



IoA Manager

User Guide



Notice

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About this Guide

Thank you for using IoA Manager. This prefix explains how to use this manual to get you up and running with the software as soon as possible.

Purpose and scope

The purpose of this guide is to help you successfully use IoA Manager features and capabilities. This guide includes task-based instructions that describe how to install, configure, use, and troubleshoot the IoA Manager System. Additionally, this guide provides a complete description of the VIAVI warranty and services, including terms and conditions of the licensing agreement.

Assumptions

This guide is intended for novice, intermediate, and experienced users who want to use the IoA Manager System effectively and efficiently. We are assuming that you have basic computer experience and are familiar with basic telecommunication concepts and terminology.

Technical assistance

If you require technical assistance, call 1-844-GO-VIAVI / 1.844.468.4284.

Outside US: +1-855-275-5378

Email: CATVsupport@viavisolutions.com

For the latest TAC information, visit

<https://support.viavisolutions.com>

<https://www.viavisolutions.com/en/services-and-support/support/technical-assistance>

Introduction

This chapter provides an overview of how IoA sensors are managed and data is stored within the StrataSync System, including the following:

- "About the StrataSync System" on page 14

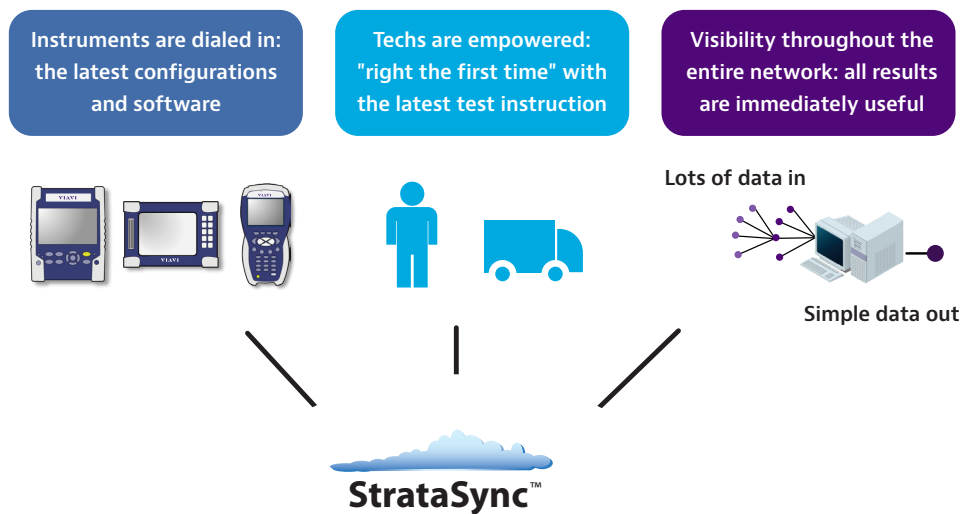
About the StrataSync System

StrataSync is a hosted, cloud-based software application that provides asset, configuration, workflow, and test data management for a wide range of VIAVI Solutions instruments.

StrataSync manages inventory, test results, and performance data anywhere with browser-based ease and improves technician and instrument efficiency.

StrataSync offers

- **Updates and Options** – Field personnel operate at maximum capability and efficiency by knowing immediately when firmware upgrades and instrument options are available. They receive proactive, application-aware notifications, and distribution is managed for specific groups or individuals.
- **Asset and Configuration Management** – Enterprise-wide standardized templates to ensure instruments are aligned to a specific configuration. StrataSync lets users monitor and update asset data, modules, configurations, test plans and scripts, templates, and groups, ensuring technicians consistently have the right instrument configurations when performing tests—increasing first-time success rates and reducing repeat rates.
- **Test Data Management** – A common test data repository makes baselining performance practical, and enables the analysis of network trends for proactive maintenance, improved reliability, and customer satisfaction. StrataSync performs file storage, printing, and exporting, and provides clear dashboards and basic reports.
- **Workflow** – Automatically track whether assigned jobs are being completed and their pass/fail status. Results can be viewed per technician, per region, per subcontractor, or however you like.



All without increasing headcount, while also minimizing overall operating cost and unnecessary truck rolls.

