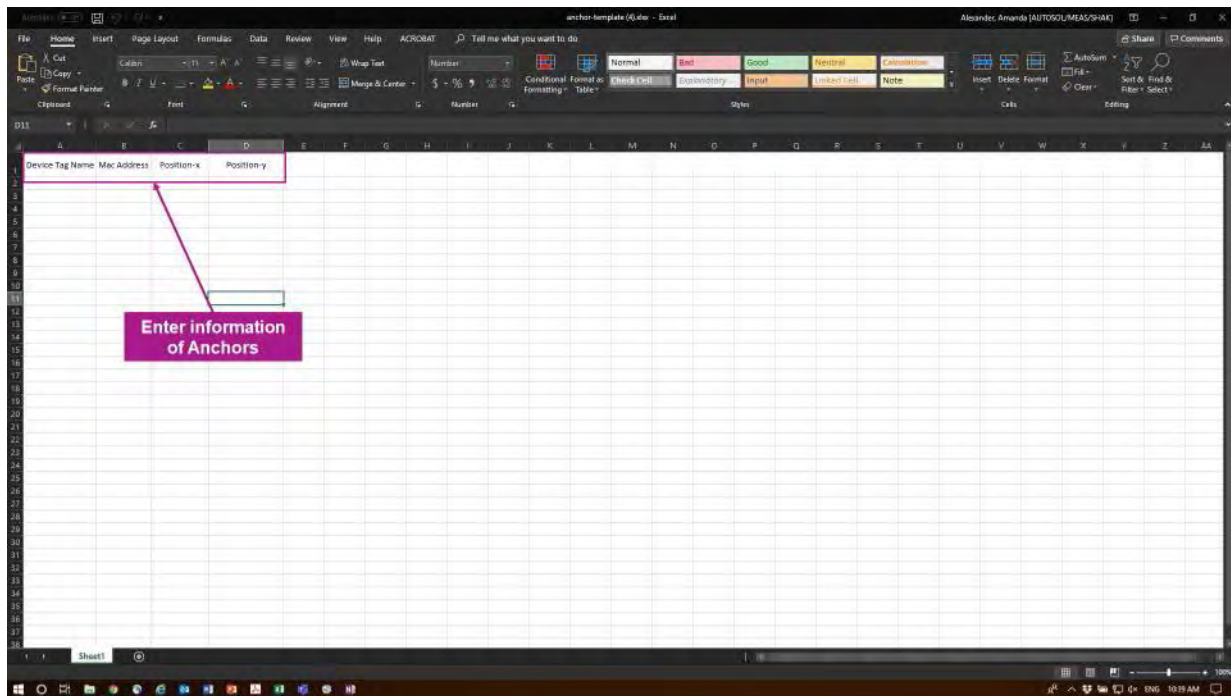


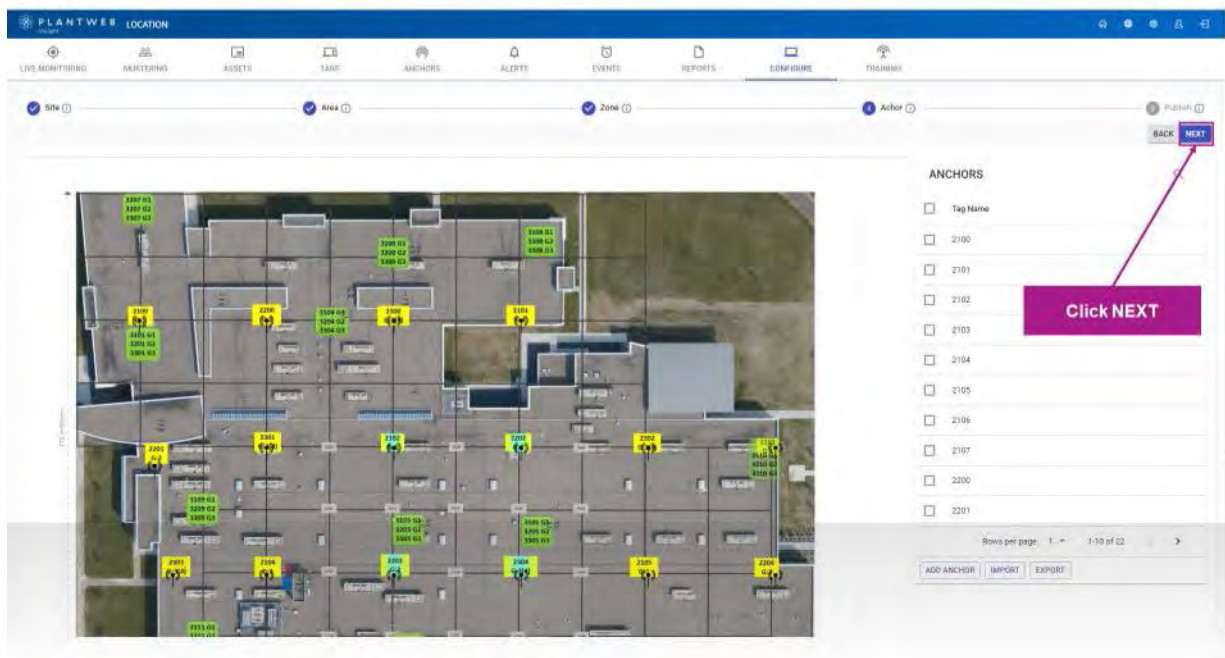
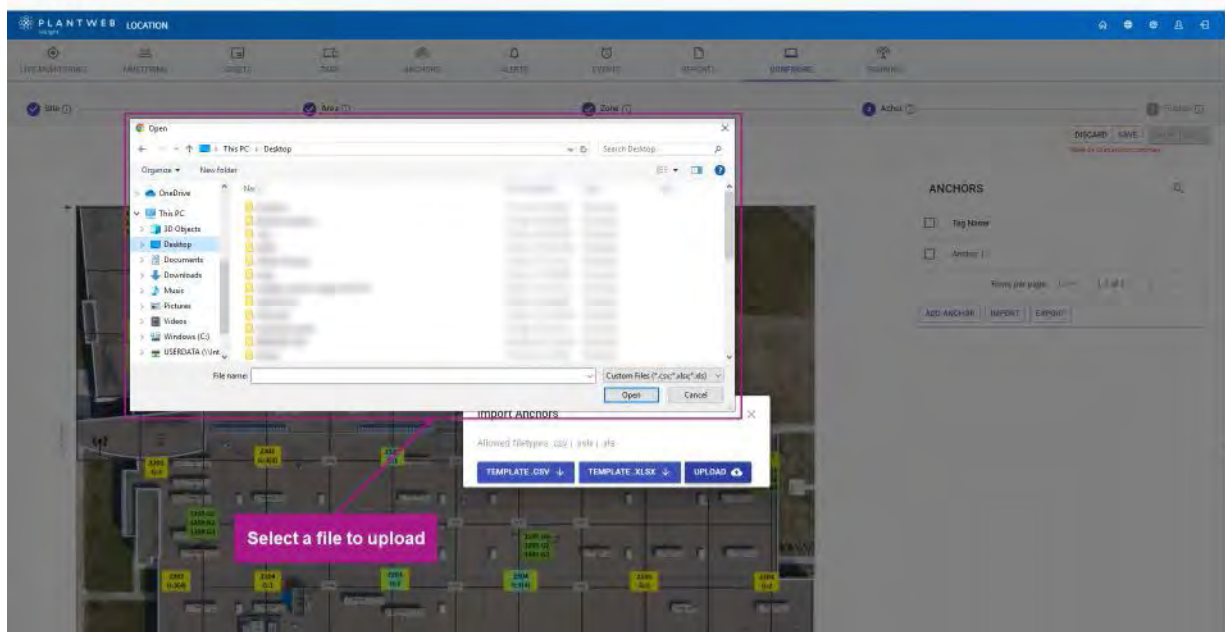


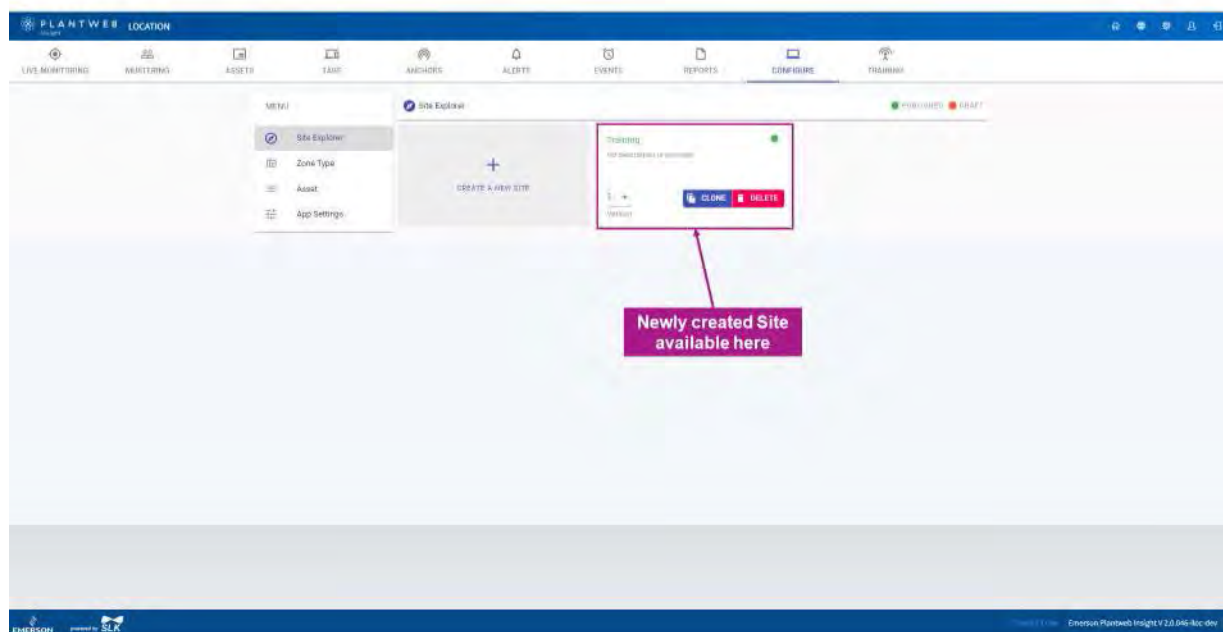
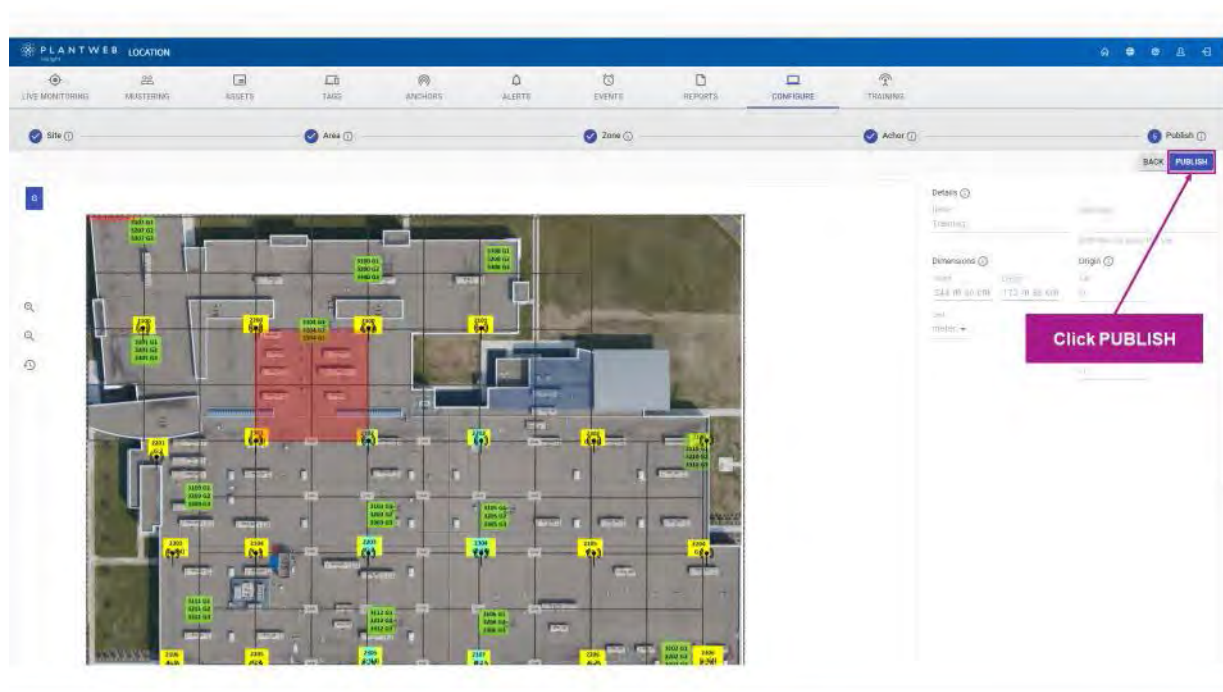
The screenshot shows the PLANTWEB LOCATION interface. The top navigation bar includes icons for LIVE MONITORING, MAINTENANCE, ASSETS, TAGS, ANCHORS, ALERTS, EVENTS, REPORTS, CONFIGURE, and TRAINING. Below the navigation bar, there are filters for Site, Area, Zone, and Anchor. The main map area displays a building layout with many yellow anchor markers, each labeled with a tag name and coordinates. On the right side, the 'ANCHORS' panel is visible, showing a search bar and a table of anchors. A callout box with a purple background and white text points to the 'ADD ANCHOR' button, stating: "Click ADD ANCHOR to individually add Anchors".

This screenshot shows the same PLANTWEB LOCATION interface, but with the 'Anchor Details' dialog box open. The dialog box contains fields for 'Device Tag/Name' (set to 'Anchor 1'), 'PISO #', 'Position' (with a map view and coordinates), 'Location Type' (set to 'relative'), and 'Description'. A callout box with a purple background and white text points to the dialog box, stating: "Enter Anchor Details". Below the callout box, a note reads: "Note: Anchor Position is critical to provide best system accuracy".









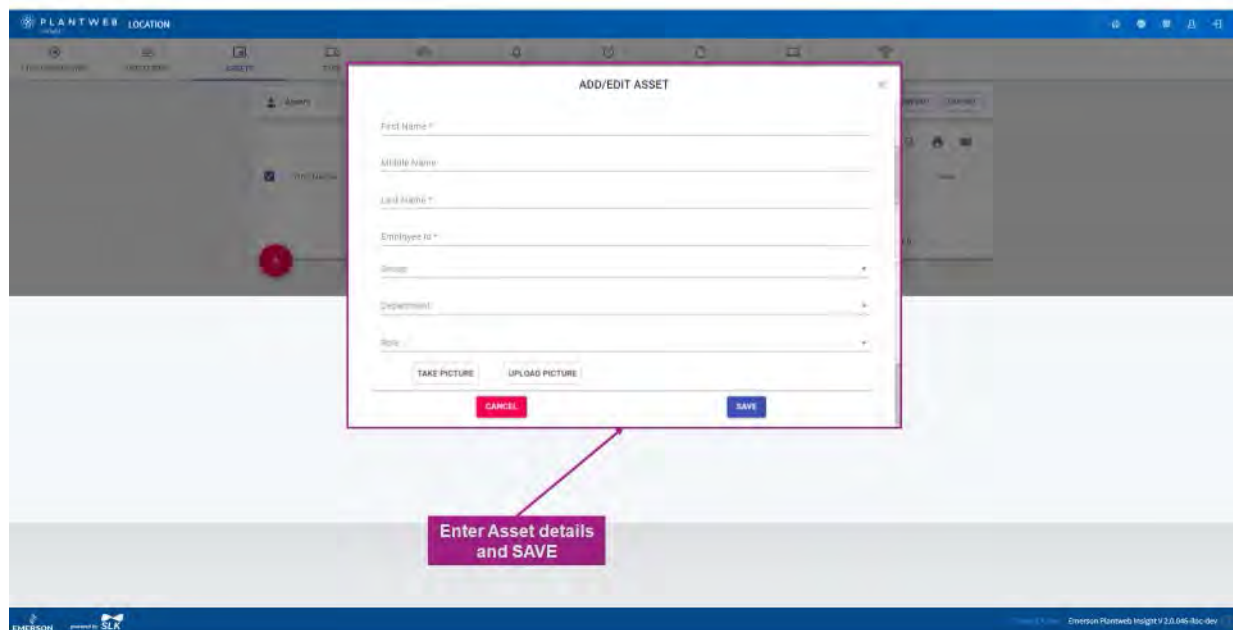
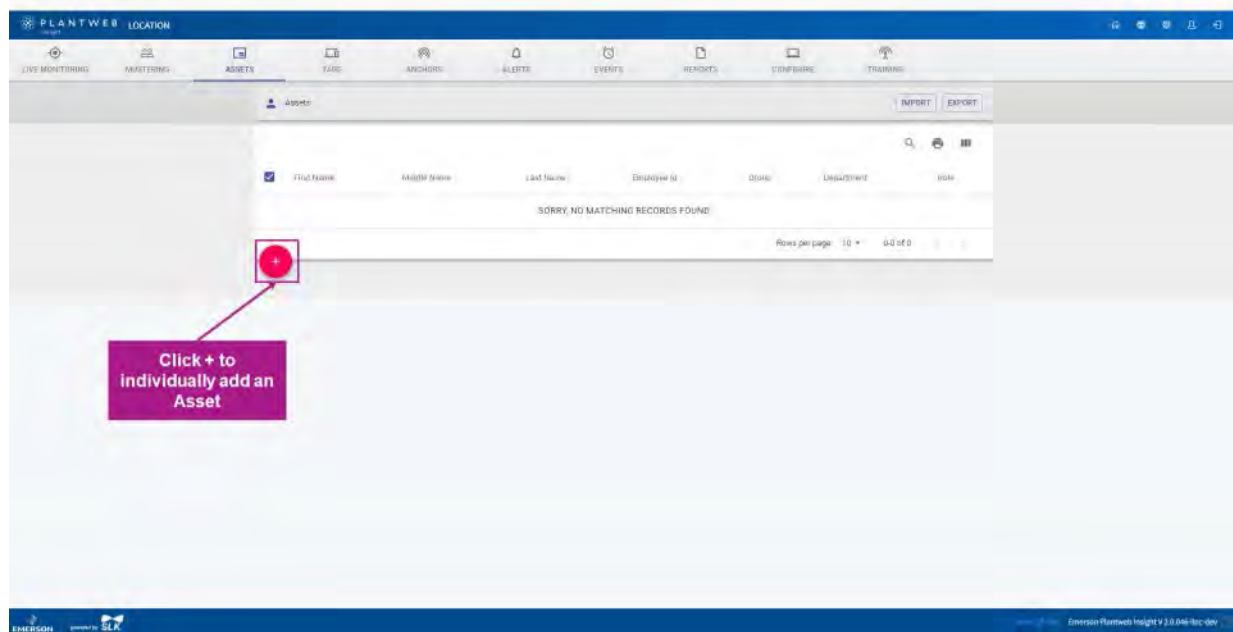
12.4 Asset Configuration

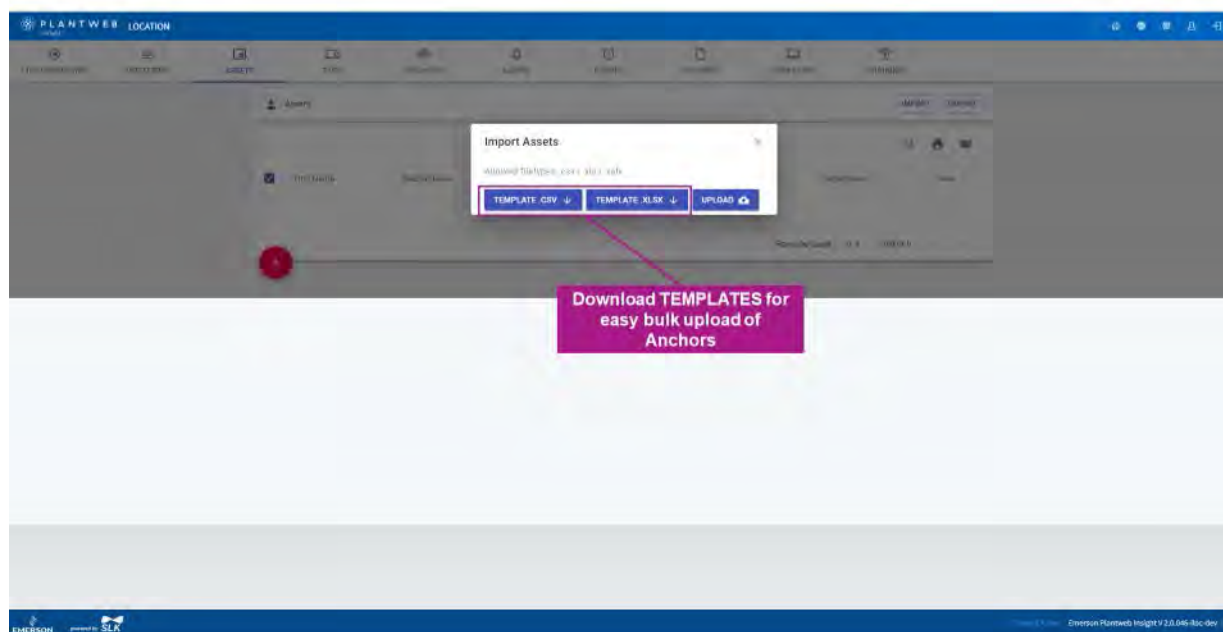
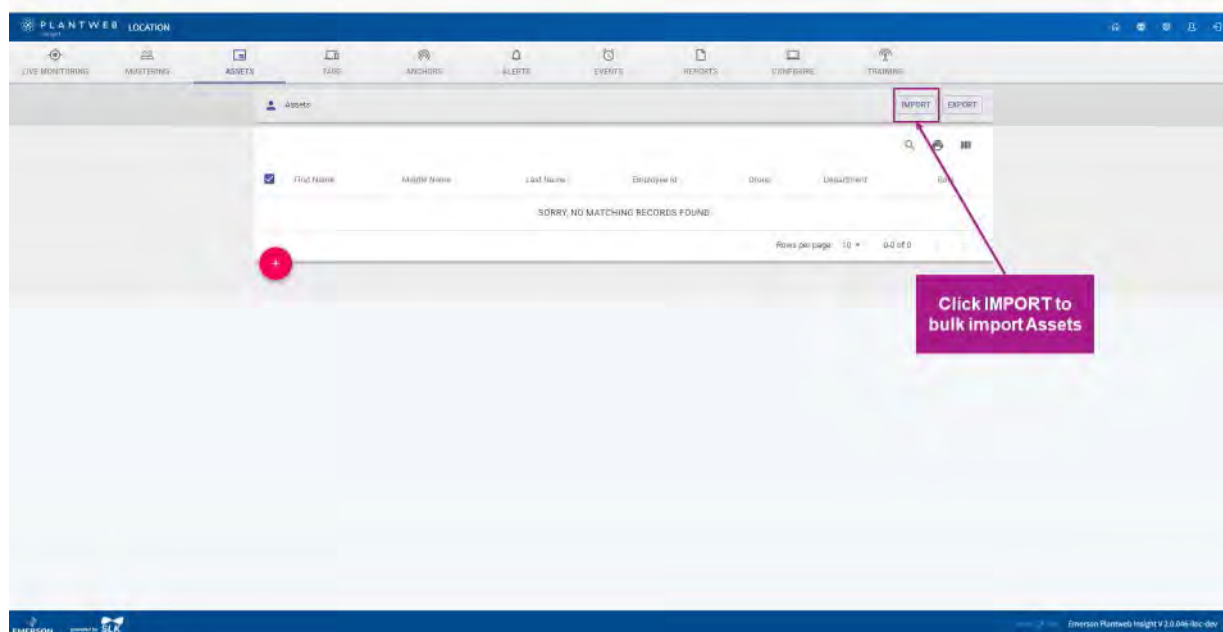
The first screenshot shows the PlantWeb interface with the 'TAGS' tab selected in the top navigation bar. A callout box points to the 'TAGS' tab with the text 'Click TAGS to navigate to the Tags page'. Another callout box points to the table of tags with the text 'Tags pre-loaded from Gateway communication'. The table has columns for Tag ID, Battery Status, Button Status, and Allocation. The data is as follows:

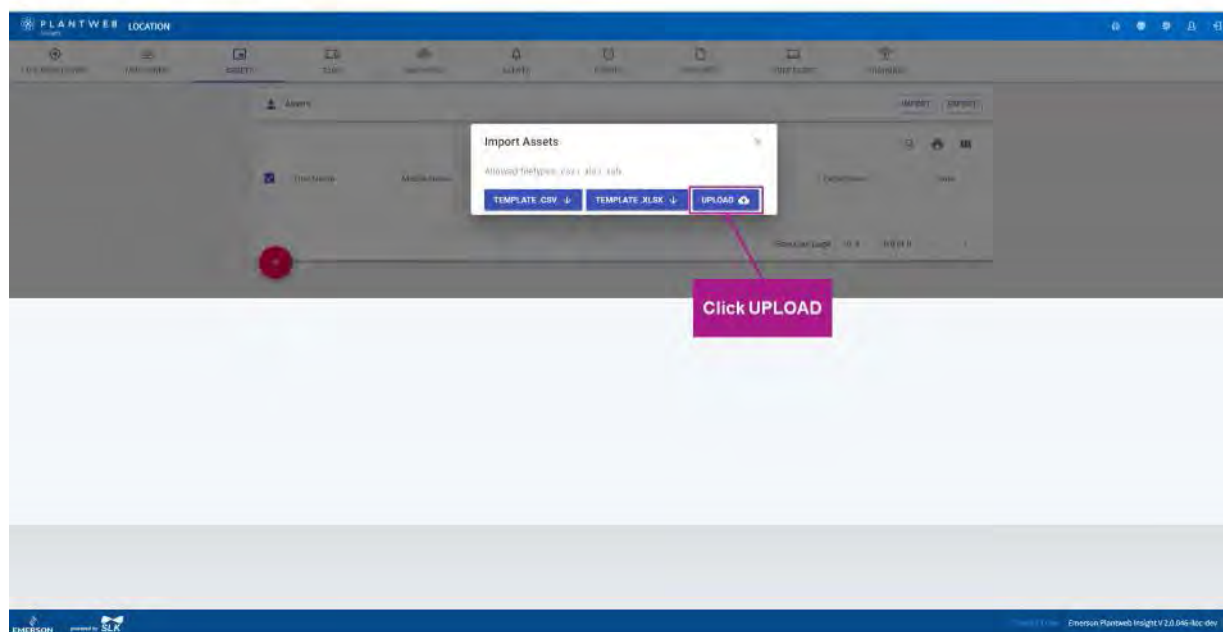
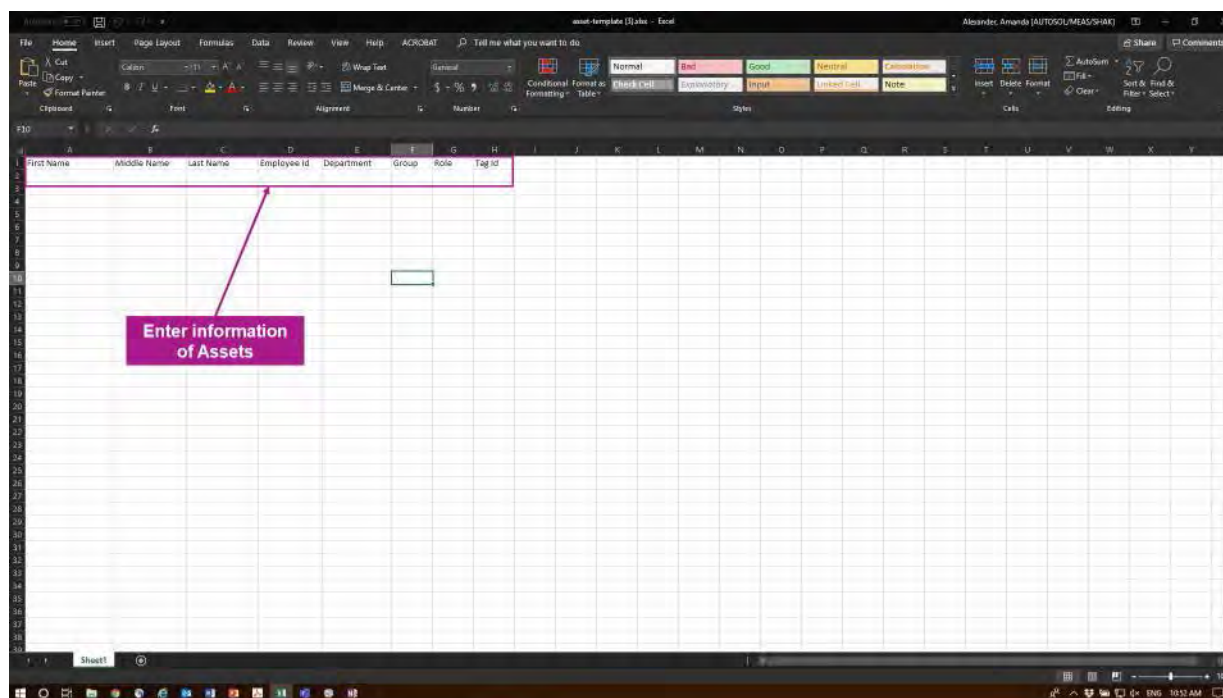
Tag ID	Battery Status	Button Status	Allocation
T3101	GOOD	OFF	
T3102	GOOD	OFF	
T3106	GOOD	OFF	
T3210	GOOD	OFF	
T3201	GOOD	OFF	
T3202	GOOD	OFF	
T3103	LOW	OFF	
T3200	GOOD	OFF	
T3300	GOOD	OFF	
T3303	GOOD	OFF	

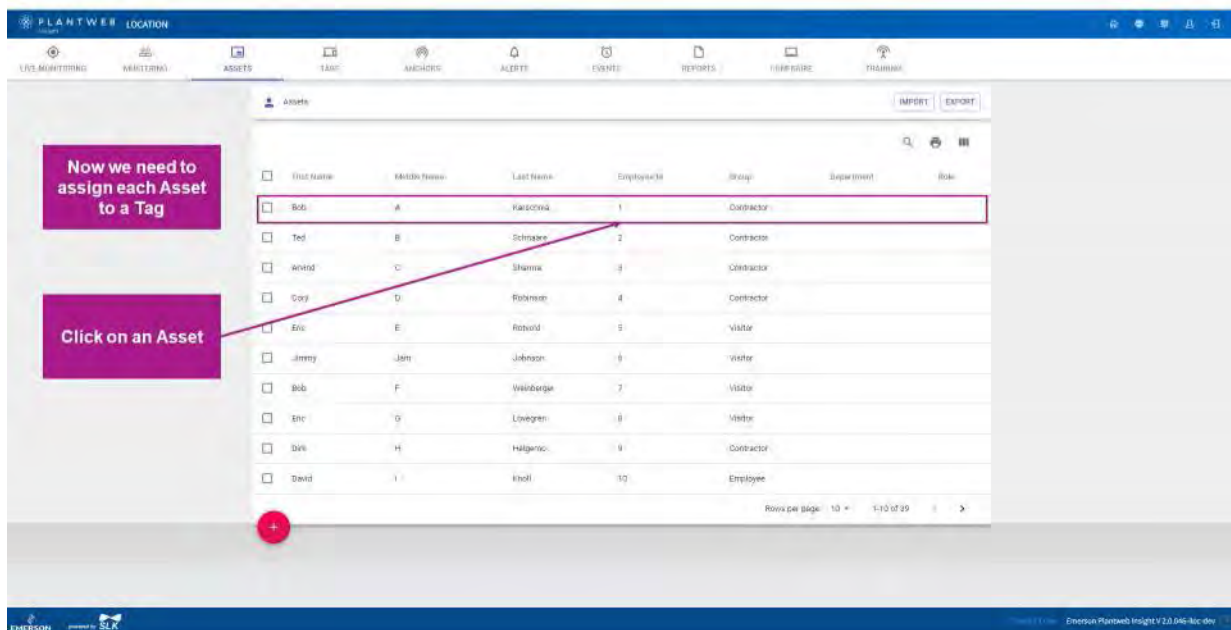
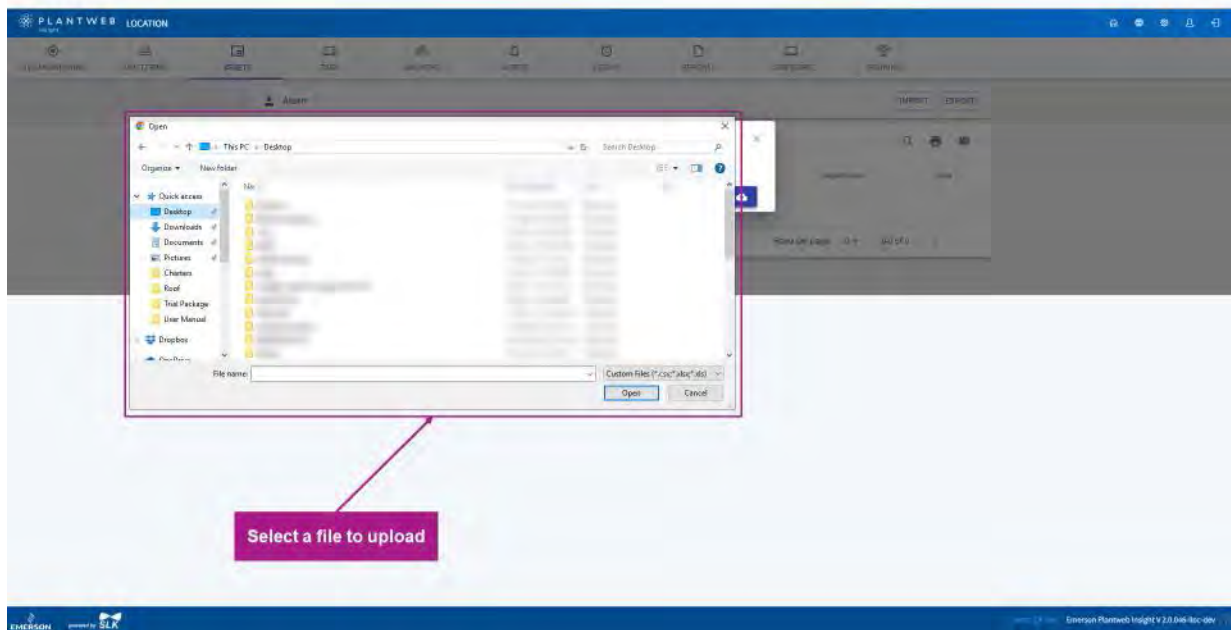
The second screenshot shows the PlantWeb interface with the 'ASSETS' tab selected in the top navigation bar. A callout box points to the 'ASSETS' tab with the text 'Click ASSETS to navigate to the Assets page'. The table below it is empty, with the message 'SORRY, NO MATCHING RECORDS FOUND' and a pagination bar showing 'Rows per page: 10 of 0'.

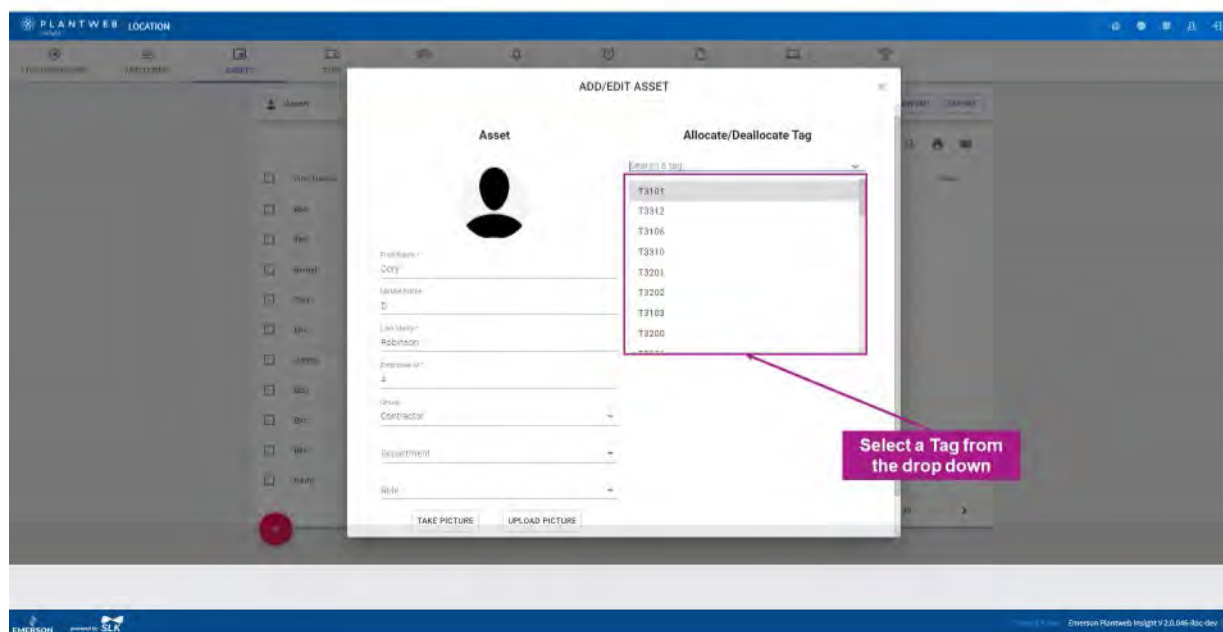
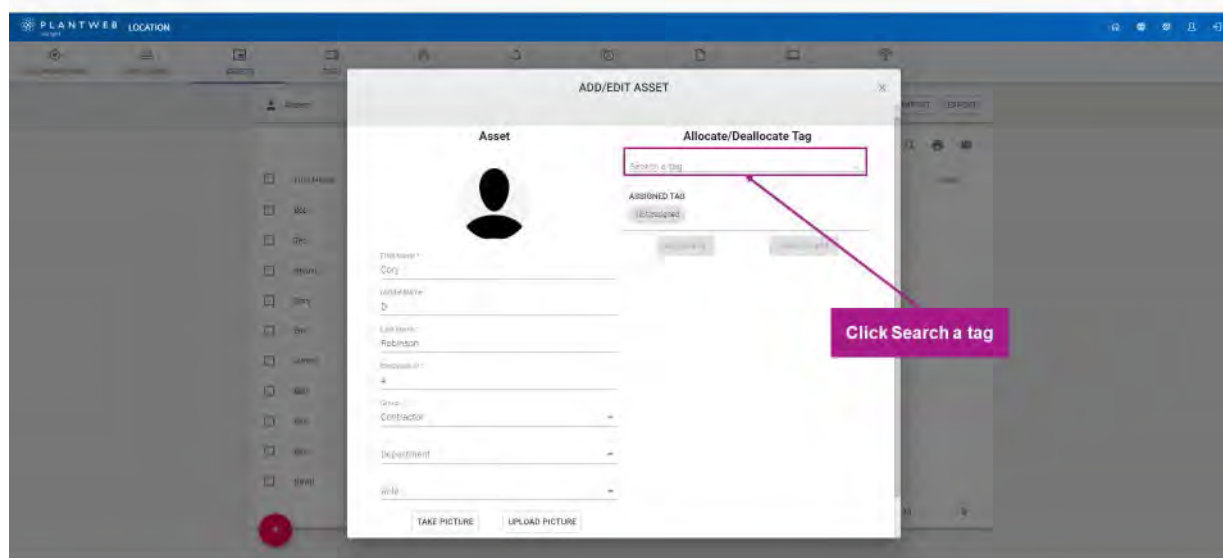
Asset Name	Asset ID	Last Name	Employee ID	Group	Department	Role
------------	----------	-----------	-------------	-------	------------	------

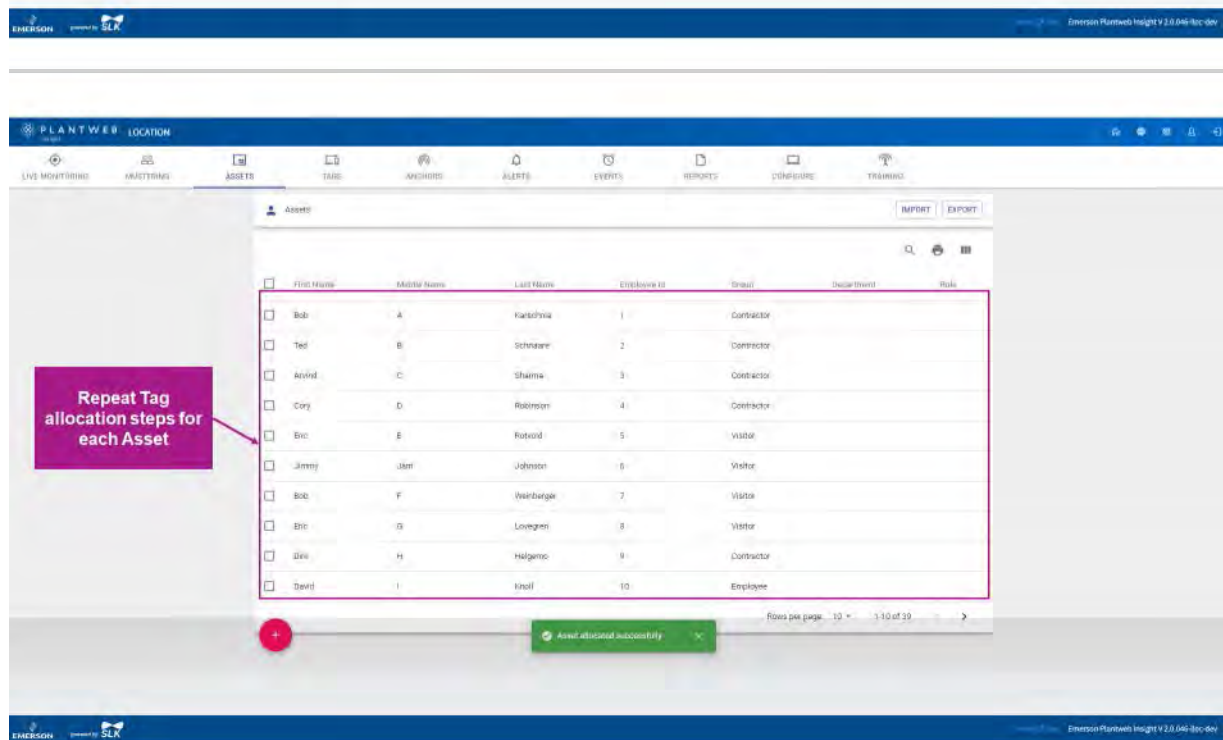
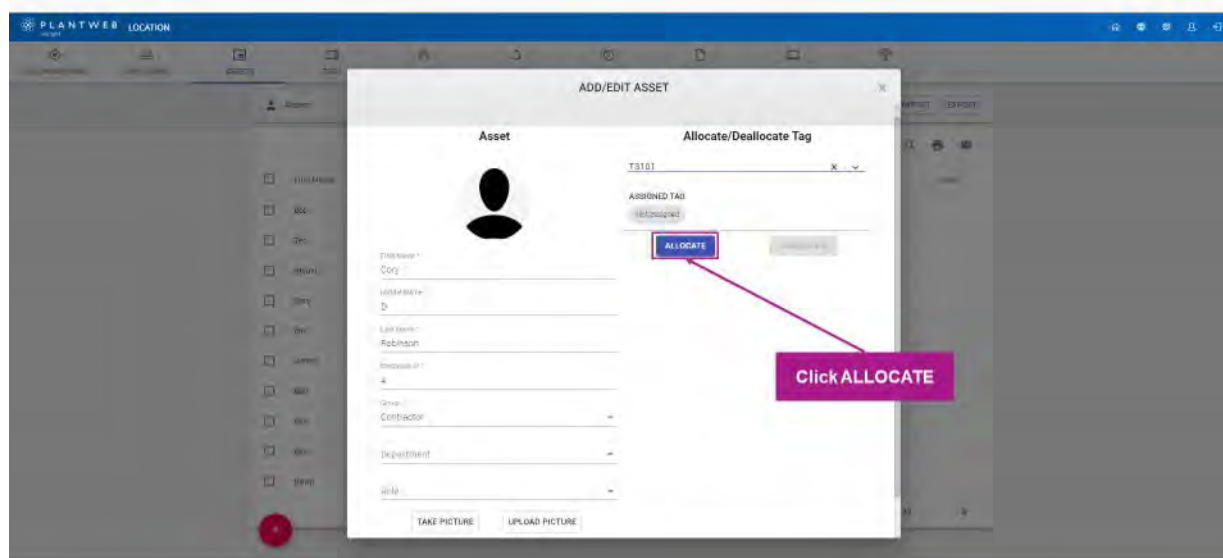










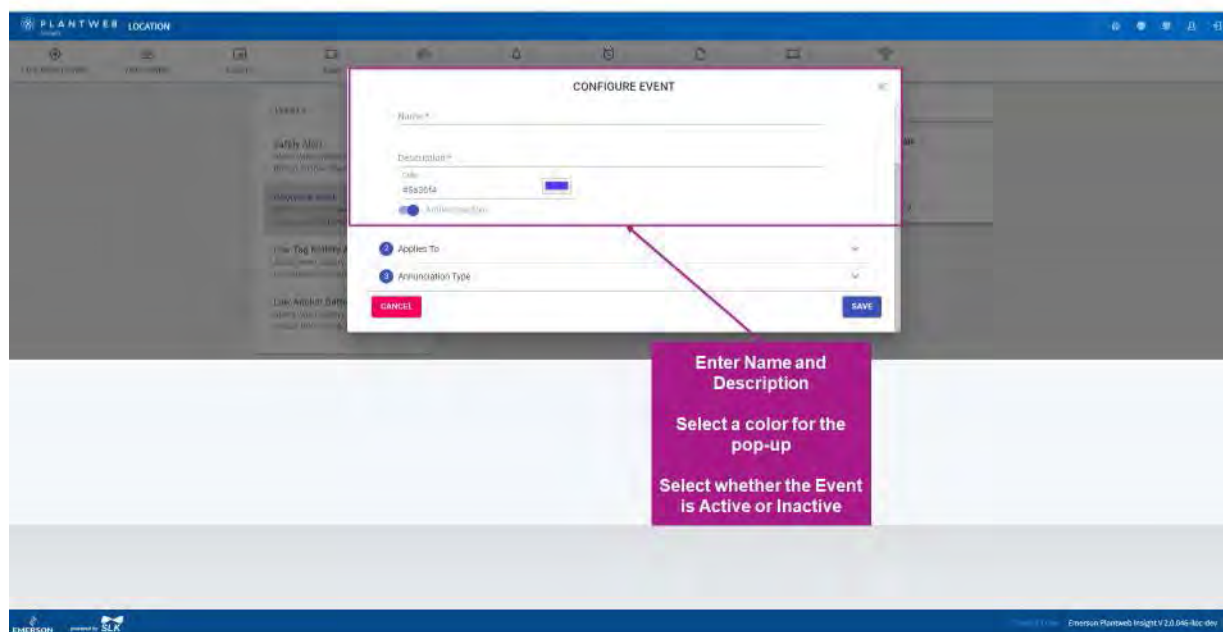
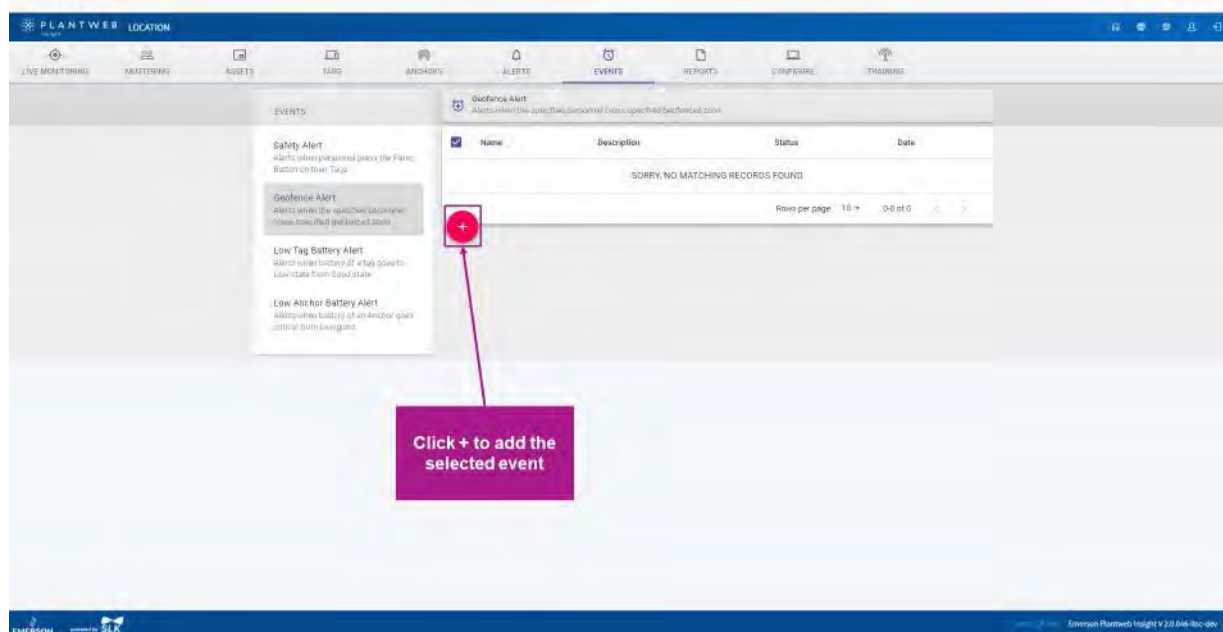


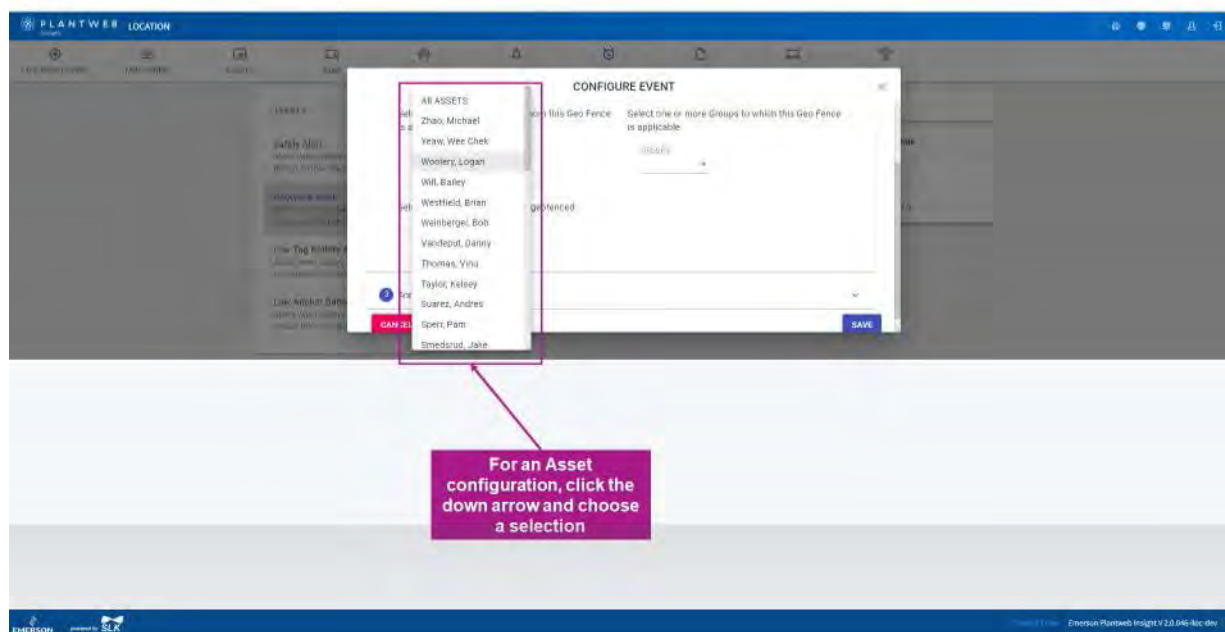
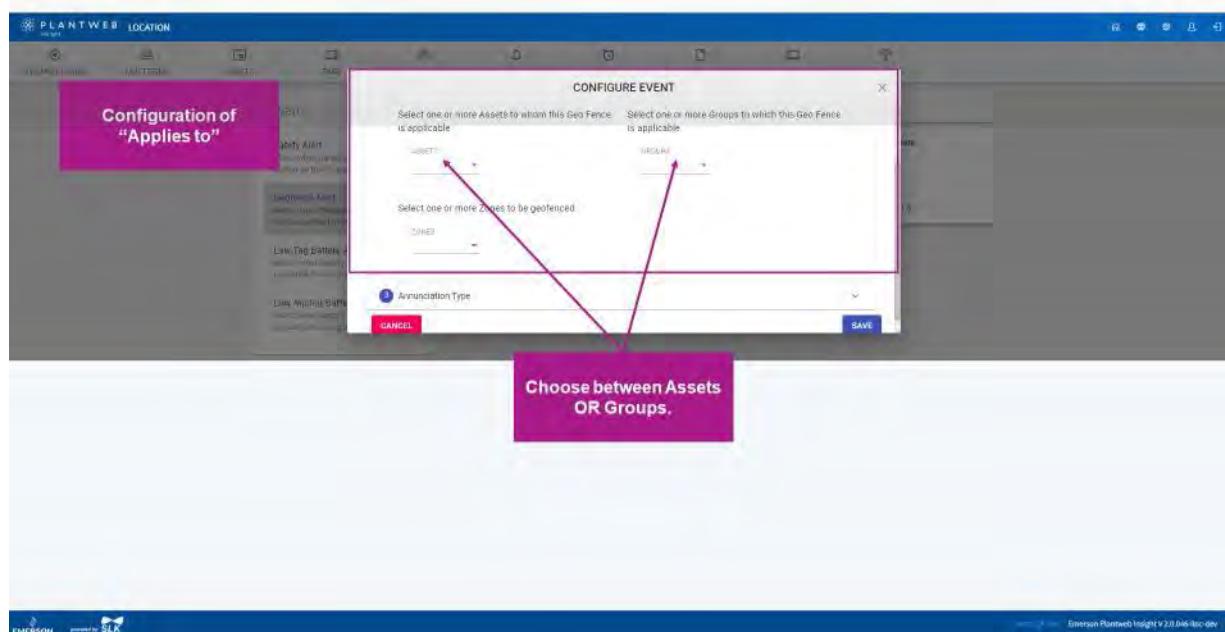
12.5 Event Configuration

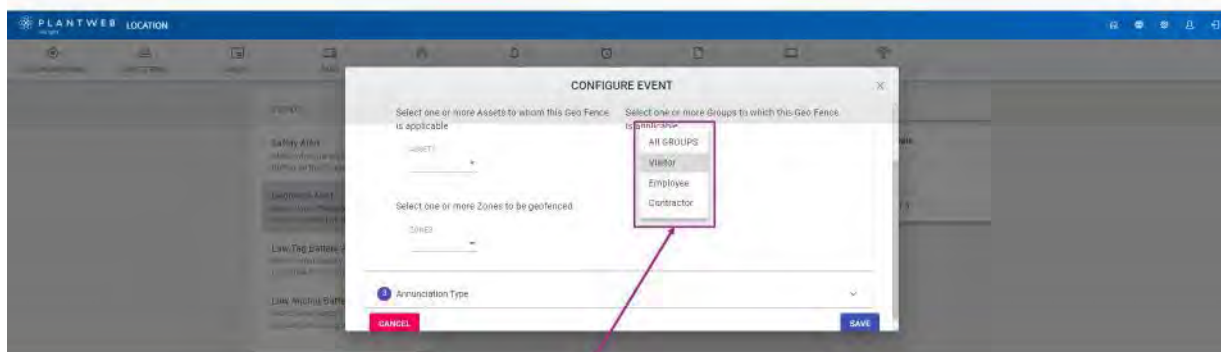
The first screenshot shows the PlantWeb interface with the 'EVENTS' tab selected in the top navigation bar. A callout box points to the 'EVENTS' tab with the text: "Click EVENTS to navigate to the Events page".

The second screenshot shows the 'EVENTS' page. On the left, there is a list of event types: 'Safety Alert', 'Geofence Alert', 'Low Tag Battery Alert', and 'Low Anchor Battery Alert'. A callout box points to this list with the text: "Select the type of EVENT to create and configure".

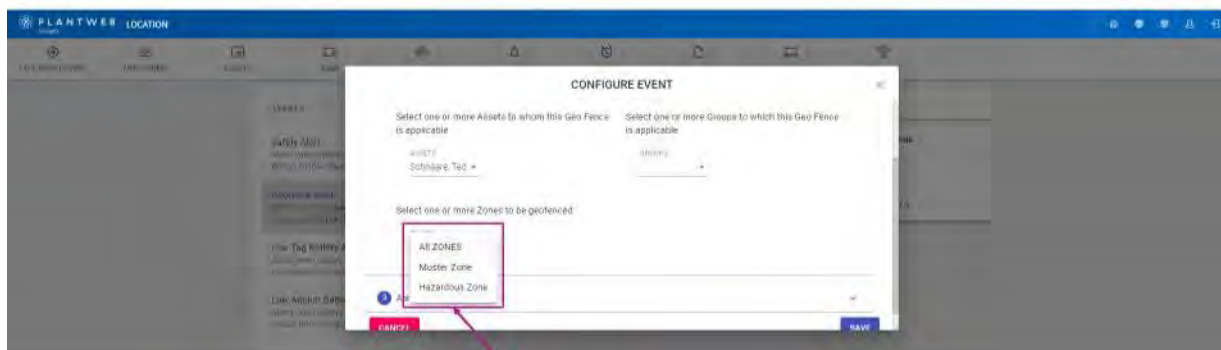
The right side of the second screenshot shows a table of events. The table has columns for 'Name', 'Description', 'Status', and 'Date'. The table is currently empty, and a message 'SORRY, NO MATCHING RECORDS FOUND' is displayed. The table also includes a 'Rows per page' dropdown set to '10' and a 'Page 1 of 1' indicator.



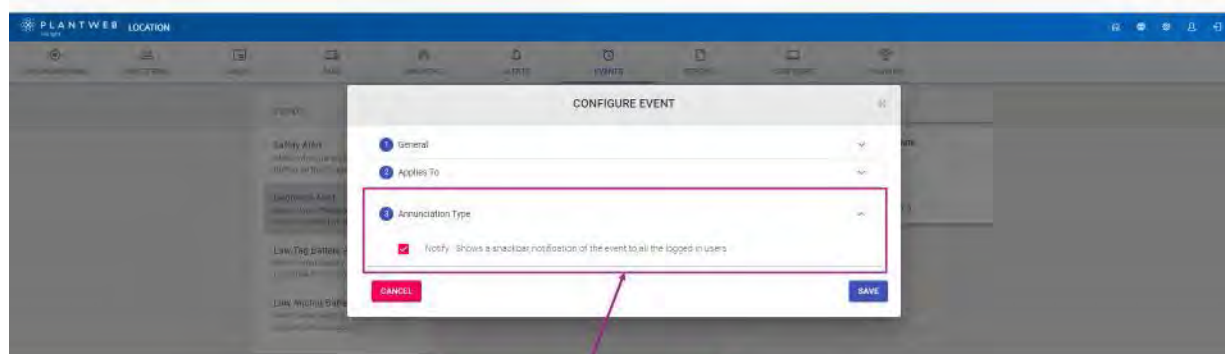




For an Group configuration, click the down arrow and choose a selection

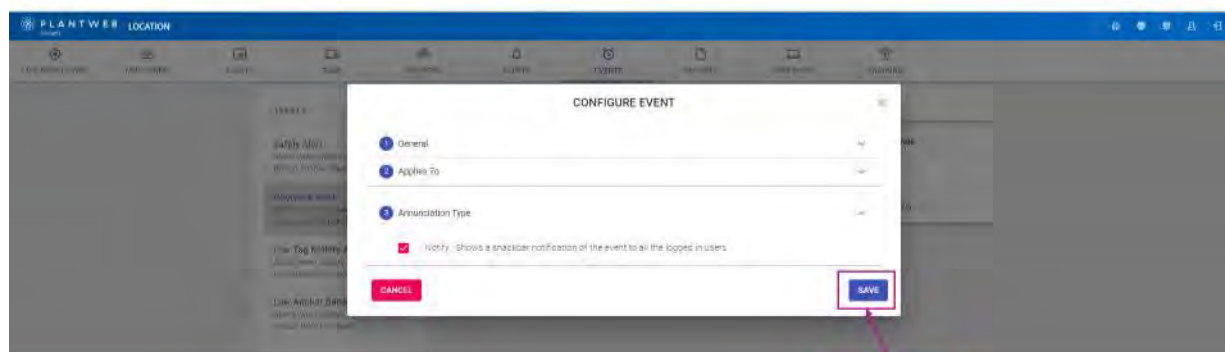


Choose the Zone the Asset or Group applies to for this Event

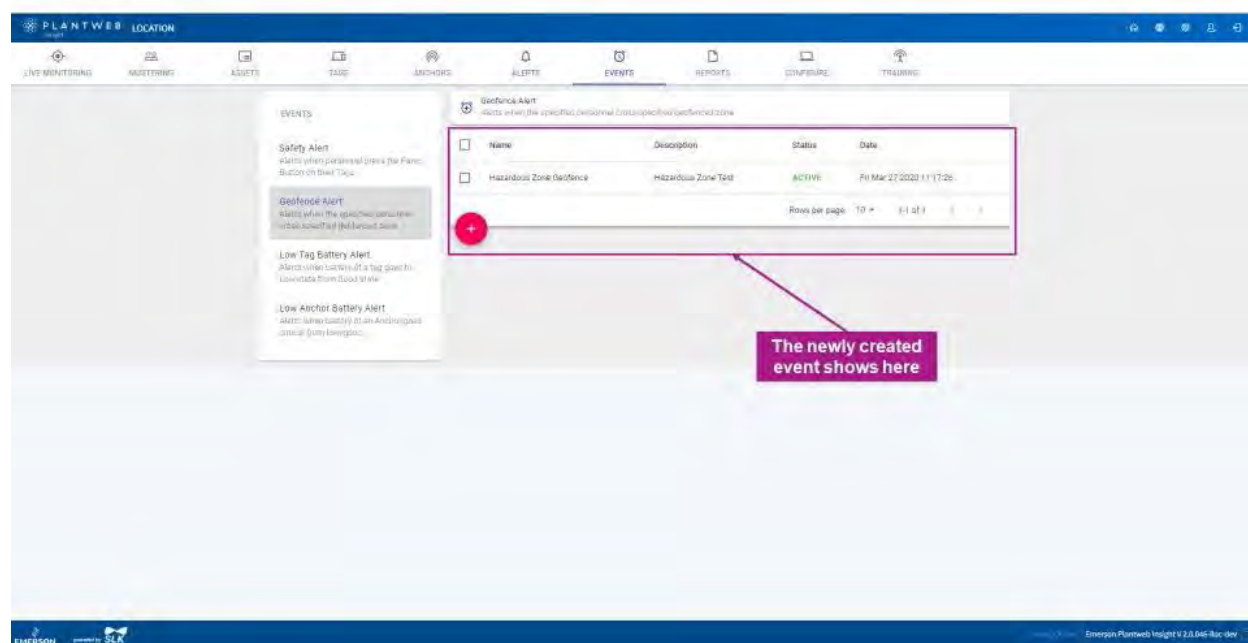


Click the Annunciation Type and check the box that applies.

At this time, Notify in the UI is the available Annunciation Type.

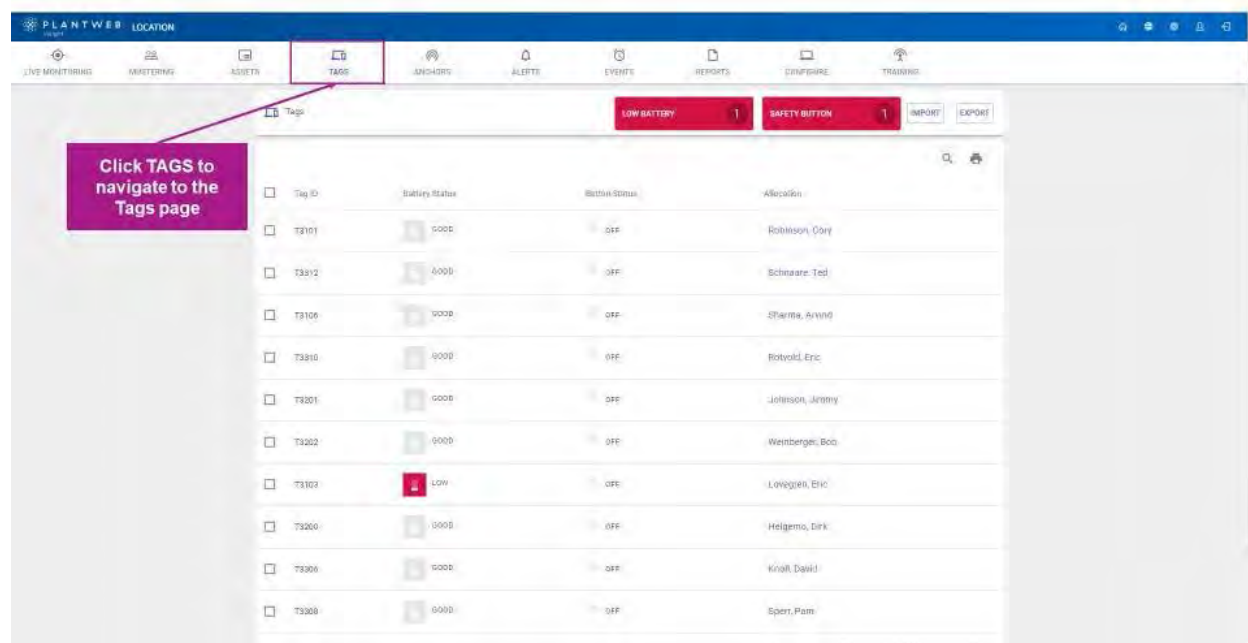


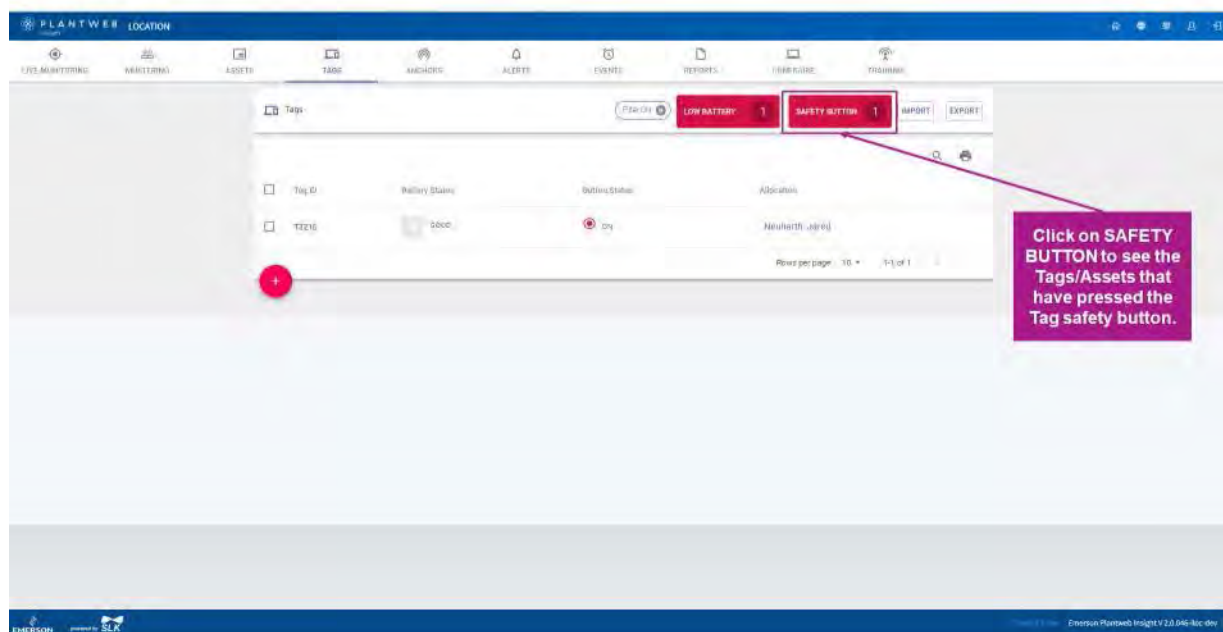
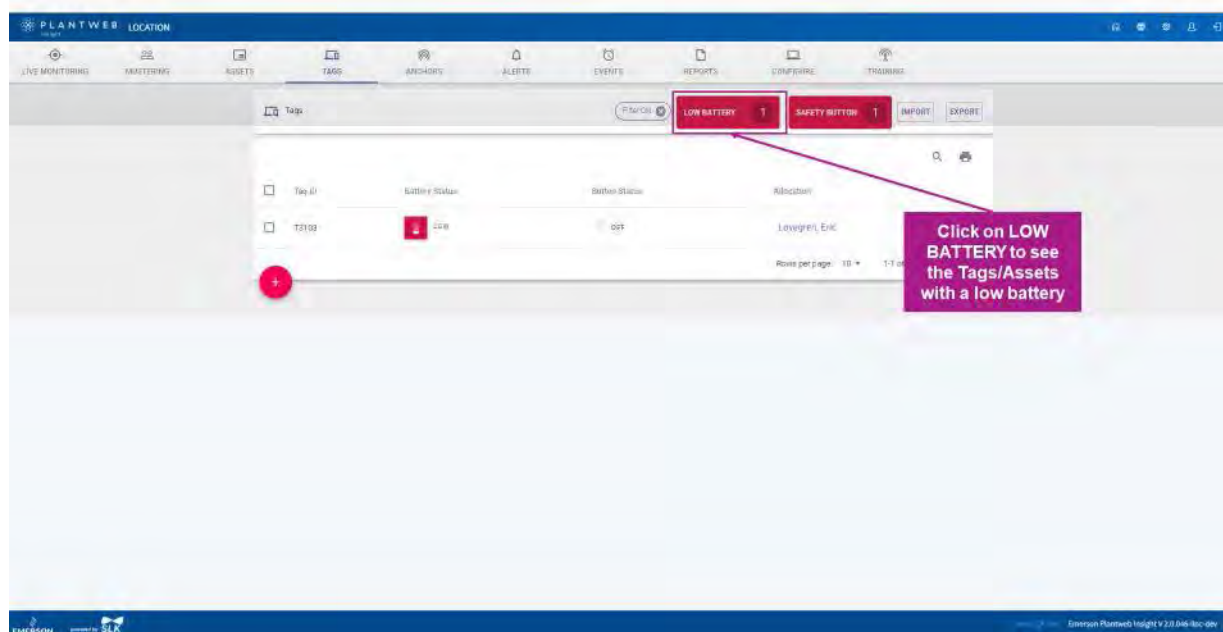
Click SAVE



Section 13: Plantweb Insight Location Application Operation and Maintenance

13.1 Tag and Anchor Navigation



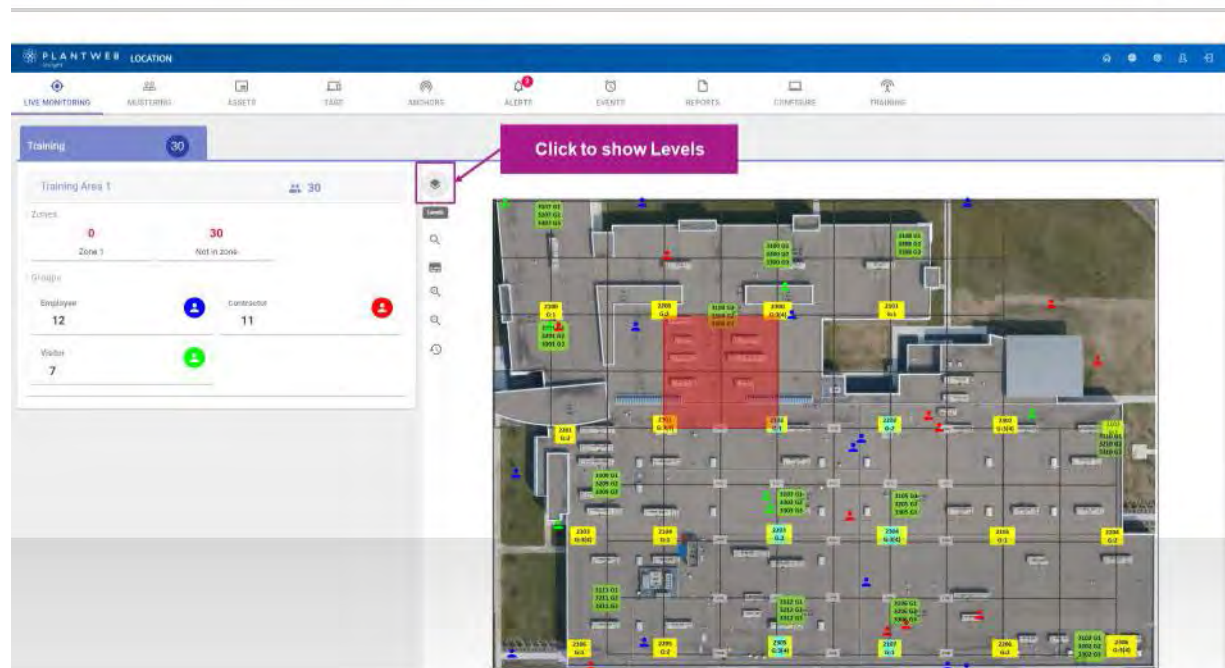
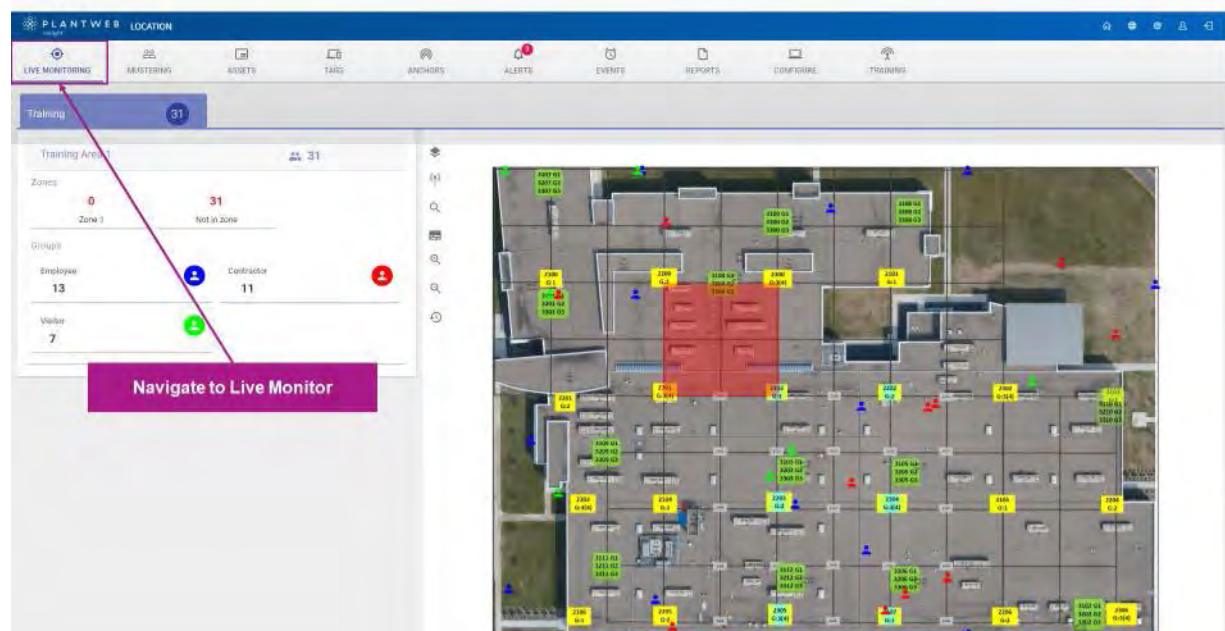


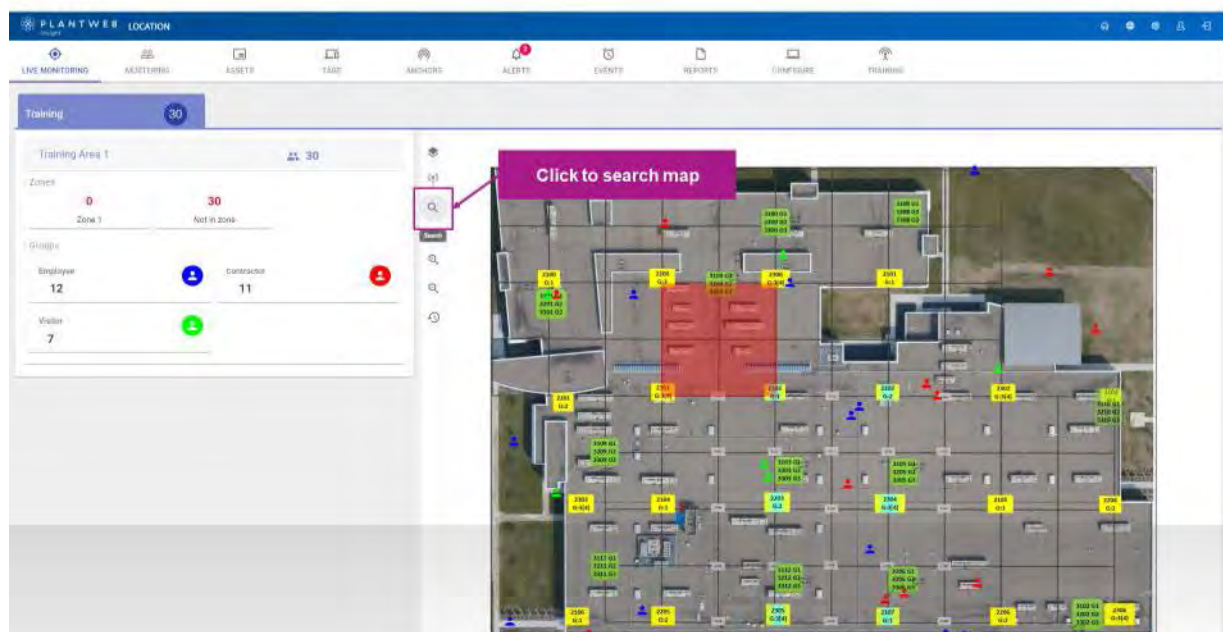
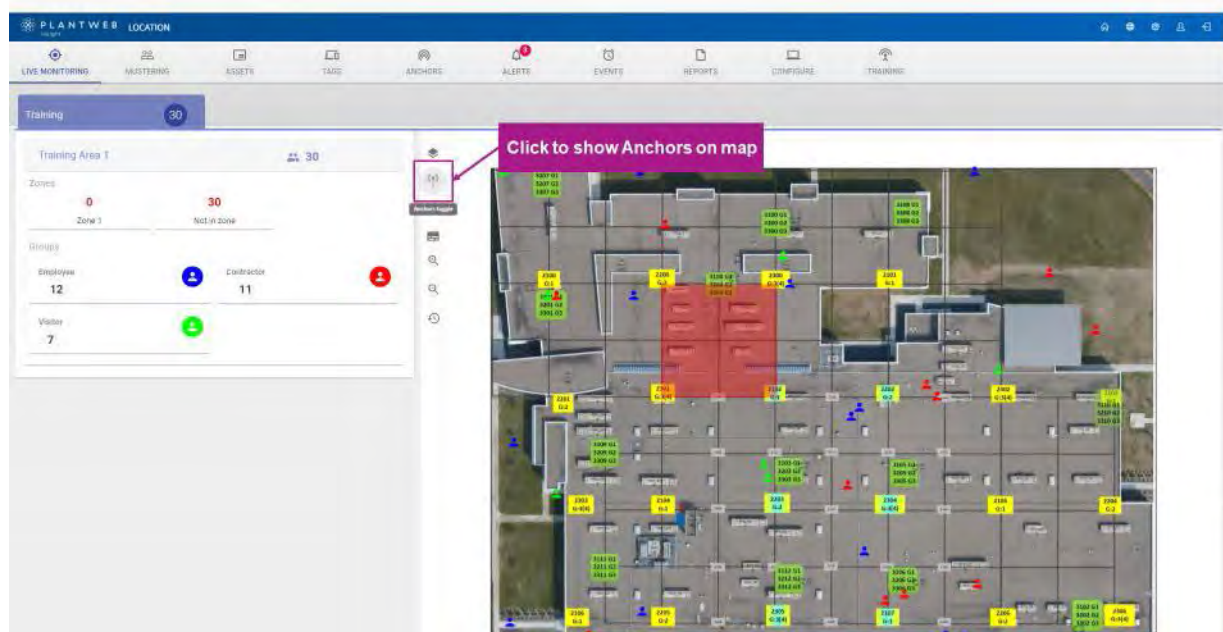
The first screenshot shows the Plantweb interface with the 'ANCHORS' tab selected in the top navigation bar. A callout box points to the 'ANCHORS' tab with the text: "Click ANCHORS to navigate to the Anchors page". Below the navigation bar, there is a table of anchors with columns for Tag Name, Mac Address, Area, and Battery Status. The table lists 10 anchors, all in 'Good' status except for one in 'Warning' status.

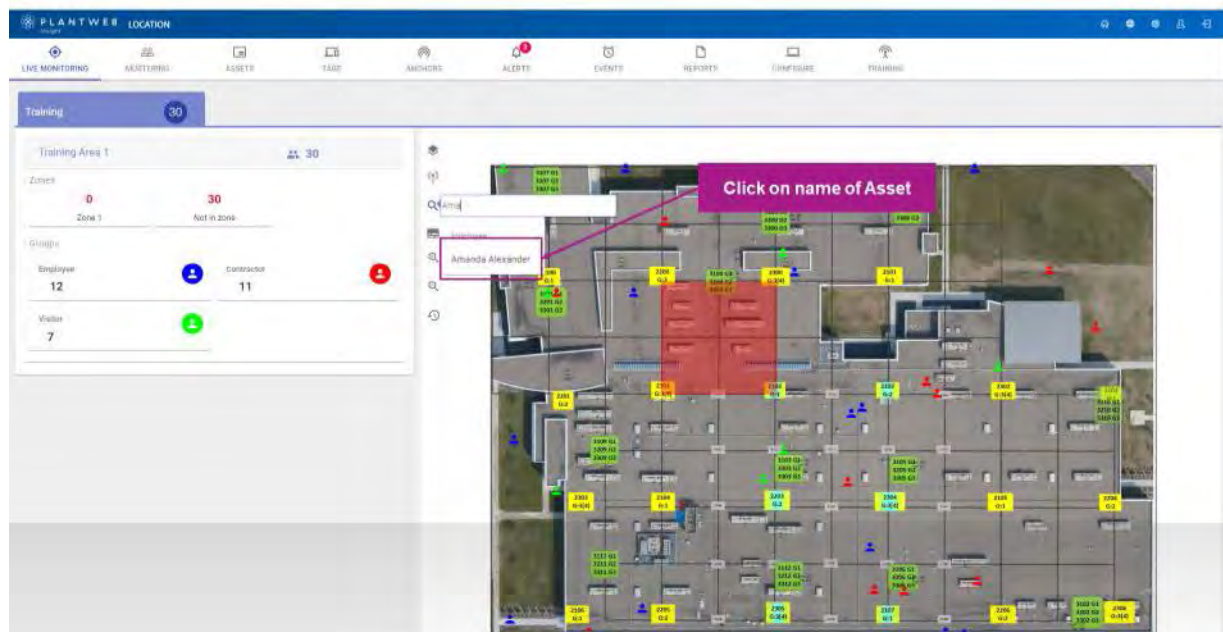
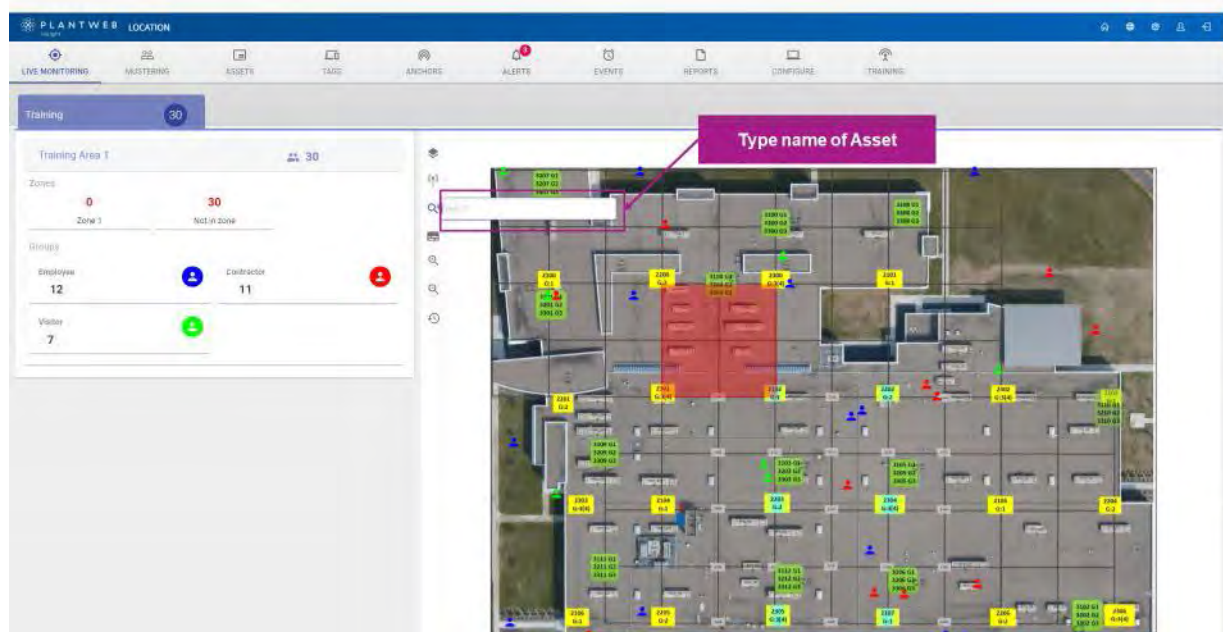
The second screenshot shows the 'ANCHOR LIST' view. A callout box points to the 'BATTERY LOW' and 'BATTERY CRITICAL' filters with the text: "Click on BATTERY LOW or BATTERY CRITICAL to see the Anchors with a low or critical battery". The table below shows the same 10 anchors, but only the one in 'Warning' status is displayed.

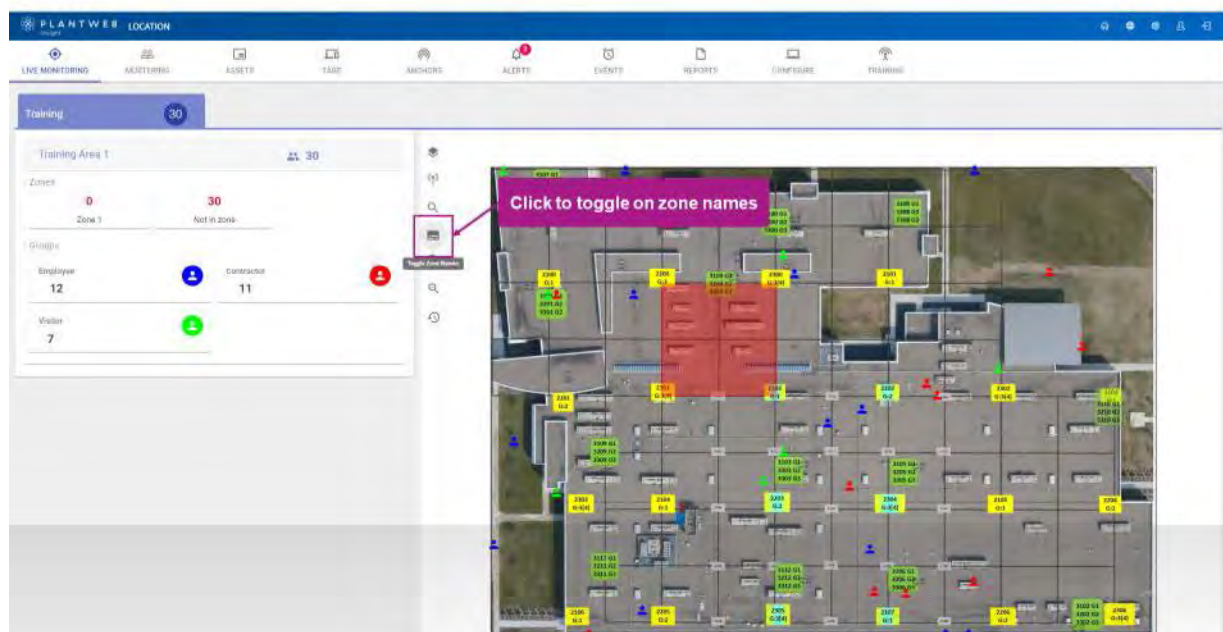
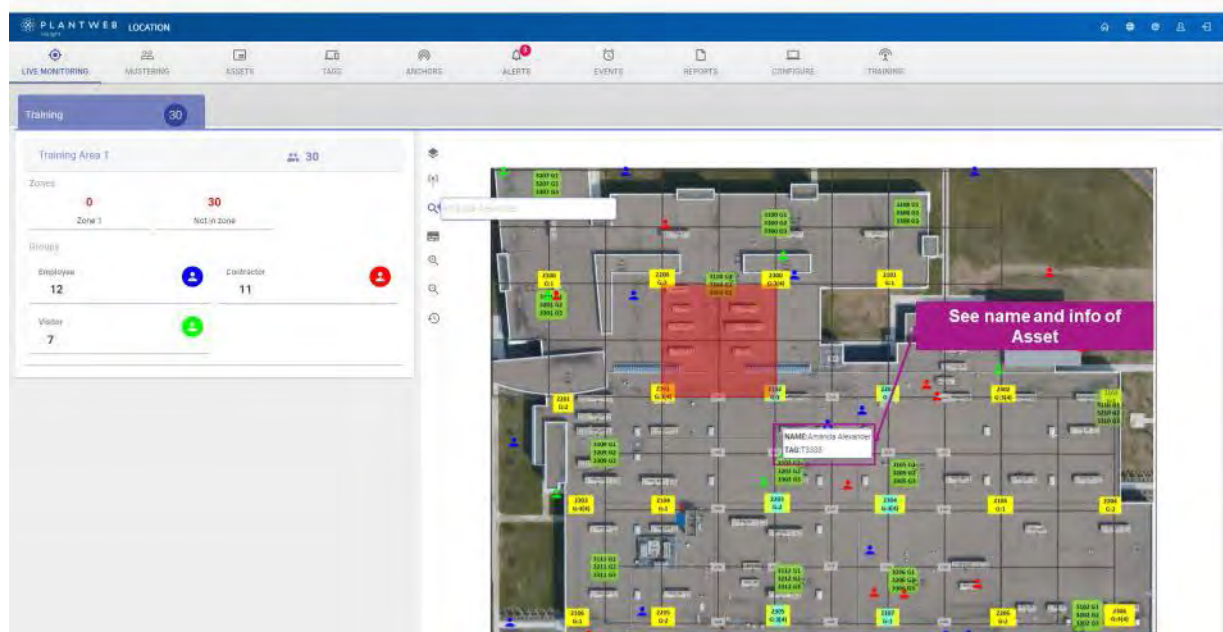
Tag Name	Mac Address	Area	Battery Status
2100	00-1B-1E-26-74-00-10-6A	Training Area 1	Good
2101	00-1B-1E-26-74-00-0F-FE	Training Area 1	Good
2102	00-1B-1E-26-74-00-0F-ED	Training Area 1	Good
2103	00-1B-1E-26-74-00-10-6B	Training Area 1	Good
2104	00-1B-1E-26-74-00-10-67	Training Area 1	Warning
2105	00-1B-1E-26-74-00-10-66	Training Area 1	Good
2106	00-1B-1E-26-74-00-10-65	Training Area 1	Good
2107	00-1B-1E-26-74-00-0F-A7	Training Area 1	Good
2200	00-1B-1E-26-74-00-10-61	Training Area 1	Good
2201	00-1B-1E-26-74-00-10-63	Training Area 1	Good

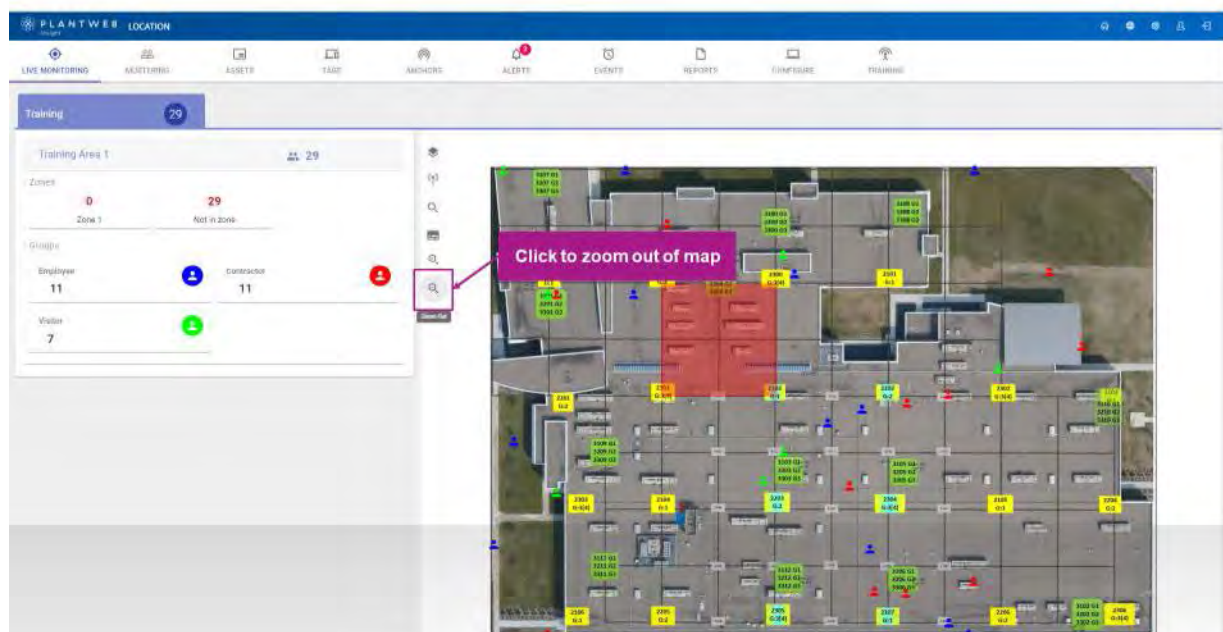
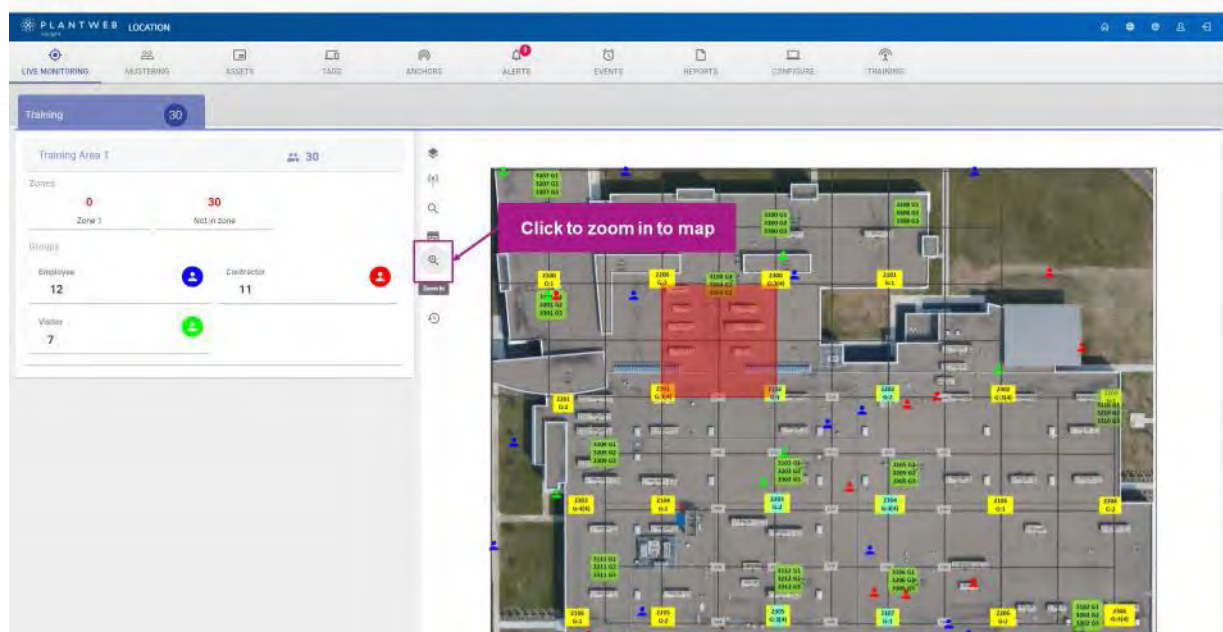
13.3 Live Monitoring

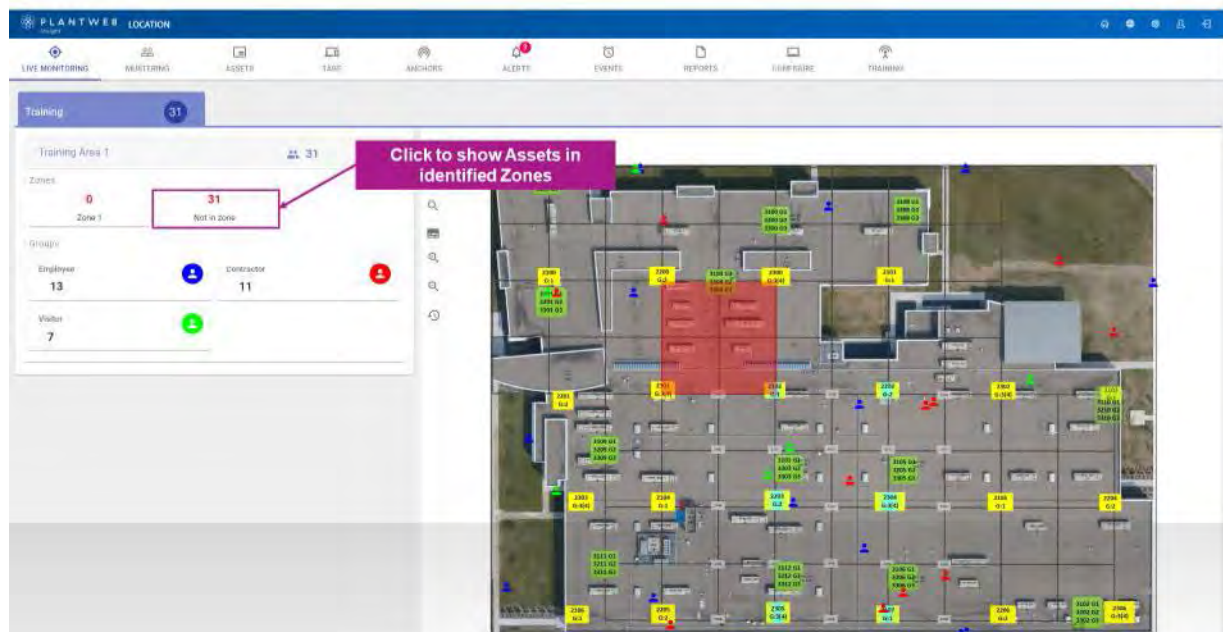
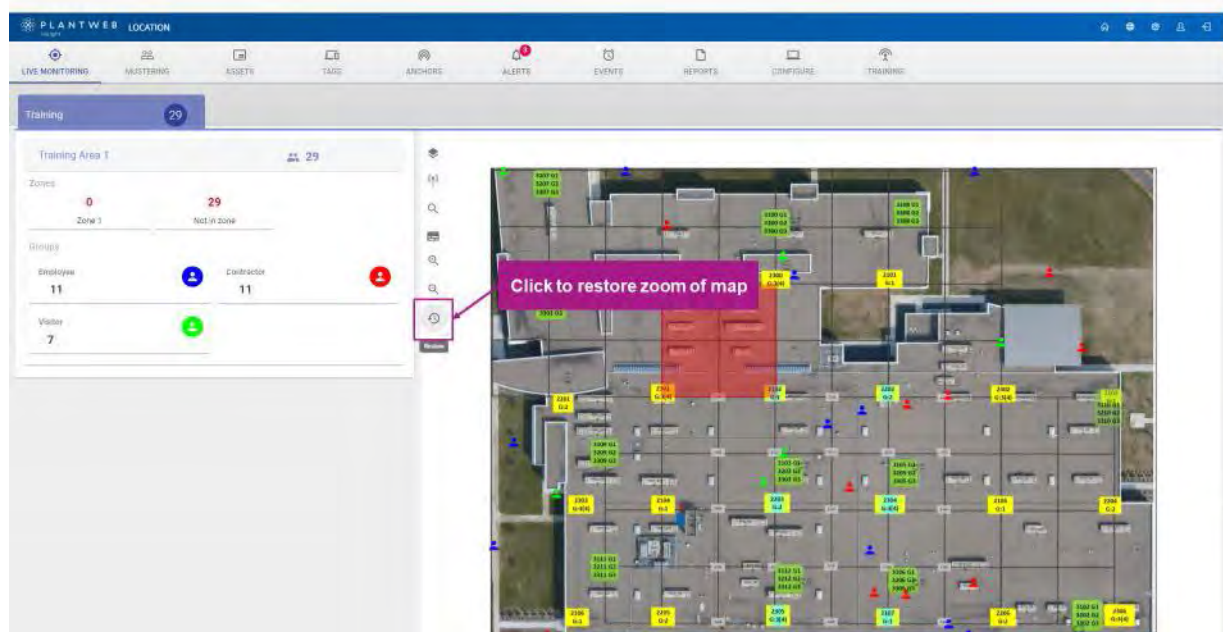


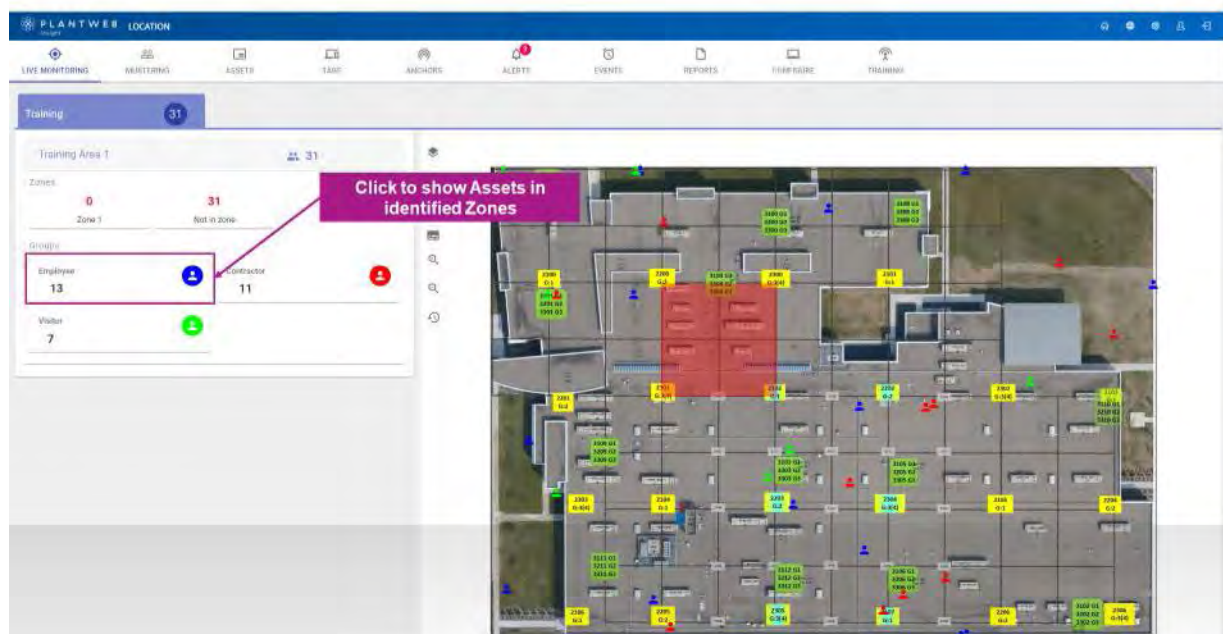
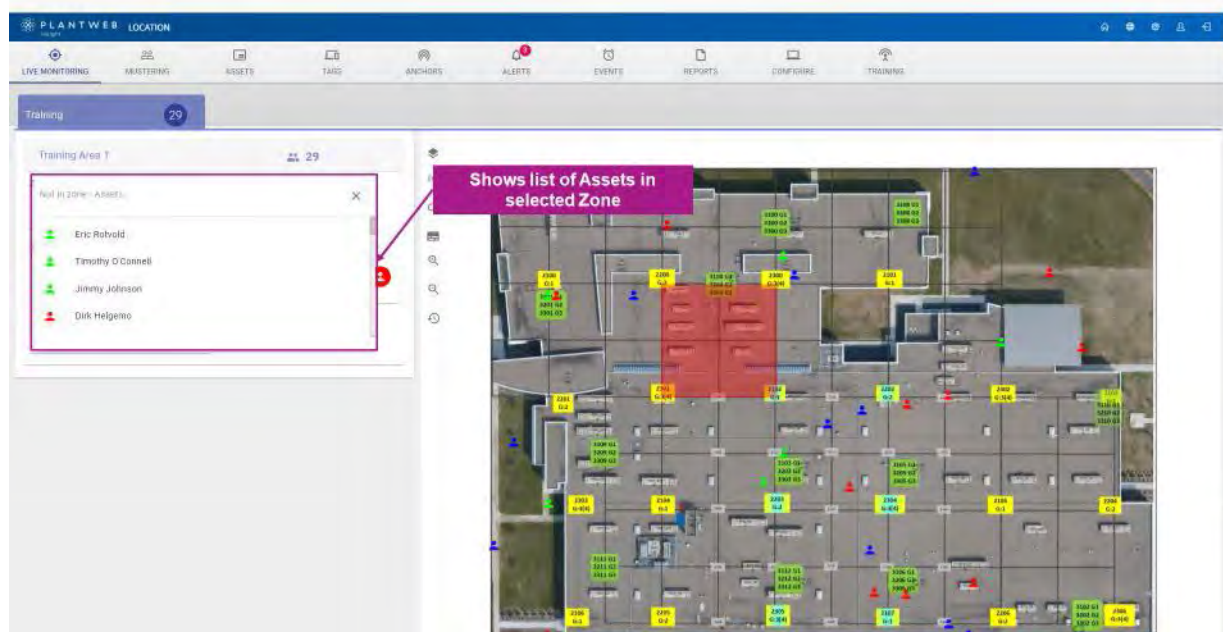


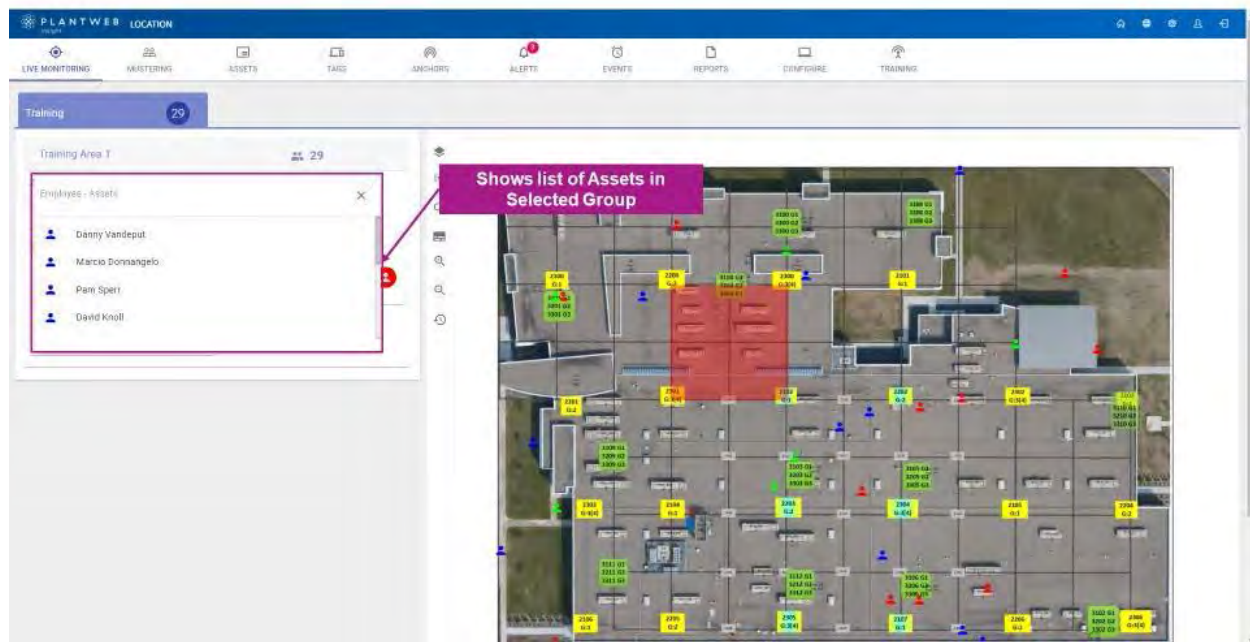




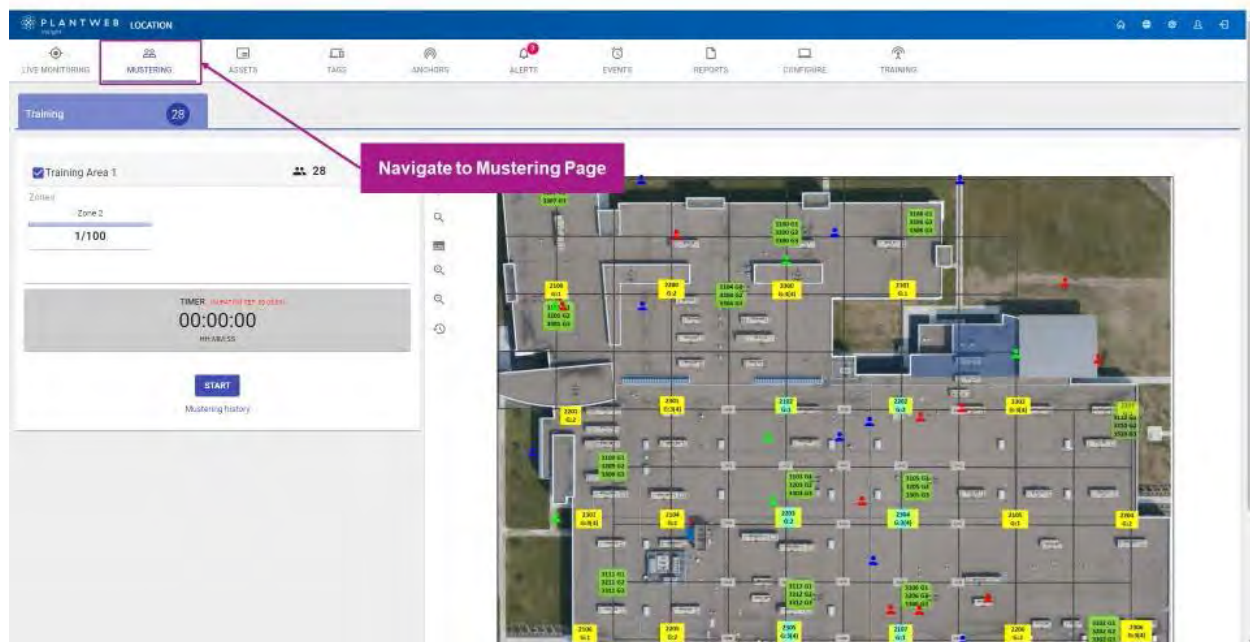


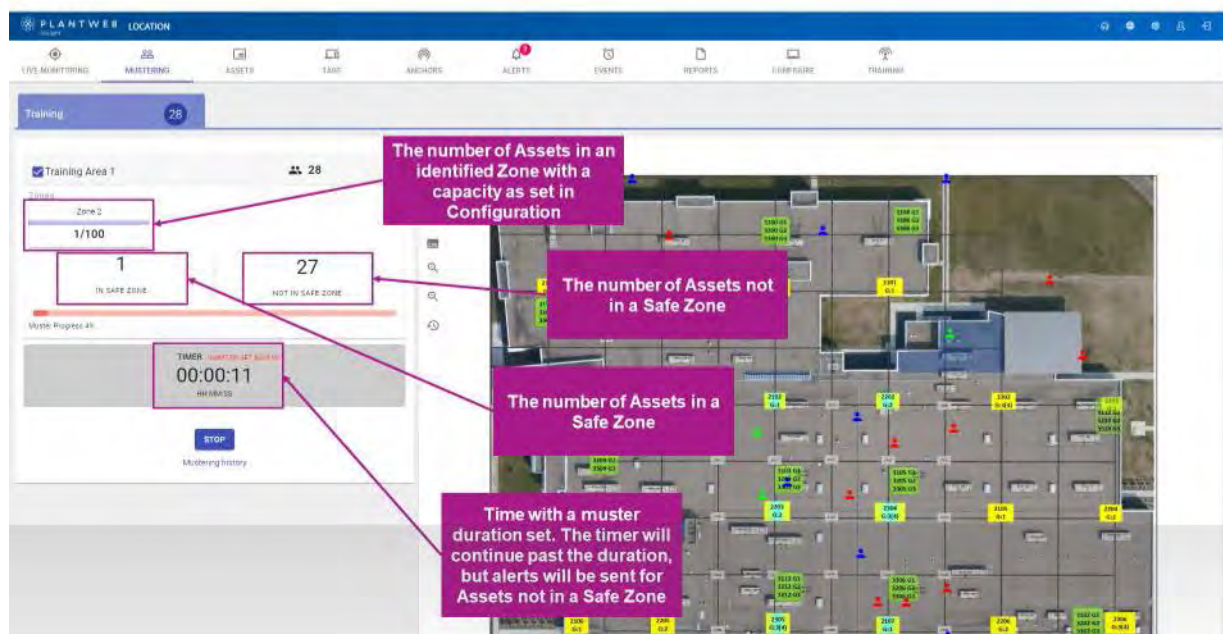
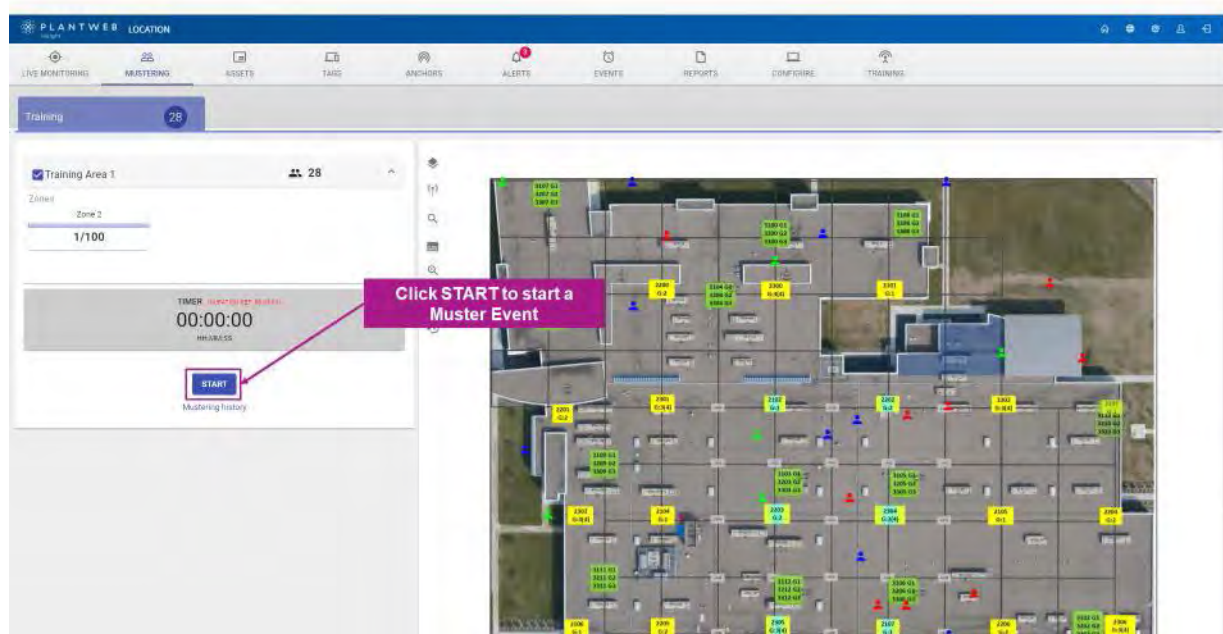


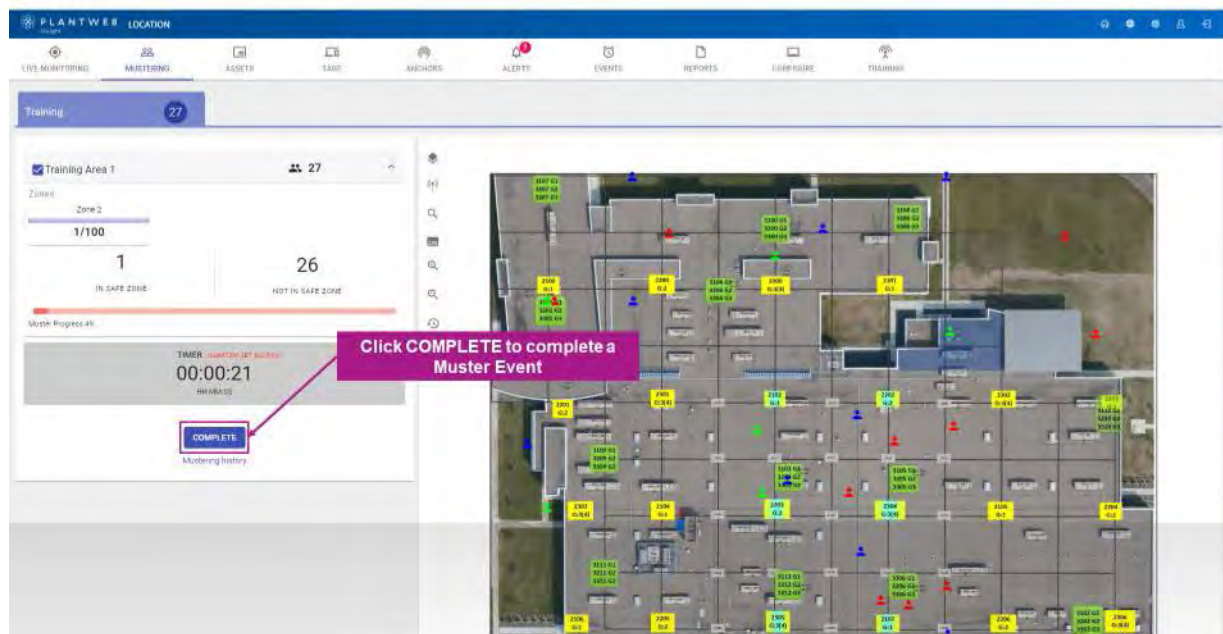
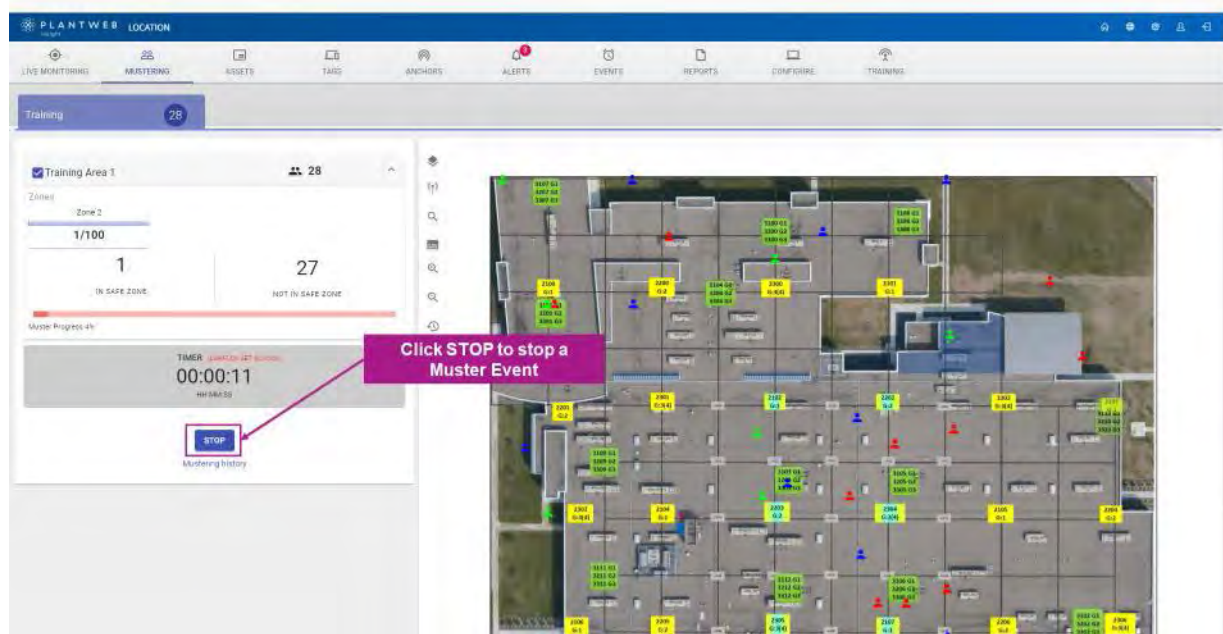


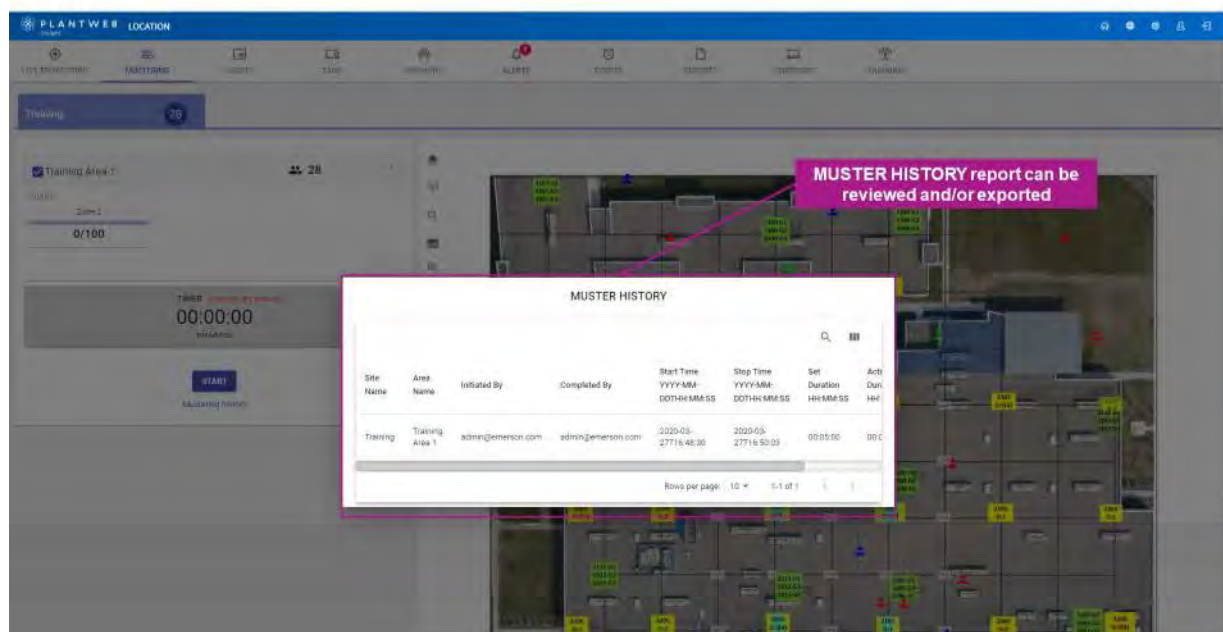
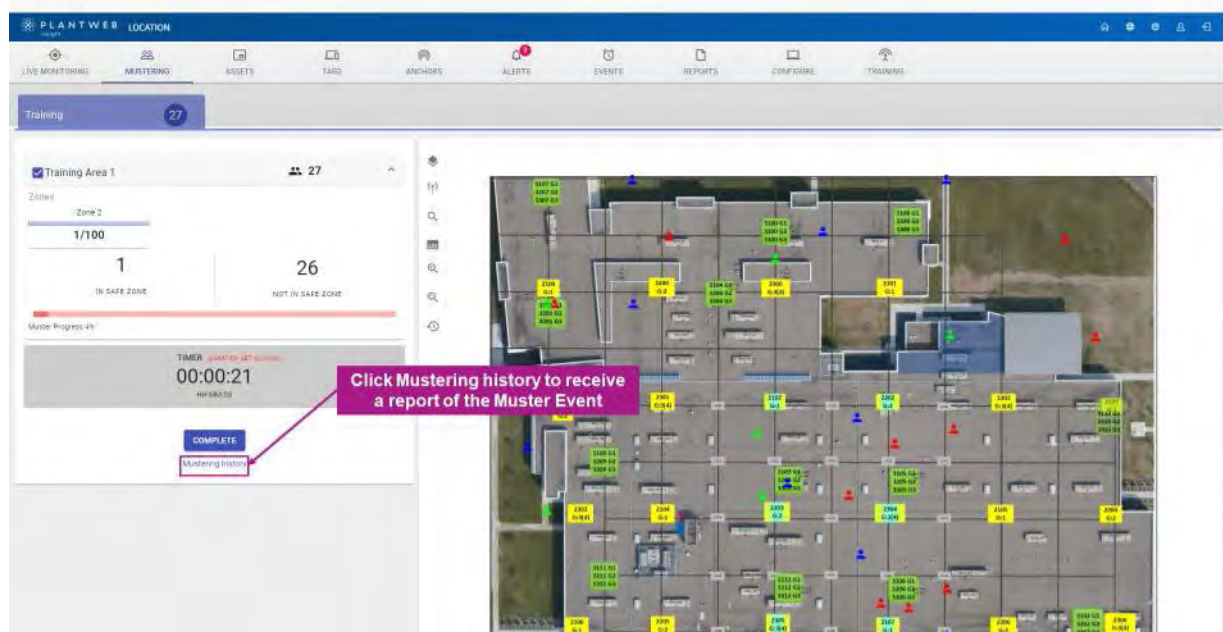


13.4 Safety Mustering

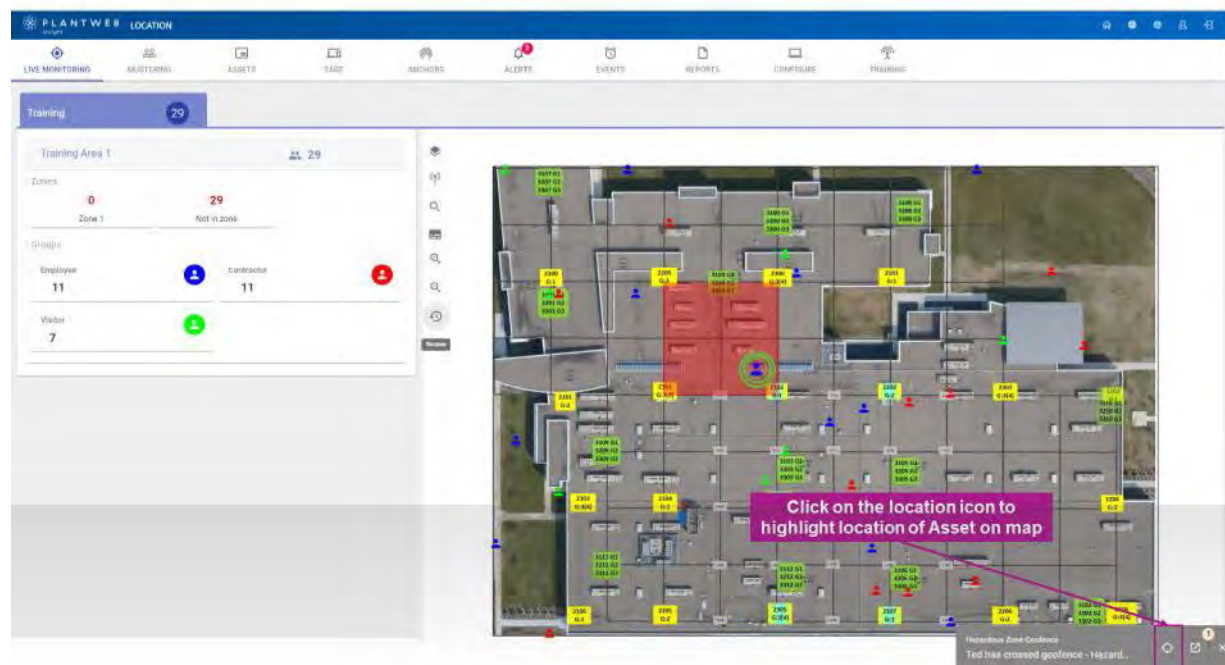
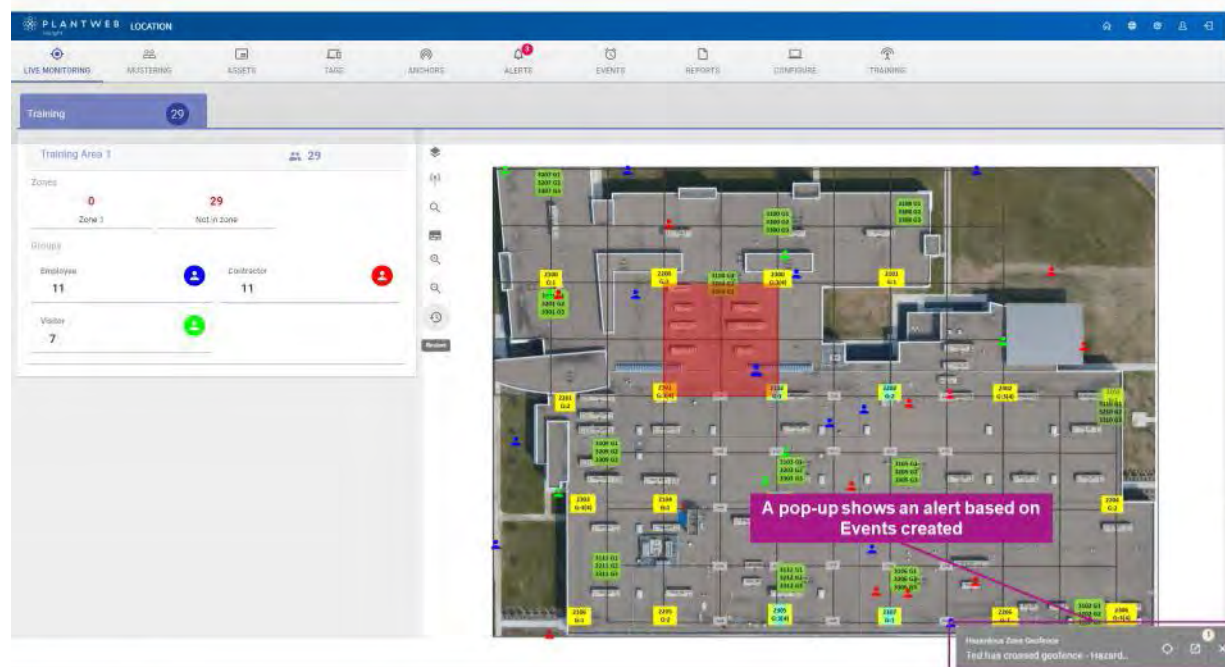


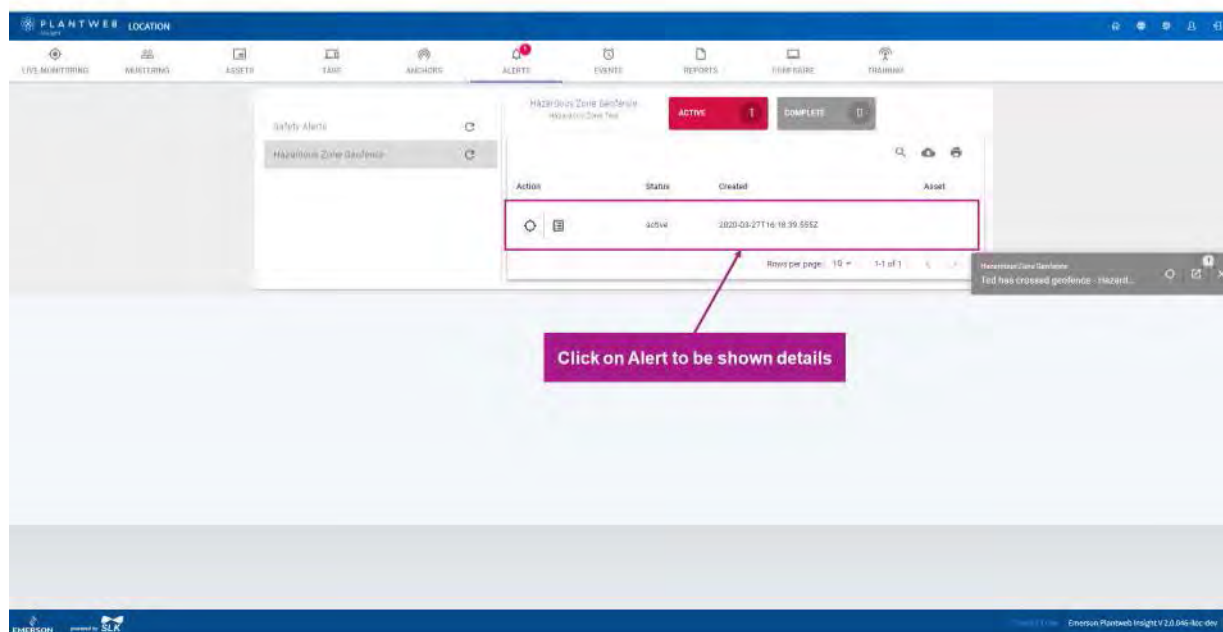
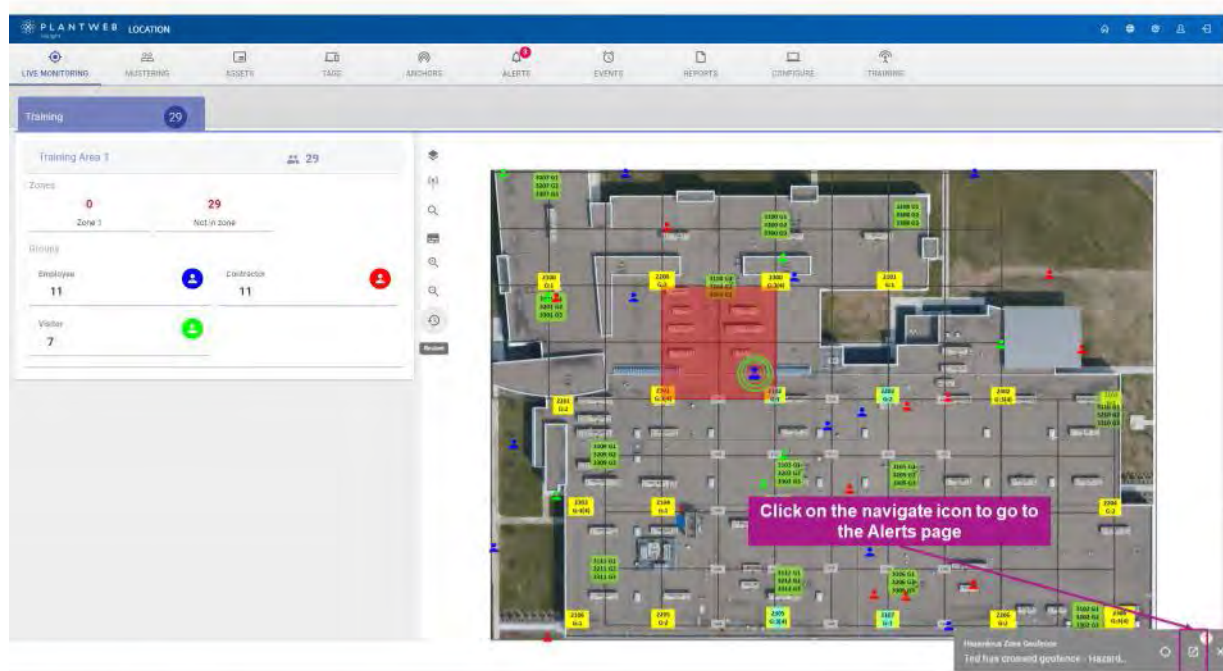


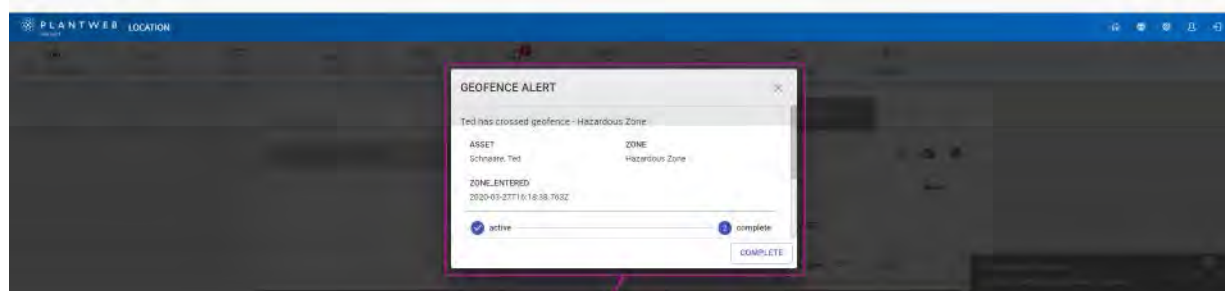




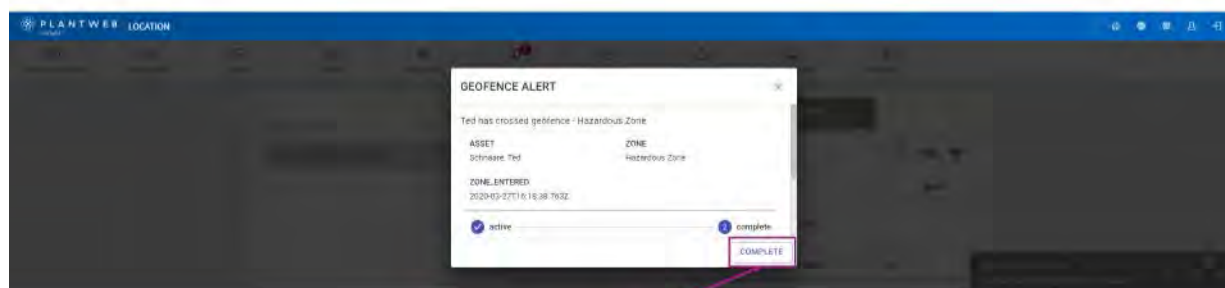
13.5 Alert Navigation



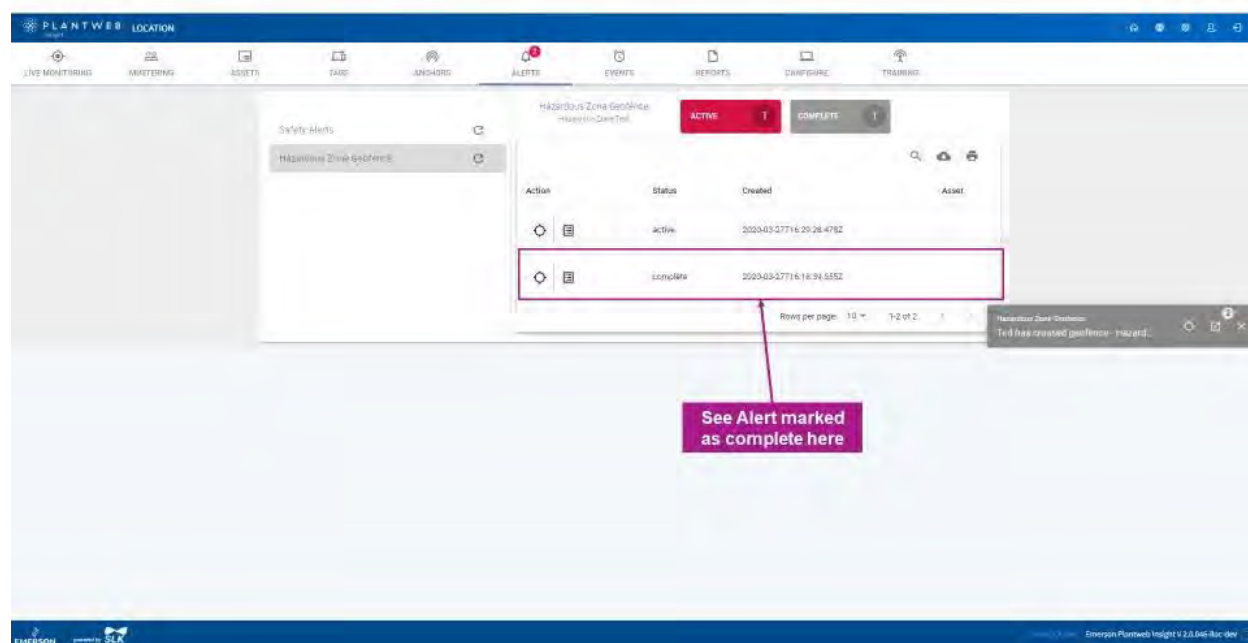




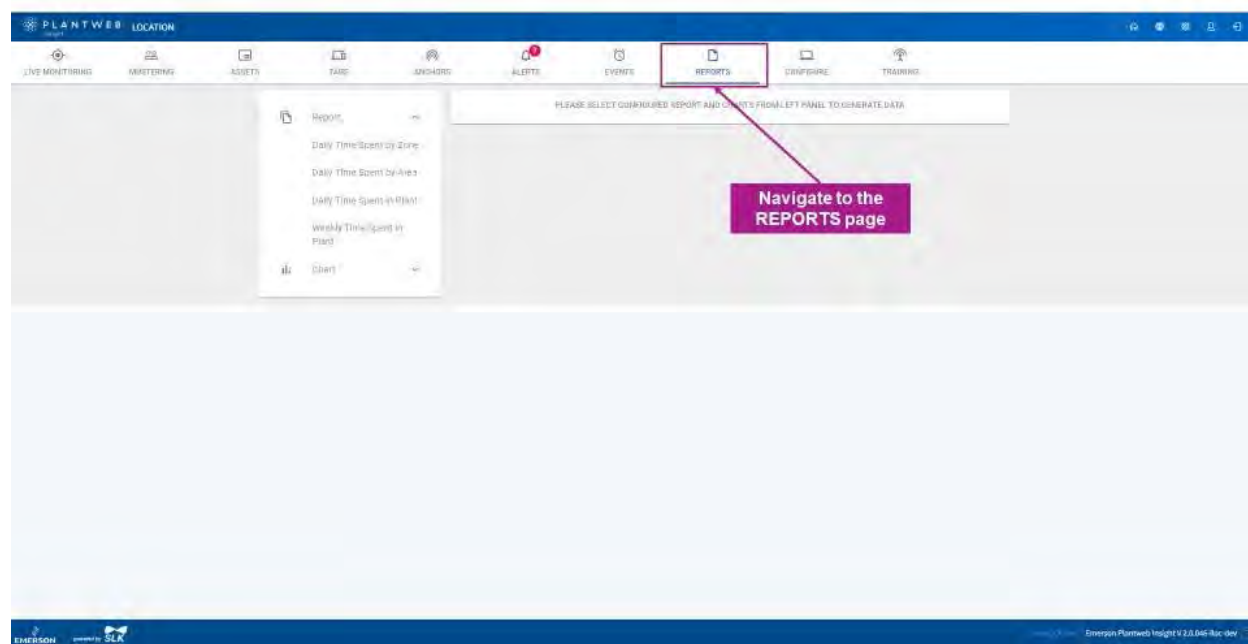
See details for the Alert

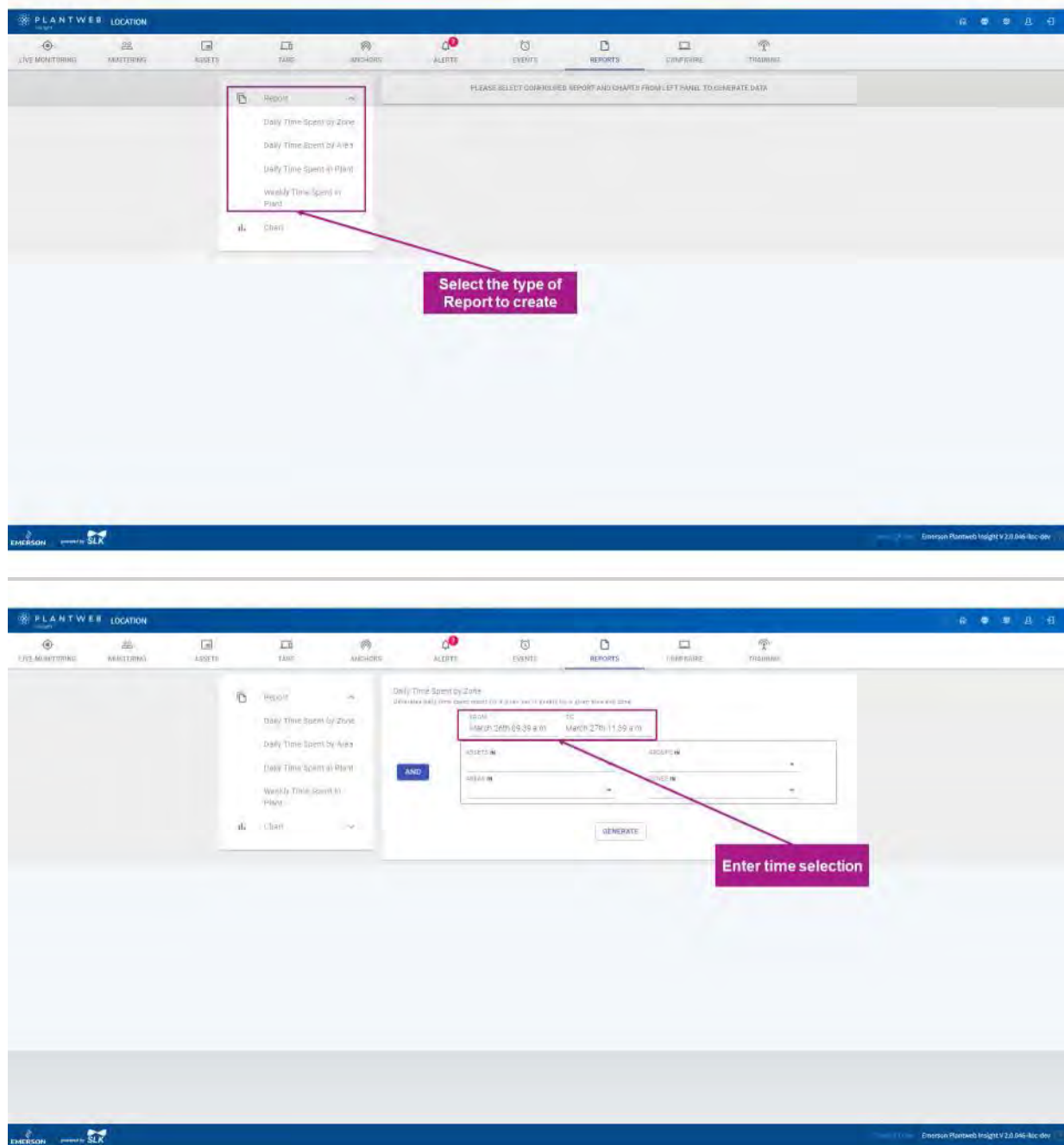


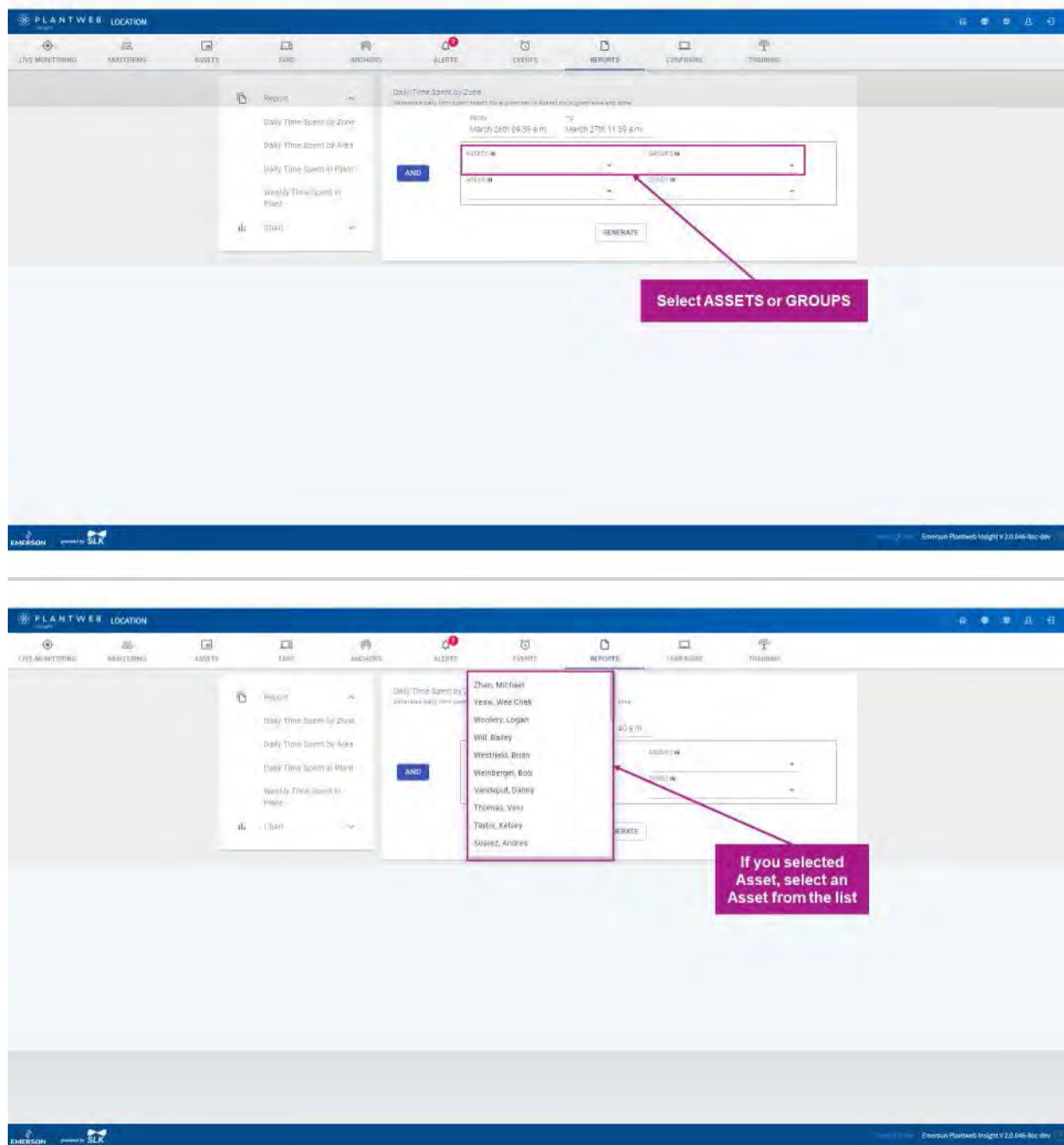
Click COMPLETE to acknowledge the Alert

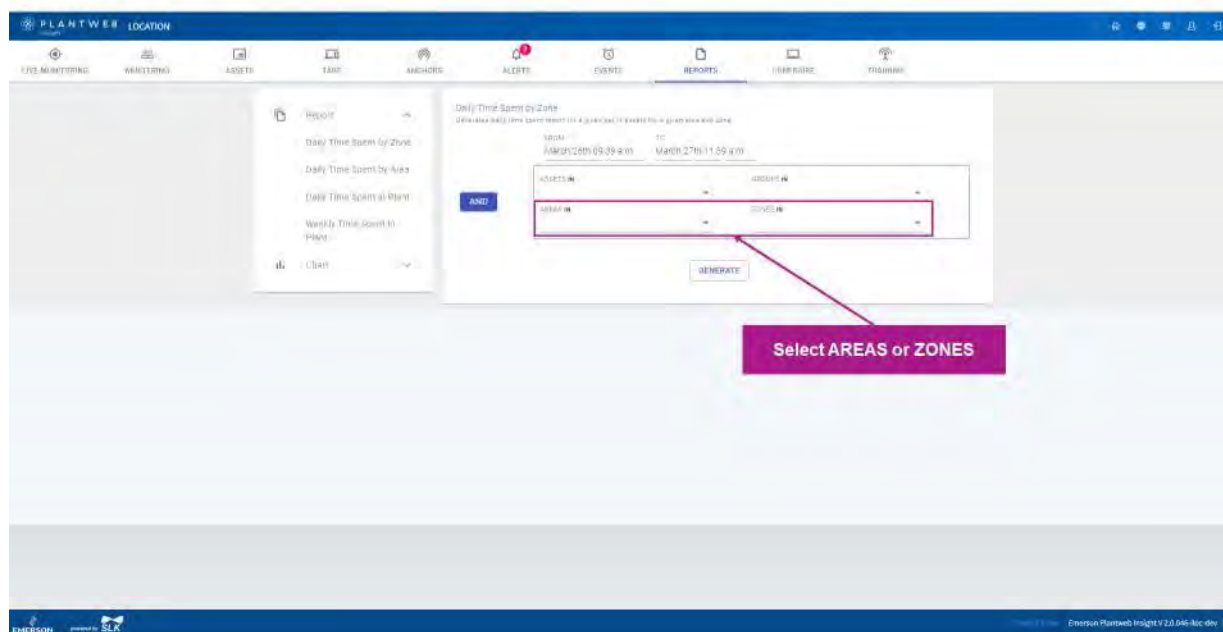
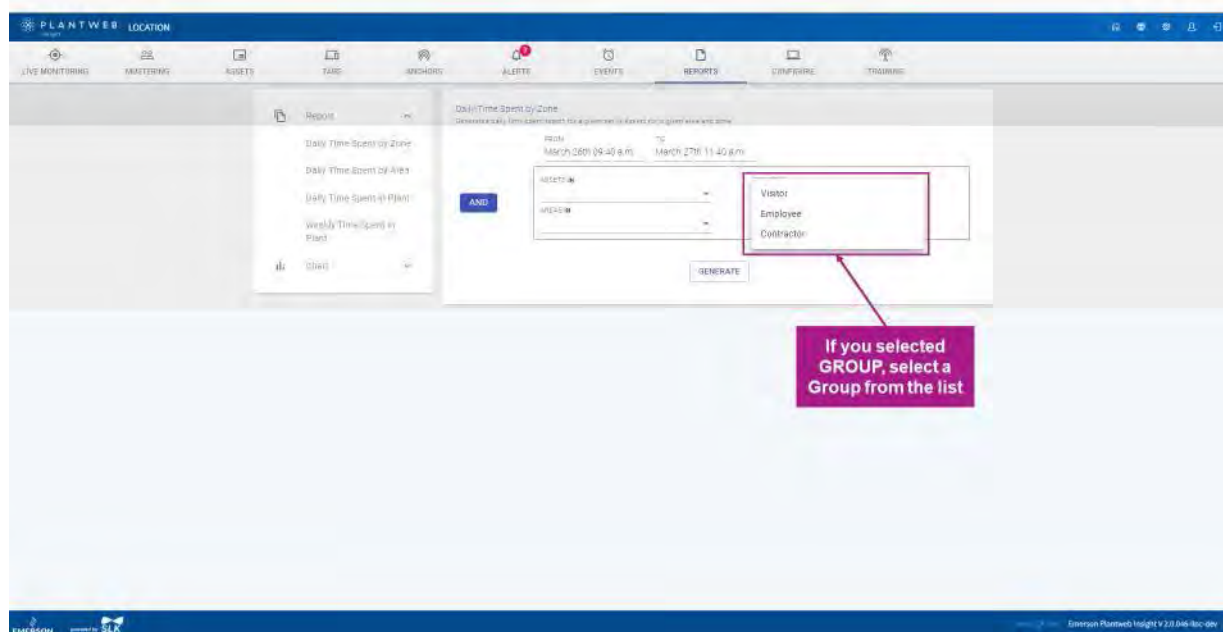


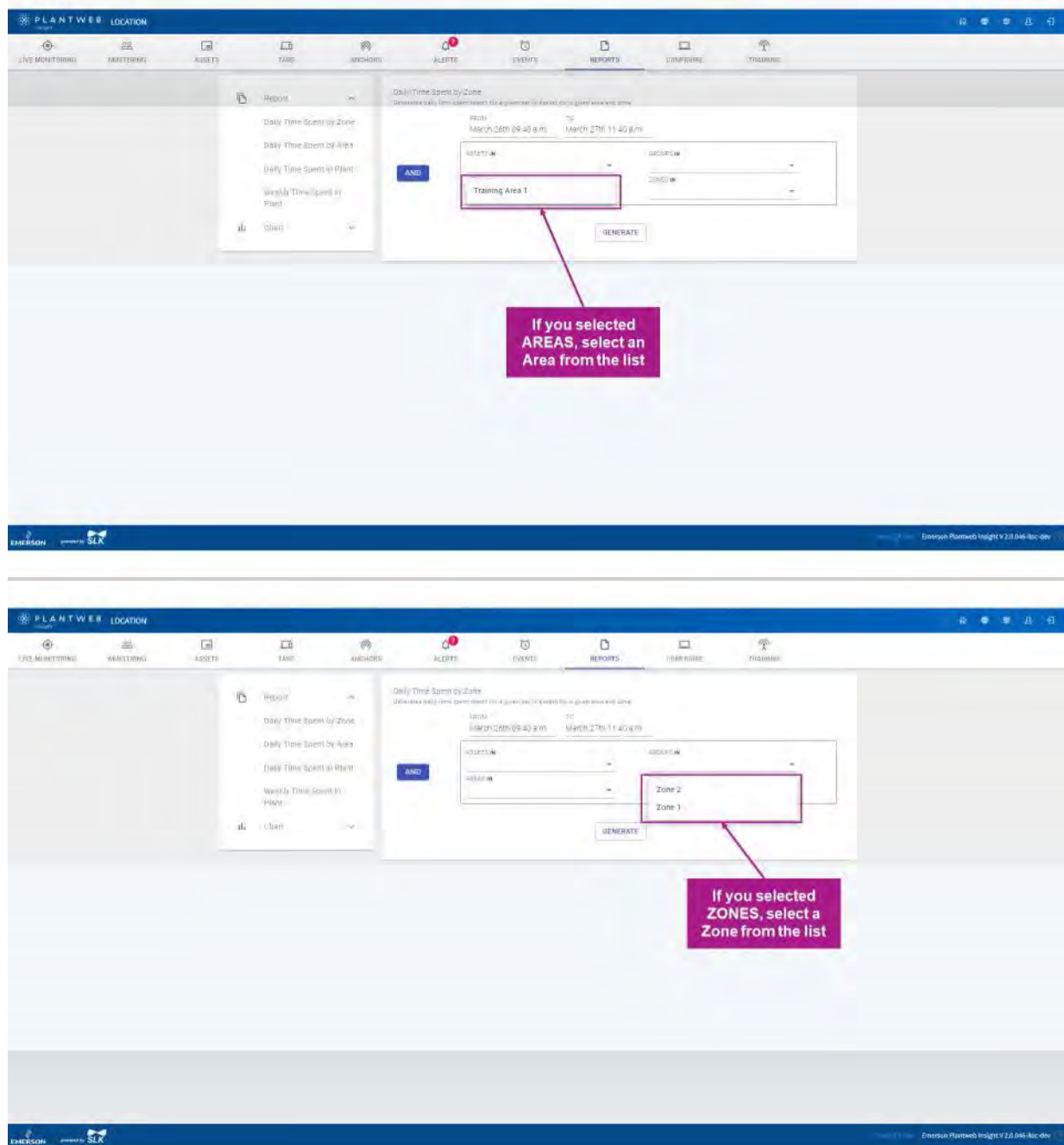
13.6 Reports and Charts Navigation

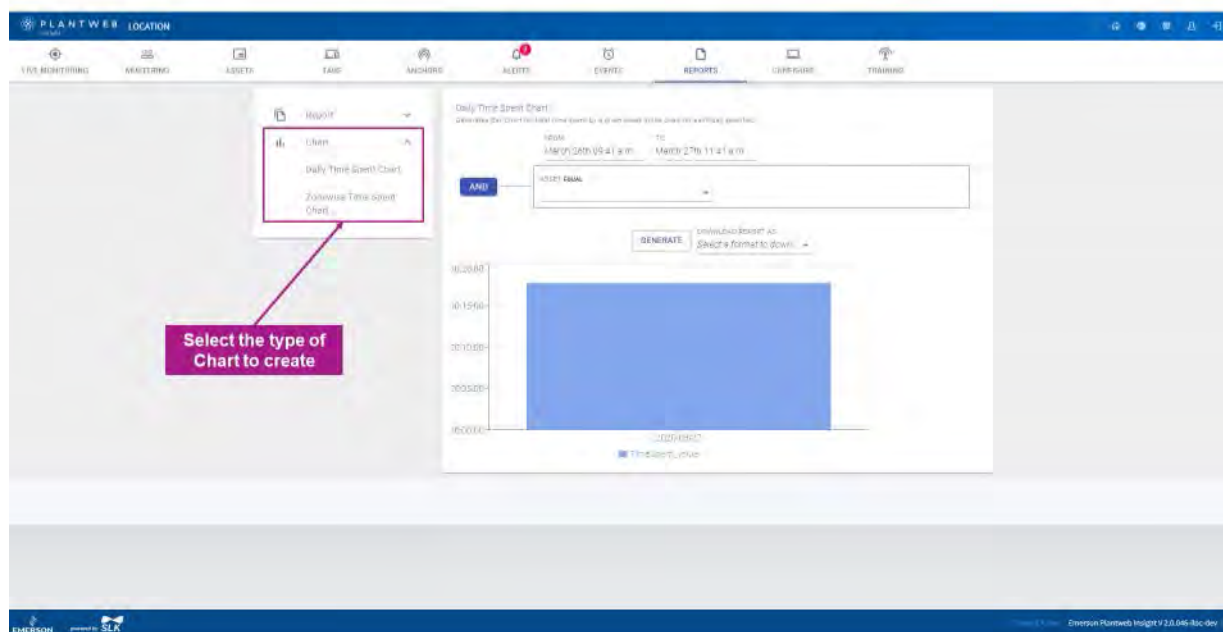
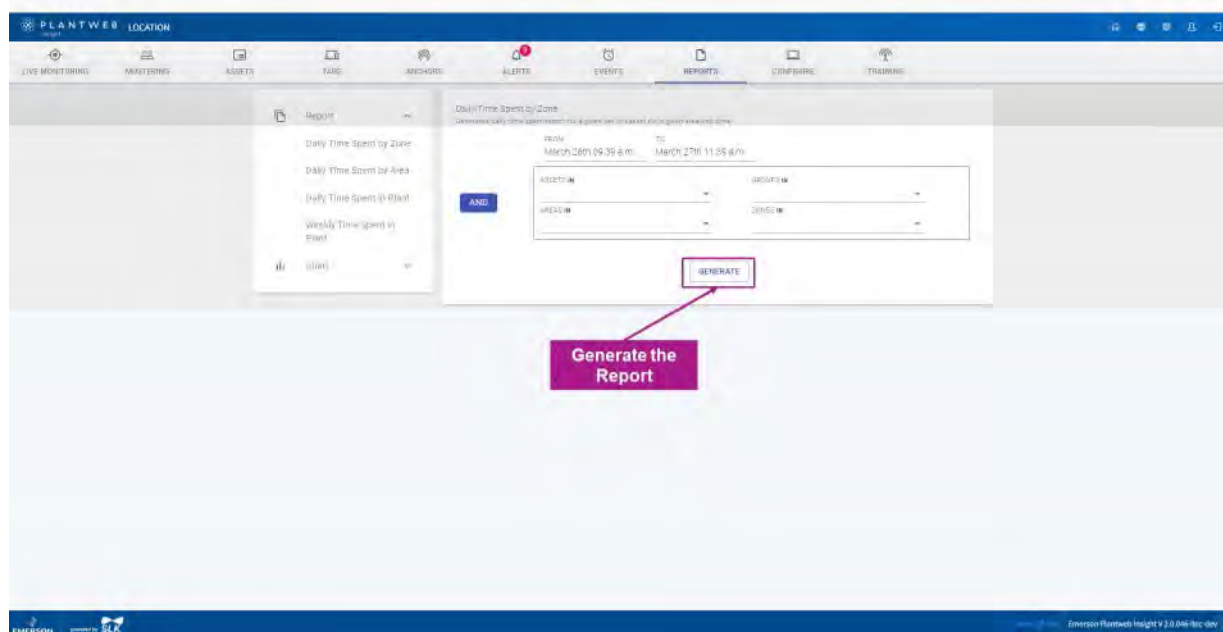


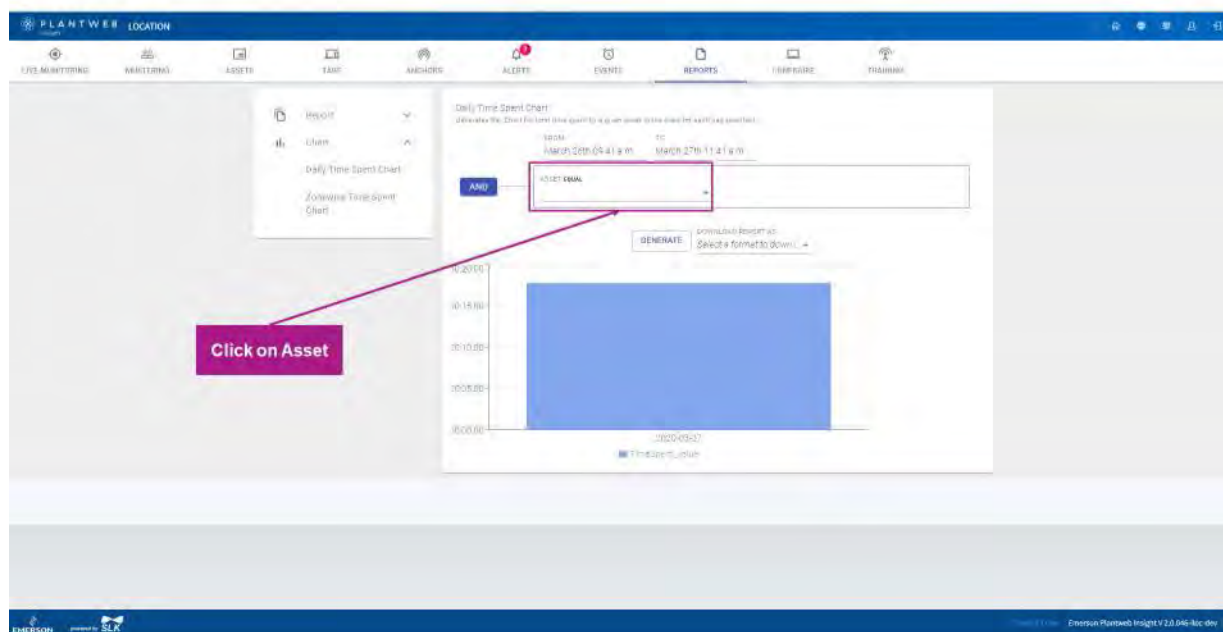
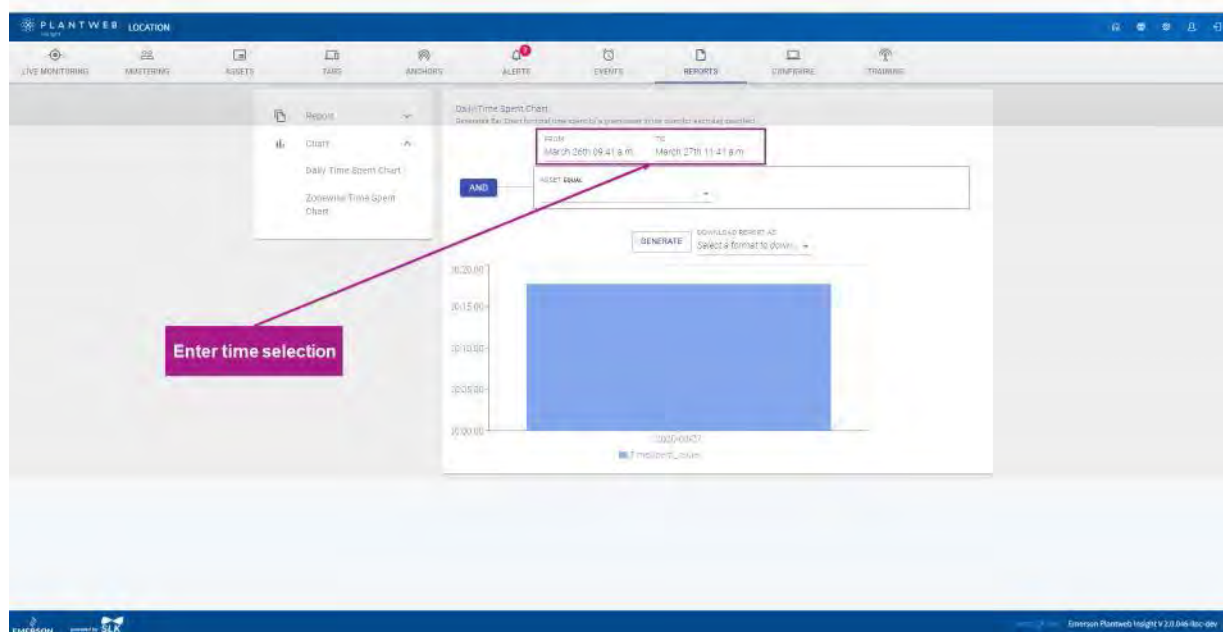


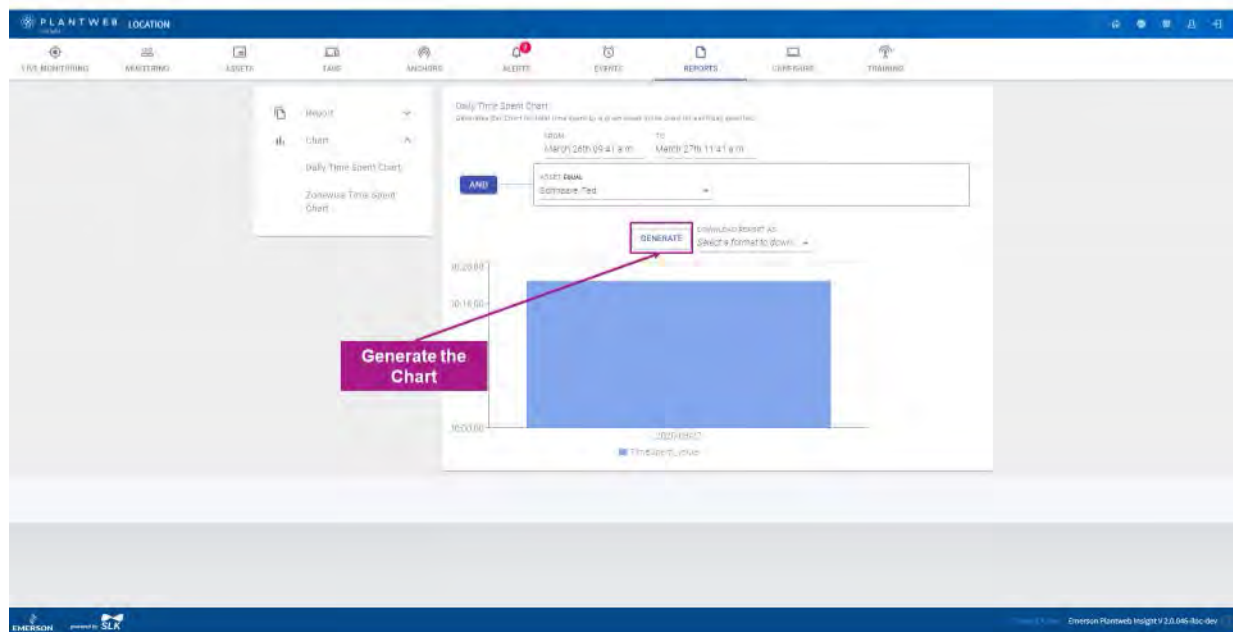
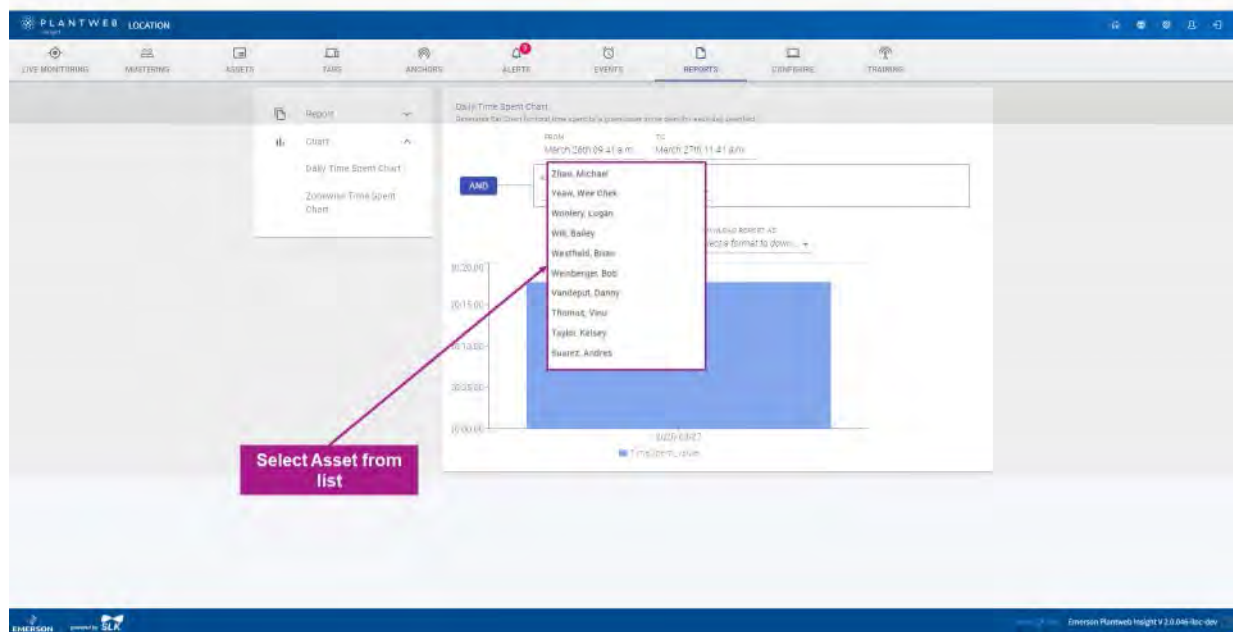




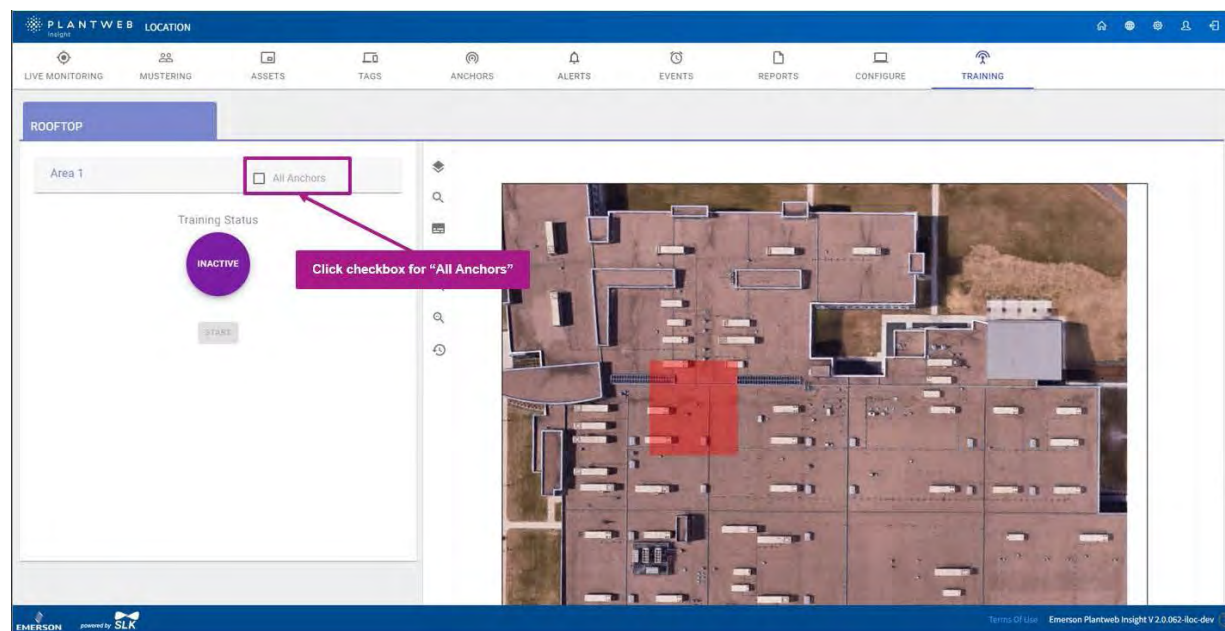
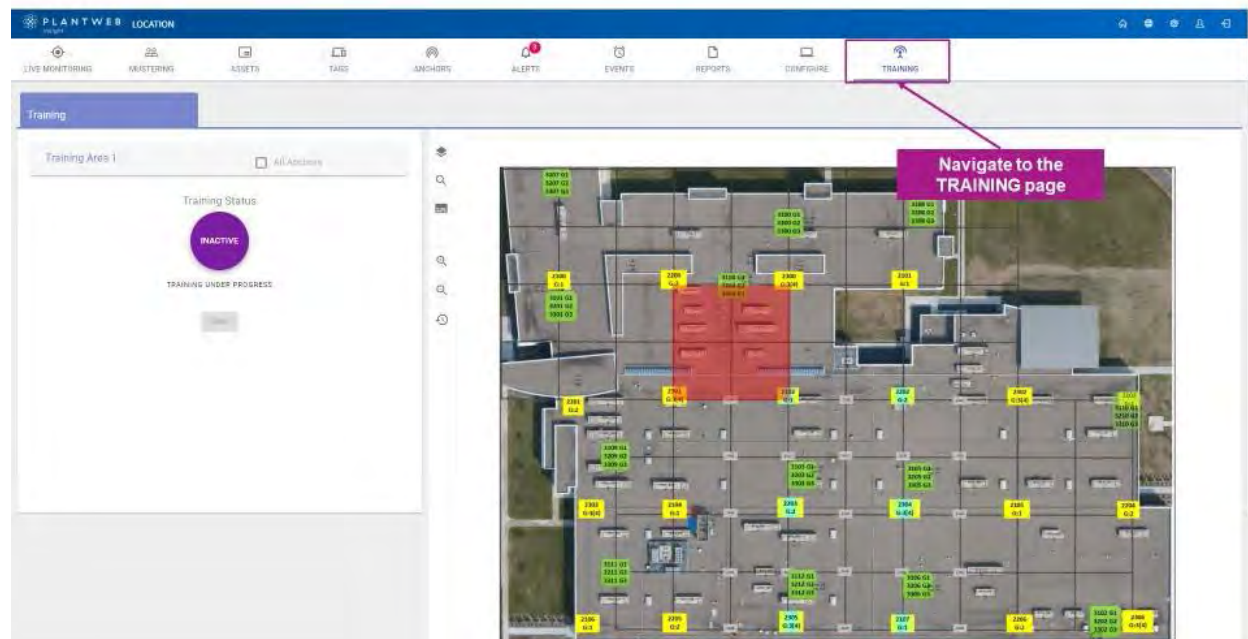


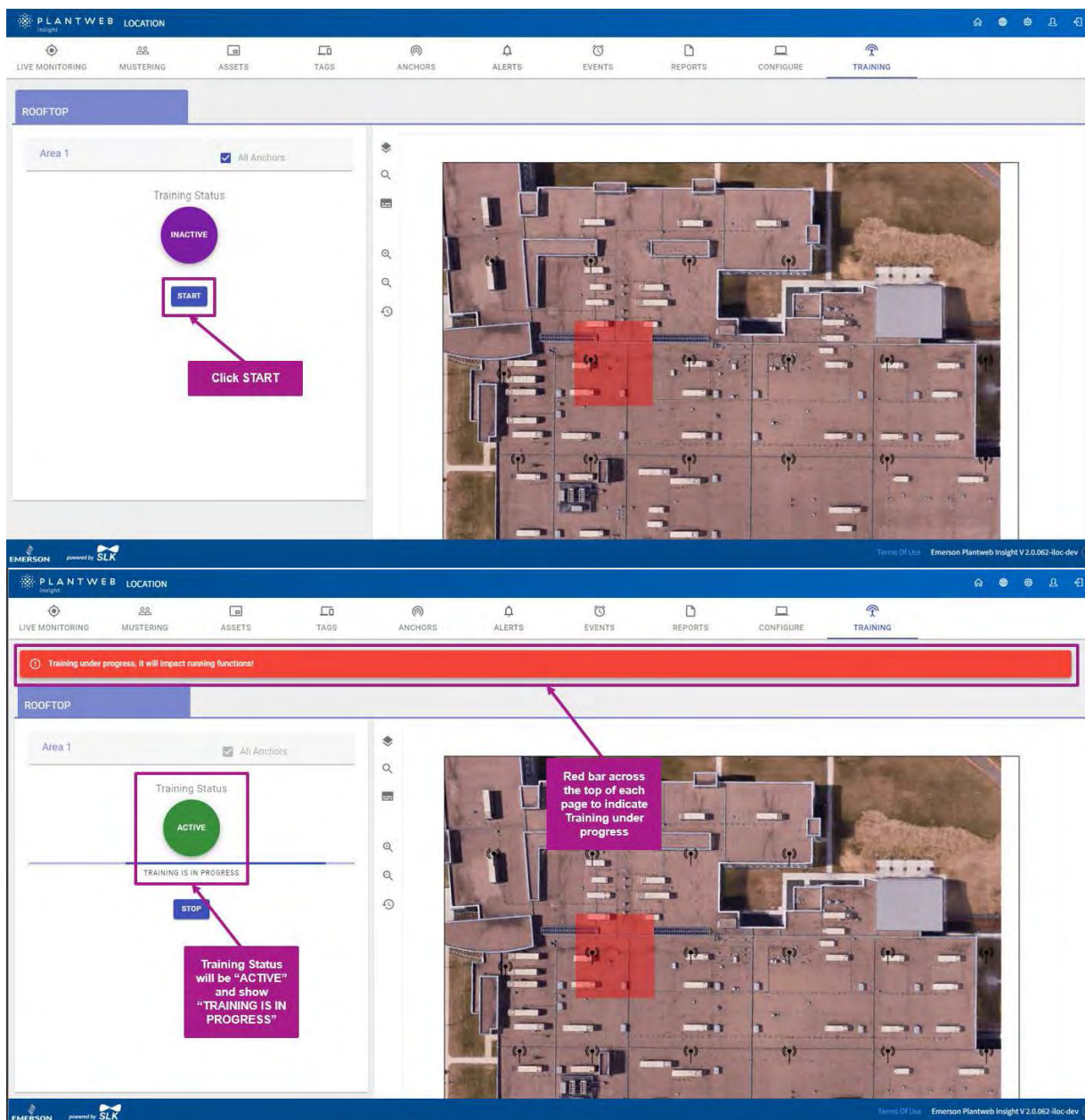


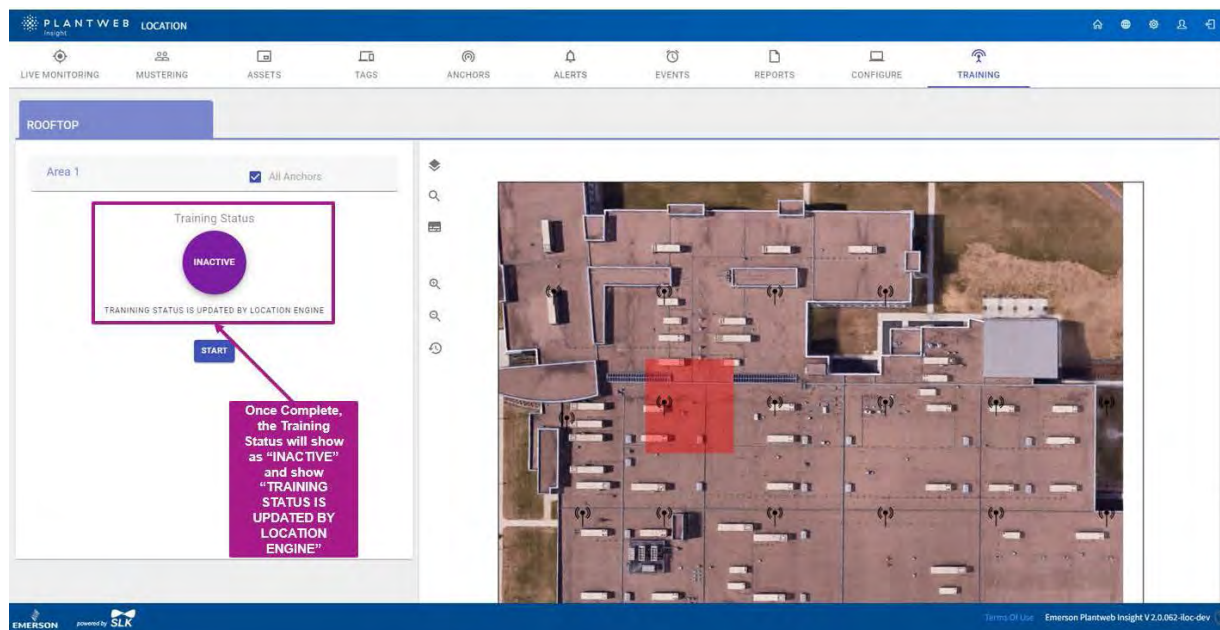




13.7 Anchor Training







Appendix

Appendix A: Specifications and Reference Data

Reference Manual
Rev 1.0
August 2020

Product Data Sheet
00813-0100-4542,
Rev AA
May 2020

Emerson Location Awareness with WirelessHART® Protocol



- World's first personnel and asset location system using *WirelessHART* protocol
- Human-centered design and user-tested interface for consistent and intuitive navigation
- Improve facility monitoring, safety, and security with the implementation of the latest location system
- Relevant information and insights about known hazardous locations, identified muster points, zoned work areas, accidents, and emergencies



Location Awareness

Within the Plantweb™ digital ecosystem, Emerson's Location Awareness utilizes the *WirelessHART* protocol to deliver accurate, reliable location information. Location Awareness consists of mobile Personnel Tags, fixed Anchors, and the Plantweb Insight Location application.

Safety mustering

- Create designated areas for safety mustering in the event of a drill or emergency
- In an emergency, know that your personnel are safe and accounted for at designated muster points.
- Plantweb Insight Location provides a live map showing locations of all personnel with a listed view of mustered and not mustered personnel.



Geofencing & live monitoring

- Geofencing is a method that enables a customer to create designated zones to notify the user interface when personnel enter those zones.
- Keep contractors safe and efficient with designated work zones.
- Keep workers safe by creating zones of known hazardous locations.
- Plantweb Insight Location provides a live map showing zoned locations and a count of the personnel in each of those zones.



Safety alerts

- Know where a fallen worker is located to quickly dispatch emergency responders.
- Personnel may have an accident or need emergency assistance. Safety alerts provide the ability to quickly locate both the fallen personnel and the closest emergency responders.



Contents

Location Awareness. 2

Component details. 3

Ordering information. 4

Specifications. 8

Product certifications. 10

Dimensional drawings. 10

Component details

Location Personnel Tags

Personnel Tags can be worn using a lanyard or belt clip. They have rechargeable, non-replaceable batteries that last up to six weeks on a single charge while operating at 10 hours per day. Personnel Tags are to be charged using a Qi certified charger. Personnel Tags are permanently sealed and should not be opened.

Location Anchors

Battery powered and easily mounted to infrastructure, Anchors utilize the *WirelessHART* network to communicate and synchronize. Using batteries and the *WirelessHART* network eliminates the need to install costly and time-consuming conduit, power, and cabling. Anchors use a single d-cell battery and should only be replaced with Emerson PN 00G45-9000-0001 batteries.

Plantweb Insight Location

Intuitive user interface provides customers with many relevant safety features including safety mustering, geofencing, live monitoring, and safety alerts.

Wireless communication

Figure 1: Location Awareness Communication

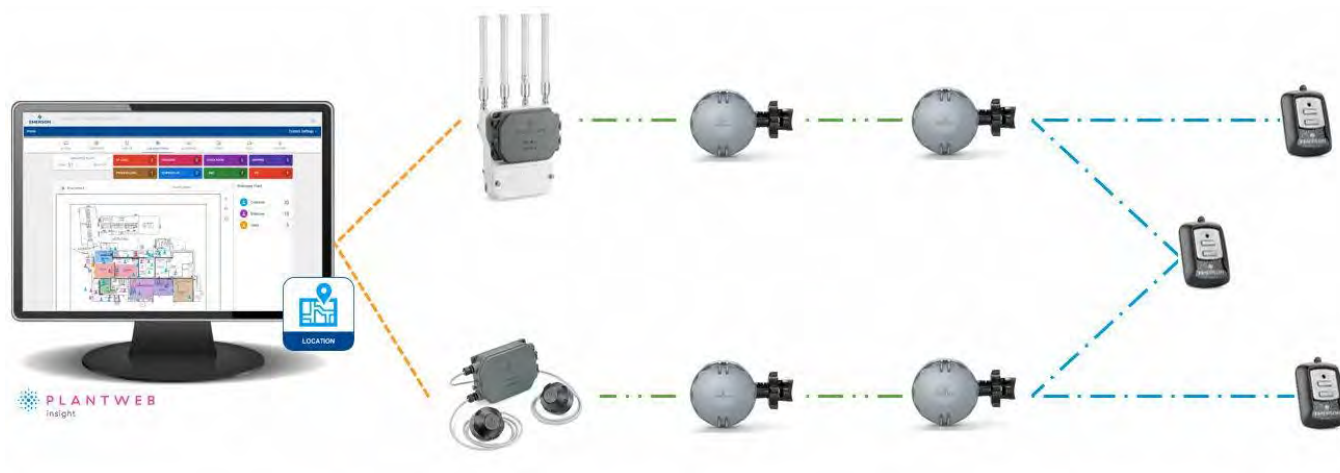


Figure 2: Location Awareness Components

WirelessHART Location Anchor



Personnel Tag



Ordering information

Model codes

Model codes contain the detail related to each product. Exact model codes will vary, but generally contain one or all of these:

1. Required model components (choices may be available)
2. Additional options (variety of features and functions that may be added to products)

The starred offerings (★) represent the most common options and should be selected for best delivery. The non-starred offerings are subject to additional delivery lead time.

[VIEW PRODUCT >](#)

Location Awareness GEO10 - required model components

Note

Typical model code for Emerson GEO10: GEO10 T1 R01

Model

Code	Description	
GEO10	EmersonLocationTag	★

Component type

Code	Description	
T1	Personnel Tag	★

Regulatory zone

Code	Description	
R01	Americas and Europe	★
R02	Asia (China and Japan are not included)	★
R03	Middle East and Africa	★

Location Awareness GEO20 - required model components

Note

Typical model code for the Emerson GEO20: GEO20 A1 R01 A01

Model

Code	Description	
GEO20	EmersonLocationAnchor	★

Component type

Code	Description	
A1	Anchor	★

Regulatory zone

Code	Description	
R01	Americas and Europe	★
R02	Asia (China and Japan are not included)	★
R03	Middle East and Africa	★

Accessories type

Code	Description	
A01	Pole mount	★

Plantweb Insight 7001X - required model components

Note

Typical model code for Plantweb Insight 7001X: 7001X V 002 LA L1 L13

Model

Code	Description	
7001X	Plantweb Insight	★

Installation type

Code	Description	
V	Virtual Machine	★
E	Existing platform (used for adding applications)	★

Number of networks

Code	Description	
002	20 Gateways	★
010	100 Gateways	★

Applications

Code	Description	
LA	Location Awareness	★
LU	Location Awareness upgrade	★

Code	Description	
LW	LocationAwarenessSubscriptionSupport addition	★

Location Awareness Tags

Code	Description	
L1	Tags 1-250	★
L2	Tags 251-500	★
L3	Tags 501-1000	★
L4	Tags 1001-2500	★
L5	Tags 2501-5000	★

Subscription support

Code	Description	
L11	1 Year Subscription Support for Location Awareness L1	★
L13	3 Year Subscription Support for Location Awareness L1	★
L15	5 Year Subscription Support for Location Awareness L1	★
L21	1 Year Subscription Support for Location Awareness L2	★
L23	3 Year Subscription Support for Location Awareness L2	★
L25	5 Year Subscription Support for Location Awareness L2	★
L31	1 Year Subscription Support for Location Awareness L3	★
L33	3 Year Subscription Support for Location Awareness L3	★
L35	5 Year Subscription Support for Location Awareness L3	★
L41	1 Year Subscription Support for Location Awareness L4	★
L43	3 Year Subscription Support for Location Awareness L4	★
L45	5 Year Subscription Support for Location Awareness L4	★
L51	1 Year Subscription Support for Location Awareness L5	★
L53	3 Year Subscription Support for Location Awareness L5	★
L55	5 Year Subscription Support for Location Awareness L5	★
S01	1 Year Subscription Support Upgrade for Location Awareness Upgrade U12	★
S03	3 Year Subscription Support Upgrade for Location Awareness Upgrade U12	★
S05	5 Year Subscription Support Upgrade for Location Awareness Upgrade U12	★
S11	1 Year Subscription Support Upgrade for Location Awareness Upgrade U13	★
S13	3 Year Subscription Support Upgrade for Location Awareness Upgrade U13	★
S15	5 Year Subscription Support Upgrade for Location Awareness Upgrade U13	★
S21	1 Year Subscription Support Upgrade for Location Awareness Upgrade U14	★
S23	3 Year Subscription Support Upgrade for Location Awareness Upgrade U14	★
S25	5 Year Subscription Support Upgrade for Location Awareness Upgrade U14	★

Code	Description	
S31	1 Year Subscription Support Upgrade for Location Awareness Upgrade U15	★
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S45	5 Year Subscription Support Upgrade for Location Awareness Upgrade U23	★
S51	1 Year Subscription Support Upgrade for Location Awareness Upgrade U24	★
S53	3 Year Subscription Support Upgrade for Location Awareness Upgrade U24	★
S55	5 Year Subscription Support Upgrade for Location Awareness Upgrade U24	★
S61	1 Year Subscription Support Upgrade for Location Awareness Upgrade U25	★
S63	3 Year Subscription Support Upgrade for Location Awareness Upgrade U25	★
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S71	1 Year Subscription Support Upgrade for Location Awareness Upgrade U34	★
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S81	1 Year Subscription Support Upgrade for Location Awareness Upgrade U35	★
S83	3 Year Subscription Support Upgrade for Location Awareness Upgrade U35	★
S85	5 Year Subscription Support Upgrade for Location Awareness Upgrade U35	★
S91	1 Year Subscription Support Upgrade for Location Awareness Upgrade U45	★
S93	3 Year Subscription Support Upgrade for Location Awareness Upgrade U45	★
S95	5 Year Subscription Support Upgrade for Location Awareness Upgrade U45	★

Specifications

Communication specifications

HART-IP® client

Plantweb Insight acts as a HART-IP client for polling information from HART-IP sources such as Emerson 1410/1420 Gateways.

WirelessHART Output

IEC 62591 (WirelessHART) 2.4 GHz DSSS

System requirements

Host operating system - Virtualization software

VMware® Workstation Pro™ 10 or higher (requirements can be found [here](#)). OR

VMware vSphere® 5.5 or higher (requirements can be found [here](#)). OR

Microsoft® Hyper-V® 2012 or higher
If needed, contact Emerson customer central.

Guest operating system

Processors = four

Memory = 12 GB RAM

minimum Hard drive = 50 GB

of free space

A DVD drive is required for all installations

Application - Browsers (recent versions supported)

Chrome™ browser

Microsoft Internet Explorer™

Physical specifications

Mounting

Personnel Tags: Personnel Tags are shipped with lanyard. Belt clip can be ordered separately as a spare part. Anchor: Pole mount

Dimensions

See [Dimensional drawings](#) for detailed

drawings. Personnel Tags: 2 in. x 3 in. (5.08

cm x 7.63 cm) Anchor: 5-in. (12.70 cm)

Emerson.com

diameter

Weight

Personnel Tags: 0.11 lbs (49.90 g)

Anchor: 1.10 lbs (498.95 g)

Material

Personnel Tags: Engineered

polymer Anchor: Engineered

polymer

Performance specifications

Temperature limits

Personnel Tags: -4 to 140 °F (-20 to 60 °C)

Anchor: -40 to 185 °F (-40 to 85 °C)

Battery life

Personnel Tags: Six weeks at 10 hours per day operation, on a single charge; rechargeable utilizing a Qi

certified charger Anchor: Five years at a 32-second system update rate

Tag position accuracy

System: +/- 32 ft. (+/- 10 m)

Designated areas: +/- 16 ft. (+/-

5 m)

Hazardous rating

Personnel Tags and Anchors: Class 1 Division 1, Zone 0

Enclosure rating

Personnel Tags and Anchors: IP 66/67

System update rate

User configurable from 32 seconds to 60 minutes

Humidity limits

0-100 percent relative humidity

Emerson Location Awareness

with *WirelessHART*® Protocol



Emerson Location Awareness safety messages

Read this Quick Start Guide before working with the product. For personal and systems safety and for optimal product performance, understand the contents completely before installing, using, or maintaining this product.

Emerson has two toll-free assistance numbers and one international number.

NOTICE

Customer Central

1 800 999 9307 (7:00 a.m. to 7:00 p.m. CST)

National Response Center (equipment service needs)

1 800 654 7768 (24 hours a day)

International

1 952 906 8888

Nuclear qualification

The products described in this document are NOT designed for nuclear-qualified applications. Using non-nuclear qualified products in applications that require nuclear-qualified hardware or products may cause inaccurate readings. For information on Rosemount™ nuclear-qualified products, contact an Emerson Sales Representative.

Wireless Gateway

The Location Anchor and all other wireless devices should be installed only after the Wireless Gateway has been installed and is functioning properly. Wireless devices should also be powered up in order of proximity from the Wireless Gateway, beginning with the closest. This will result in a simpler and faster network configuration. Use caution when making changes to the TCP/IP network settings. If they are lost or entered incorrectly, the Gateway will require a factory reset. Contact your network administrator for information on the proper TCP/IP network settings.

Hazardous substance

Individuals handling products exposed to hazardous substances can avoid injury if they are informed of and understand the hazard. If the returned product was exposed to a hazardous substance as defined by OSHA, a copy of the Material Safety Data Sheet (MSDS) for each hazardous substance identified must accompany the returned goods.

Shipping considerations

The Location Anchor unit was shipped with the battery installed. Each Location Anchor contains one “D” size primary lithium battery. Primary lithium batteries are regulated in transportation by the U. S. Department of Transportation and are also covered by the International Air Transport Association (IATA), International Civil Aviation Organization (CAO), and European Ground Transportation of Dangerous Goods (ARD). It is the shipper’s responsibility to ensure compliance with these or any other local requirements. Consult current regulations and requirements before shipping. The polymer enclosure has surface resistivity greater than one giga-ohm. Take care during transportation to and from the configuration point to prevent a potential electrostatic charging hazard.

Battery considerations

Battery hazards remain when cells are discharged. Electrostatic discharge can damage electronics. Batteries should be stored in a clean dry area. For maximum battery life, storage temperatures should not exceed 30 °C (86 °F). The Location Anchor battery shall only be replaced in a non-hazardous area. The Personnel Tag battery is rechargeable and shall only be charged in a non-hazardous area using a Qi certified charger.

NOTICE

Installation considerations

Only qualified personnel should perform the installation. Verify the operating atmosphere of the transmitter is consistent with applicable hazardous area certifications. Reference the Product Certifications section of this manual for information regarding hazardous certification. This Location Anchor Model GEO20 must be installed to ensure a minimum antenna separation distance of 20 cm (8 in.) from all persons.

⚠ WARNING

Failure to follow these installation guidelines could result in death or serious injury.

Ensure only qualified personnel perform installation or service.

Explosions could result in death or serious injury.

Before connecting a handheld communicator in an explosive atmosphere, ensure the instruments are installed in accordance with intrinsically safe or non-incendive field wiring practices.

Verify that the operating atmosphere of the transmitter is consistent with the appropriate hazardous locations certifications.

Electrical shock could cause death or serious injury.

This Location Anchor complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: This Location Anchor may not cause harmful interference. This Location Anchor must accept any interference received, including interference that may cause undesired operation.

This Location Anchor Model GEO20 must be installed to ensure a minimum antenna separation distance of 20 cm from all persons.

Physical access

Unauthorized personnel may potentially cause significant damage to an or misconfiguration of end users' equipment. This could be intentional or unintentional and needs to be protected against.

Physical security is an important part of any security program and fundamental to protecting your system. Restrict physical access by unauthorized personnel to protect end user's assets. This is true for all systems used within the facility.

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1 Overview

1.1 Location Awareness solution components



Location Anchor



Location Personnel Tag



Plantweb™ Insight Location application

1.2 Product recycling/disposal

Recycling of equipment and packaging should be taken into consideration. The product and packaging should be disposed of in accordance with local and national legislation.

2 Installation Plantweb Insight and Plantweb Insight Location application

2.1 Install Plantweb Insight and Plantweb Insight Location application

Follow instructions in the Plantweb Insight Quick Start Guide.

3 Location Anchor configuration

3.1 Safety messages

WARNING

Failure to follow these installation guidelines could result in death or serious injury.

Ensure only qualified personnel perform the installation.

Explosions could result in death or serious injury.

Before connecting a handheld communicator in an explosive atmosphere, ensure the instruments are installed in accordance with intrinsically safe or non-incendive field wiring practices.

Verify that the operating atmosphere of the transmitter is consistent with the appropriate hazardous locations certifications.

Electrical shock could cause death or serious injury.

Use extreme caution when making contact with the leads and terminals.

This Location Anchor complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: This Location Anchor may not cause harmful interference. This Location Anchor must accept any interference received, including interference that may cause undesired operation.

This Location Anchor Model GEO20 must be installed to ensure a minimum antenna separation distance of 20 cm from all persons.

3.2 Location Anchor configuration

Remove the Location Anchor electronics cover and connect to the HART® Communication terminals for configuration.

- 6 The Emerson Location Anchor will receive HART Communication from any HART handheld Field Communicator or AMS Device Manager. [Emerson.com](https://www.emerson.com)

AMS Device Manager

AMS Device Manager can connect to devices directly, using a HART modem, or remotely using the Gateway. To configure the Emerson Location Anchor, double click (or right click and select Configure/Setup) on the device icon that will appear below either the HART modem or Gateway connection tree.

3.3 Device network configuration

To communicate with the Gateway (and ultimately the host system), the Location Anchor must be configured to communicate with the wireless network. Using a Field Communicator or AMS Device Manager, enter the network ID and join key so they match the network ID and join key of the Gateway and other devices in the network. If they do not match, the Location Anchor will not communicate with the network. The network ID and join key may be obtained from the Gateway on the *Systems Settings>Network>Network Settings* page on the web server, shown in [Figure 3-1](#).

Figure 3-1: Gateway Network Settings

ENTERSECON | Wireless Gateway
© 2012 Cisco &/or its affiliates. All rights reserved.

Home | Devices | System Settings | Network Information

System Settings ↔ Network ↔ Network Settings

Gateway

- Network
- Tools
- Advanced Configuration
- General Configuration
- Management

Diagnostics

Users

Network Settings

Network name: myNet

Network ID: 10724

Join Key

12345678	12345678	12345678	12345678
----------	----------	----------	----------

☒ Show join key

Rotate network key?

☐ Yes ☒ No

Change network key now?

☐ Yes ☒ No

Security mode

☒ Common join key ☐ Access control list

Active Advertising

☒ Yes ☐ No

State Data Detection

Missed updates: 0

Minimum timeout: 90

Save Changes **Cancel**

AMS Device Manager

Right click on the Location Anchor and select Configure. When the menu opens, select Join Device to Network and follow the method to enter the network ID and join key. See [Table 3-1](#) for menu items.

Table 3-1: Device Configuration

Function	Menuitems
Join device to network	NetworkID, SetJoinKey
Device information	Tag, Long Tag, Descriptor, Message, Date
Guidedsetup	Basic Setup, Join Device to Network, ConfigureUpdateRates
Manual setup	Wireless, Location Network, HART, Security, Device Information, Power
Wireless	NetworkID, JoinDeviceToNetwork, Broadcast Information

3.4 Power down

After the Location Anchor has been configured, turn off power to the electronics by moving the power switch to off and reinstall the cover. Power should only be turned back on when the anchor is ready for commissioning.

4 Installation Location Anchor

4.1 Safety messages

⚠ WARNING

Failure to follow these installation guidelines could result in death or serious injury.

Ensure only qualified personnel perform the installation.

Explosions could result in death or serious injury.

Before connecting a handheld communicator in an explosive atmosphere, ensure the instruments are installed in accordance with intrinsically safe or non-incendive field wiring practices.

Verify that the operating atmosphere of the transmitter is consistent with the appropriate hazardous locations certifications.

Electrical shock could cause death or serious injury.

Use extreme caution when making contact with the leads and terminals.

This Location Anchor complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: This Location Anchor may not cause harmful interference. This Location Anchor must accept any interference received, including interference that may cause undesired operation.

This Location Anchor Model GEO20 must be installed to ensure a minimum antenna separation distance of 20 cm from all persons.

4.2 Considerations

General

The Emerson Location Awareness solution is comprised of the Emerson Location Tag, Emerson Location Anchor, Emerson Wireless Gateways, and Plantweb Insight Location application. Emerson Location Awareness provides the user with safety-focused monitoring of their most valued resource - their people. Rechargeable, battery-operated Personnel Tags communicate with *Wireless*HART Anchors, creating visibility in the most remote and hazardous areas of the facility for better personnel safety and security. The Plantweb Insight Location application provides a streamlined user interface that manages geofencing, safety mustering, and safety alerts, helping the user digitally transform their facility's safety.

4.3 Wireless considerations

Power-up sequence

The Wireless Gateway should be installed and functioning properly before any wireless devices are powered. Battery is already installed in the Location Anchor. Move power switch to "ON" position to power up. This results in a simpler and faster network configuration. Enabling Active Advertising on the Gateway ensures new devices are able to join the network faster. For more information, see the Wireless Gateway Reference Manual.

Antenna position

The antenna is internal to the Location Anchor. To achieve optimal range and performance, position the Location Anchor with the stem in a horizontal position as shown in [Figure 4-1](#). Good connectivity can also be achieved in other orientations. The antenna should also be approximately 1 m (3 ft.) from any large structure, building, or conductive surface, and a minimum of 2 m (6 ft.) and maximum of 4 m (13 ft.) from the ground to allow for clear communication to other devices. Refer to best practices for additional information on optimal mounting locations of the Location Anchor.

4.4 Electrical

Battery

The Emerson Location Anchor is self-powered. The battery is a single "D" size primary lithium/thionyl chloride battery. Each battery contains approximately 5.0 grams of lithium. Under normal conditions, the battery materials are self-contained and are not reactive as long as the battery is maintained. Care should be taken to prevent thermal, electrical, or mechanical damage. Contacts should be protected to prevent premature discharge. Battery cannot be changed in a hazardous location.

4.5 Installation considerations

Procedure

1. Inspect mounting bands periodically and re-tighten if necessary. Some loosening may occur after initial installation due to thermal expansion/contraction.
2. The stainless steel mounting bands could be affected by stress corrosion and potentially fail when in the presence of chlorides.
3. The Location Anchor should be installed such that steam or other high temperature fluids do not directly impinge the housing of the Location Anchor.
4. Good connectivity can also be achieved in other orientations. The antenna should also be approximately 1 m (3 ft.) from any large structure, building, or conductive surface, and a minimum of 2 m (6 ft.) and a max of 4 m (13 ft.) from the ground to allow for clear communication to other devices.

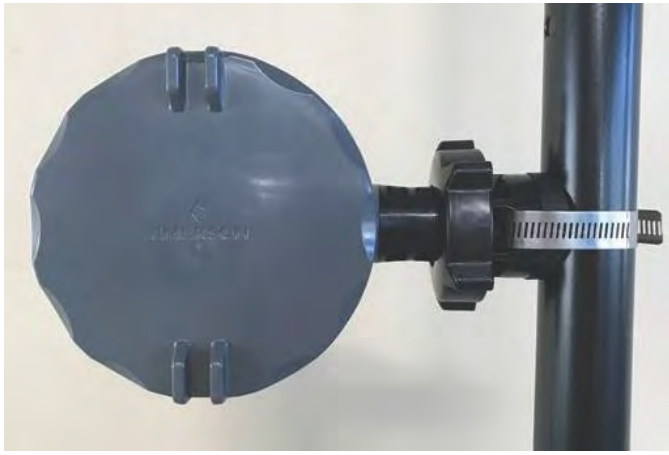
¹⁰4.6 Mounting

Emerson.com

Procedure

1. Locate the Location Anchor on a vertical or horizontal structure. Align the Location Anchor as shown in [Figure 4-1](#).
 2. Tighten clamp to 10.2 N-m (90 in-lb).
 3. If commissioning the Location Anchor, remove the electronics cover, move the power switch to the on position.
 4. Ensure the cover is fully tightened to prevent moisture ingress. The lip of the polymer electronics cover should be in contact with the surface of the polymer enclosure to ensure a proper seal. Do not overtighten.
-

Figure 4-1: Location Anchor Mounting



5 Location Anchor commissioning

5.1 Instructions and procedure safety

Instructions and procedures in this section may require special precautions to ensure the safety of the personnel performing the operations.

Information that potentially raises safety issues is indicated by a warning symbol (). Refer to the following safety messages before performing an operation preceded by this symbol.

5.2 Safety messages

WARNING

Failure to follow these installation guidelines could result in death or serious injury.

Ensure only qualified personnel perform the installation.

Explosions could result in death or serious injury.

Before connecting a handheld communicator in an explosive atmosphere, ensure the instruments are installed in accordance with intrinsically safe or non-incendive field wiring practices.

Verify that the operating atmosphere of the transmitter is consistent with the appropriate hazardous locations certifications.

Electrical shock could cause death or serious injury.

Use extreme caution when making contact with the leads and terminals.

This Location Anchor complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: This Location Anchor may not cause harmful interference. This Location Anchor must accept any interference received, including interference that may cause undesired operation.

This Location Anchor Model GEO20 must be installed to ensure a minimum antenna separation distance of 20 cm from all persons.

5.3 Verify operation

There are three methods available to verify operation:

- Field Communicator
- Gateway's integrated web interface
- AMS Suite Wireless Configurator or AMS Device Manager

Emerson.com

If the Emerson Location Anchor was configured with the network ID and join key, and sufficient time has passed, the Anchor will be connected to the network. If network ID and join key were not configured, reference “Troubleshooting”.

Note

It may take several minutes for the Location Anchor to join the network.

Field Communicator

For *WirelessHART* communication, an Emerson Location Anchor Device Driver (DD) is required. To obtain the latest DD, visit the Emerson Easy Upgrade site at: [Emerson.com/Rosemount/Device-Install-Kits](https://emerson.com/Rosemount/Device-Install-Kits).

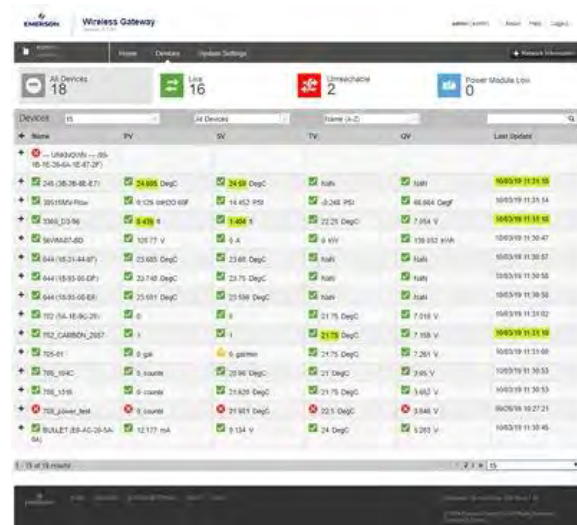
The communication status may be verified in the wireless device using the following the menu items.

Function	Menuitems
Communications	JoinStatus, WirelessMode, JoinMode, Number of Available Neighbors, Number of Advertisements Heard, Number of Join Attempts

Wireless Gateway

Using the Gateway's web interface, navigate to the Devices page as shown in [Figure 5-1](#). Locate the device in question and verify all status indicators are good (green).

Figure 5-1: Wireless Gateway Explorer page



AMS Device Manager

When the Location Anchor has joined the network, it will appear in the AMS Device Manager as illustrated in [Figure 5-2](#). For *WirelessHART* communication, a Location Anchor DD is required. To obtain the latest DD, visit the Emerson Easy Upgrade site at: Emerson.com/Rosemount/Device-Install-Kits.

Figure 5-2: AMS Device Manager



Note

Plantweb Insight Location application is provided for viewing Location Anchor status.

Field Communicator

Note

In order to establish communication with a Field Communicator, power the Location Anchor by switching the power switch to the “ON” position.

Function	Menu items
Guided setup	Basic Setup, Join Device to Network, Configure Update Rates
Wireless	Network ID, Join Device to Network, Broadcast Information

6 Operation and maintenance

6.1 Overview

This section contains information on commissioning and operating Location Anchors. Field Communicator and AMS Device Manager instructions are provided for convenience.

6.2 Instructions and procedure safety

Instructions and procedures in this section may require special precautions to ensure the safety of the personnel performing the operations.

Information that potentially raises safety issues is indicated by a warning symbol (). Refer to the following safety messages before performing an operation preceded by this symbol.

6.3 Battery replacement

WARNING

The Emerson Location Anchor shall be used only with the battery (00G45-9000-0001) supplied by Rosemount. This battery has been officially tested with the Location Anchor as required by the I.S. standards during the assessment of the Emerson Location Anchor. The battery is not replaceable in a hazardous location. Dispose of battery in accordance with local and national requirements.

Procedure

1. To replace the battery, remove devices from hazardous area.
2. Remove enclosure cover.
3. Switch the Location Anchor to "OFF".
4. Loosen the screw holding the electronics assembly to the enclosure.
5. Release battery connection from electronics board.
6. Loosen the two screws on the battery holder and slide the battery holder to the left.

Note

The screws holding down the electronics board do not need to be removed, just loosened. Take care not to let the battery fall out of enclosure.

7. Remove battery from enclosure.
8. Installation of new battery is the reverse of the removal.

6.4 Location Anchor status and notifications

The flashing LED indicates Location Anchor status using the colors described in [Table 6-1](#). To see the LED, remove the enclosure cover.

Table 6-1: Anchor LED Status Descriptions

LED color		Device status
	Green	Functioning properly
	Amber	Battery is low, battery replacement recommended
	Red	Battery replacement required OR Device is malfunctioning
	No color	No power, verify ON/OFF switch is in "ON" position

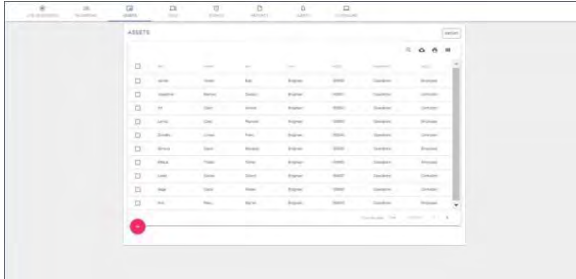
7 Personnel Tag configuration

7.1 Configuring Personnel Tags

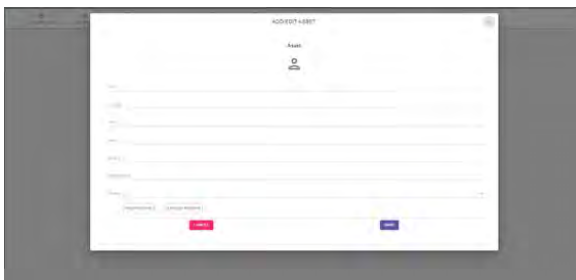
Personnel Tag configuration is completed within Plantweb Insight Location application. First, all personnel must be identified as Assets within the Asset page. Once personnel are identified as assets, they can be assigned to a specific tag. Configure Personnel Tags into Plantweb Insight Location application by following the steps below

Procedure

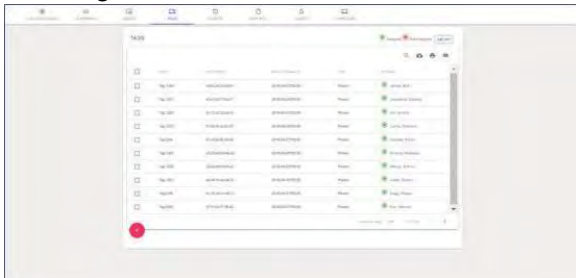
1. Add assests.



2. Define assets.



3. Add Tags.



4. Name Tag.



8 Personnel Tag mounting considerations

8.1 Tag mount

The Personnel Tag has flexible wearing options to accommodate a variety of PPE. It can be worn with a lanyard or belt clip. Lanyards are shipped with the Personnel Tags. Belt clips can be ordered separately.



9 Personnel Tag operation and maintenance

9.1 Personnel Tag status and notifications

The flashing LED indicates Location Tag status using the colors described in [Table 9-1](#). To see the LED, remove the enclosure cover.

Table 9-1: Personnel Tag LED Status Descriptions

LED color		Blink rate	Device status
	Green	1 blink per second	Normal operation
	Green/Red	Toggle blink	Safety Alert button has been activated
	Amber	1 blink per 0.5 seconds	Aggressive network search
	Amber	1 blink per second	Moderate network search
	Amber	1 blink per 2.5 seconds	Slow network search, conserving power
	Red	1 blink per second	Critical low battery AND Battery charge required
	No color	N/A	No power OR Shipping mode

9.2 Personnel Tag safety alert

The Personnel Tag has a Safety Alert button that can be exposed by sliding the grey cover downward. The red button, once pressed, sends an alert to

the Plantweb Insight Location application to inform that the personnel may need help.



9.3 Personnel Tag charging

The Personnel Tag has a rechargeable battery and is charged using a certified Qi charger. Emerson offers both a single charging pad and a bulk charging station (charges 28 tags). See Product Data Sheet for ordering details.

⚠ WARNING

The Personnel Tag should only be charged when the tag is at room temperature. If the tag has been in a cold environment, make sure to allow it to warm to room temperature before charging.



10 Product certifications

10.1 European Directive information

A copy of the EU Declaration of Conformity can be found at the end of the Quick Start Guide. The most recent revision of the EU Declaration of Conformity can be found at [Emerson.com/Rosemount](https://www.emerson.com/Rosemount).

10.2 Telecommunications Compliance

All wireless devices require certification to ensure they adhere to regulations regarding the use of the RF spectrum. Nearly every country requires this type of product certification. Emerson is working with governmental agencies around the world to supply fully compliant products and remove the risk of violating country directives or laws governing wireless device usage.

10.3 Anchor Model GEO20 FCC and IC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: This device may not cause harmful interference, this device must accept any interference received, including interference that may cause undesired operation. This device must be installed to ensure a minimum antenna separation distance of 20 cm from all persons.

This device complies with Industry Canada license-exempt RSS-247. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Changes or modification to the equipment not expressly approved by Rosemount Inc. could void the user's authority to operate the equipment.

Cet appareil est conforme à la Partie 15 de la réglementation FCC. Son fonctionnement est soumis aux conditions suivantes: Cet appareil ne doit pas causer d'interférences nuisibles. Cet appareil doit accepter toute interférence reçue, incluant toute interférence pouvant causer un fonctionnement indésirable. Cet appareil doit être installé pour assurer une distance minimum de l'antenne de séparation de 20 cm de toute personne.

Cet appareil est conforme à la norme RSS-247 Industrie Canada exempt de licence. Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne doit pas provoquer d'interférences et (2) cet appareil doit accepter toute interférence, y compris les interférences pouvant causer un mauvais fonctionnement du dispositif.

Les changements ou les modifications apportés à l'équipement qui n'est pas expressément approuvé par Rosemount Inc pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement.

10.4 TAG Model GEO10 FCC and IC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: This device may not cause harmful interference, this device must accept any interference received, including interference that may cause undesired operation.

[Emerson.com](https://www.emerson.com)

This device complies with Industry Canada license-exempt RSS-247. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Changes or modification to the equipment not expressly approved by Rosemount Inc. could void the user's authority to operate the equipment.

Cet appareil est conforme à la Partie 15 de la réglementation FCC. Son fonctionnement est soumis aux conditions suivantes: Cet appareil ne doit pas causer d'interférences nuisibles. Cet appareil doit accepter toute interférence reçue, incluant toute interférence pouvant causer un fonctionnement indésirable.

Cet appareil est conforme à la norme RSS-247 Industrie Canada exempt de licence. Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne doit pas provoquer d'interférences et (2) cet appareil doit accepter toute interférence, y compris les interférences pouvant causer un mauvais fonctionnement du dispositif.

Les changements ou les modifications apportés à l'équipement qui n'est pas expressément approuvé par Rosemount Inc pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement.

10.5 Ordinary certification location from CSA

The product has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by CSA, a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

10.6 Installing in North America

The US National Electrical Code® (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

10.7 USA

I5 Intrinsically Safe (IS) Certificate [CSA] 80004152

Standards ANSI/UL 60079-0-2013 (r2017), ANSI/UL 60079-11Ed. 6 (March 28, 2014), ANSI/UL 61010-1-2016 Ed. 3, ANSI/UL 50E-15 Ed. 2

Geo 10 Markings Intrinsically safe for:
Class I, Division 1, Groups A, B, C,
D T4; Class I Zone 0, AEx ia IIC T4
Ga
Ex ia IIC T4 Ga
T4 (-20°C ≤ Ta ≤ +60°C)
when installed per Rosemount drawing 00GEO-1106; IP66/67;

Geo 20 Markings Intrinsically safe for:
Class I, Division 1, Groups A, B, C,
D T4; Class I Zone 0, AEx ia IIC T4
Ga
Ex ia IIC T4 Ga
T4 (-40°C ≤ Ta ≤ +70°C)
when installed per Rosemount drawing 00GEO-1006; IP66/67, Type 4X;

Special Conditions for Safe Use (X):

1. Do not replace battery when explosive atmosphere is present.
2. Use only 00G45-9000-0001 batteries.

3. The surface resistivity of the housing is greater than 1GΩ. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or a dry cloth.

Note

Conditions 1, 2, 3 do not apply to the GEO10.

4. Substitution of components may impair intrinsic safety.

10.8 Canada

I6 Canada Intrinsically Safe (IS) Certificate [CSA] 80004152

Standards	CAN/CSA-C22.2 No. 60079-0:19, CAN/CSA-C22.2 No. 60079-11:14, CAN/CSA-C22.2 No. 61010-1-12 (r 2017), CSA C22.2 No. 94.1-15, CSA C22.2 No. 94.2-15
Geo 10 Markings	Intrinsically safe for: Class I, Division 1, Groups A, B, C, D T4; Class I Zone 0, AEx ia IIC T4 Ga Ex ia IIC T4 Ga T4 (-20°C ≤ Ta ≤ +60°C) when installed per Rosemount drawing 00GEO-1006; IP66/67;
Geo 20 Markings	Intrinsically safe for: Class I, Division 1, Groups A, B, C, D T4; Class I Zone 0, AEx ia IIC T4 Ga Ex ia IIC T4 Ga T4 (-40°C ≤ Ta ≤ +70°C) when installed per Rosemount drawing 00GEO-1106; IP66/67, Type 4X;

Special Conditions for Safe Use (X):

1. Do not replace battery when explosive atmosphere is present.
Ne pas remplacer les accumulateurs si une atmosphère explosive peut être présente.
2. Use only 00G45-9000-0001 batteries.

Quick Start Guide Utiliser uniquement des accumulateurs 00G45-9000-0001.

3. The surface resistivity of the housing is greater than 1 GΩ. To avoid electrostatic charge build-up, it must not be rubbed or cleaned with solvents or a dry cloth.
La résistivité de surface du boîtier est supérieure à un gigaohm. Pour éviter l'accumulation de charge électrostatique, ne pas frotter ou nettoyer avec des produits solvants ou un chiffon sec.

Note

Conditions 1, 2, 3 do not apply to the GEO10.

4. Substitution of components may impair intrinsic safety.
La substitution de composants peut compromettre la sécurité intrinsèque.

10.9 Europe

I1 ATEX Intrinsic Safety

Certificate SGS19ATEX0091X

Standards EN IEC 60079-0: 2018, EN 60079-11: 2012

Geo 10 Markings II 1 G Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +60°C), IP66/67;

Geo 20 Markings II 1 G Ex ia IIC T4 Ga (-40°C ≤ Ta ≤ +70°C), IP66/67, Type 4X

Special Conditions for Safe Use (X):

1. The plastic enclosure of the GEO20 Anchor may constitute a potential electrostatic ignition risk and must not be rubbed or cleaned with a dry cloth.
2. Do not change the battery when an explosive atmosphere is present.
3. Only replace battery with Rosemount Part No. 00G45-9000-0001.

Note

Conditions 1, 2, 3 do not apply to the GEO10.

10.10 International

I7 IECEx Intrinsic Safety

Certificate IECEx BAS 19.0080X

Standards IEC 60079-0: 2017, IEC 60079-11: 2011

Geo 10 Markings Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +60°C), IP66/67;

Geo 20 Markings Ex ia IIC T4 Ga (-40°C ≤ Ta ≤ +70°C), IP66/67, Type 4X.

Special Conditions for Safe Use (X):

1. The plastic enclosure of the GEO20 Anchor may constitute a potential electrostatic ignition risk and must not be rubbed or cleaned with a dry cloth.
2. Do not change the battery when an explosive atmosphere is present.
3. Only replace battery with Rosemount Part No. 00G45-9000-0001.

Note

Conditions 1, 2, 3 do not apply to the GEO10.

11 Declaration of Conformity

11.1 Location Awareness Personnel Tag

	
EU Declaration of Conformity No: RMD 1153 Rev. AB	
We, Rosemount Inc. 8200 Market Boulevard Chanhassen, MN 55317-9685 USA declare under our sole responsibility that the product, Emerson™ Location Awareness GEO10 Personnel Tag manufactured by, Rosemount Inc. 8200 Market Boulevard Chanhassen, MN 55317-9685 USA to which this declaration relates, is in conformity with the provisions of the European Union Directives, including the latest amendments, as shown in the attached schedule. Assumption of conformity is based on the application of the harmonized standards and, when applicable or required, a European Union notified body certification, as shown in the attached schedule.	
 (signature)	Vice President of Global Quality (function)
Chris LaPoint (name)	17-Dec-19; Shakopee, MN USA (date of issue & place)
Page 1 of 3	

EMERSON.

CE

EU Declaration of Conformity

No: RMD 1153 Rev. AB

EMC Directive (2014/30/EU)

Emerson Location Awareness GEOIO Personnel Tag

Harmonized Standards:

EN 61000-6-4:2007 +A1:2011 Class A+ EN 61000-6-2:2005/AC:2005

RED Directive 53/EU

Emerson Location Awareness GEO10 Personnel Tag

Harmonized Standards:

EC 61010-1:2010, AMD1:2016

EN 300 328 V2.1.1:2016

EN 303 417 V1.1.1:2017

EN 301 489-17 V3.1.1:2017

EN 301 489-3 V2.1.1:2019

ATEX Directive (2014/34/EU)

Emerson Location Awareness GEO10 Personnel Tag

SGS19ATEX0091X -Intrinsic Safety Equipment Group II Category 1 G

Ex ia ITC T4 Ga (-20°C < c T, < c +60°C) (GEOIO Personnel Tag)

Harmonized Standards:

EN EC 60079-0:2018 EN 60079-11:2012

EMERSON**CE****EU Declaration of Conformity**No: **RMD 1153 Rev. AB**

ATEX Notified Body

SGS FIMKO OY (Notified Body Number: 0598)
P.O.Box 30 (Sarkiniementie 3)
00211 HELSINKI
Finland

ATEX Notified Body for Quality Assurance

SGS FIMKO OY (Notified Body Number: 0598)
P.O.Box 30 (Sarkiniementie 3)
00211 HELSINKI
Finland

Page 1 of 1

11.2 Location Awareness Anchor

EMERSON

CE

EU Declaration of Conformity

No: RMD 1154 Rev. AA

We,

Rosemount Inc.
8200 Market Boulevard
Chanhassen, MN 55317-9685
USA

declare under our sole responsibility that the product,

Emerson™ Location Awareness GE020 Anchor

manufactured by,

Rosemount Inc.
8200 Market Boulevard
Chanhassen, MN 55317-9685
USA

to which this declaration relates, is in conformity with the provisions of the..European Union Directives, including the latest amendments, as shown in the attached schedule.

Assumption of conformity is based on the application of the harmonized standards and, when applicable or required, a European Union notified body certification, as shown in the attached schedule.



(signature)

Vice President of Global Quality

(function)

Chris LaPoint

(name)

17-Dec-19;Shakopee, MN USA

(date of issue & place)

page 1 of 3

EMERSON.

CE

EU Declaration of Conformity

No: RMD 1154 Rev. AA

EMC Directive (2014/30/EU)

Emerson Location Awareness GE020 Anchor
 Harmonized Standards:
 EN 61000-6-4:2007 +A1:2011 Class A+
 EN 61000-6-2:2005/AC:2005

RED Directive (2014/53/EU)

Emerson Location Awareness GE020 Anchor
 EC 61010-1:2010, AMD1:2016
 EN 300 328 V2.1.1:2016
 EN 301 489-17 V3.1.1:2017

ATEX Directive (2014/34/EU)

Emerson Location Awareness GE020 Anchor

SGS19ATEX0091X - Intrinsic Safety

Equipment Group II Category 1 G
 Ex ia TIC T4 Ga (-40°C ST, S+70°C) (GE020 Anchor)

Harmonized Standards:
 EN 60079-0:2018
 EN 60079-11:2012

EMERSON.**CE****EU Declaration of Conformity**No: **RMD 1154 Rev. AA**

ATEX Notified Body

SGS FIMKO OY [Notified Body Number: 0598]
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Finland

ATEX Notified Body for Quality Assurance

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00211 HELSINKI
Finland

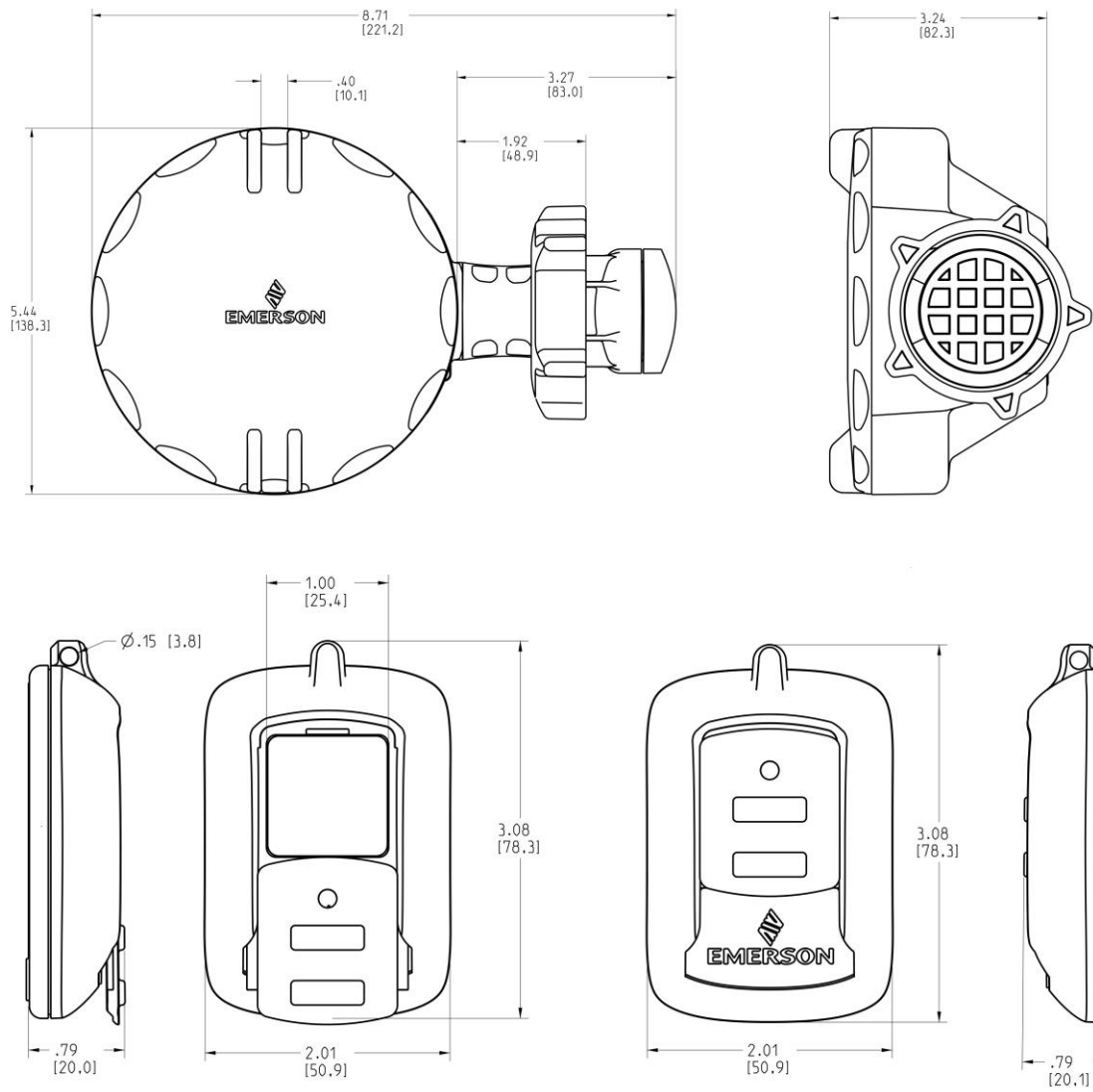
00825-0100-4542Quick Start Guide 00825-0100-4542, Rev. AA
February 2020**Global Headquarters**Emerson Automation Solutions
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Dimensional drawings



Dimensions are in inches (mm).

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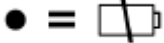


A.1 Accessories and Spare Parts

PART NUMBER	DESCRIPTION
00GEO-9001-0001	KIT, WIRELESS CHARGING PAD; CHOETECH T511-S
00GEO-9002-0001	KIT, LOCATION AWARENESS, TAG, LANYARDS
00GEO-9002-0002	KIT, LOCATON AWARENESS, TAG, PERSONNEL, BELT HOLSTERS
00GEO-9003-0001	KIT, LOCATION AWARENESS, ANCHOR, STAINLESS STEEL MOUNTING BAND
00GEO-9003-0002	KIT, LOCATION AWARENESS, ANCHOR, POLE MOUNT
00GEO-9003-0003	KIT, LOCATION AWARENESS, ANCHOR, COVER ASSEMBLY
00G45-9000-0001	BATTERY ASSEMBLY
00G45-9000-0002	BATTERY RETAINER ASSEMBLY
00G45-9000-0003	SCREWS FOR RETAINER AND SHROUD
00G45-9001-0002	COVER O-RING

Appendix B: Tools

B.1 Personnel Tag LED Status

LED Color		Blink rate	Device status
	Green	1 blink per second	Normal operation
	Green/Red	Toggle blink	User assistance button has been activated
	Amber	1 blink per 0.5 seconds	Aggressive network search
	Amber	1 blink per second	Moderate network search
	Amber	1 blink per 2.5 seconds	Slow network search, conserving power
	Red	1 blink per second	Critical low battery AND Battery charge required
	No Color	N/A	No power OR Shipping mode

Appendix C: Recommended Practices

C.1 Anchor to Anchor Grid Spacing

Heavy Obstruction: 100 ft. (30 m)—Typical heavy density plant environment; a truck or equipment cannot be driven through this.

Medium Obstruction: 150 ft. (45 m)—Typical light process areas; lots of space between equipment and infrastructure.

Light Obstruction: 200 ft. (60 m)—Typical of tank farms; despite tanks being big obstructions themselves, lots of space between and above makes for good RF propagation.

For examples and complete explanations, refer to the IEC62591 *WirelessHART* System Engineering Guide.

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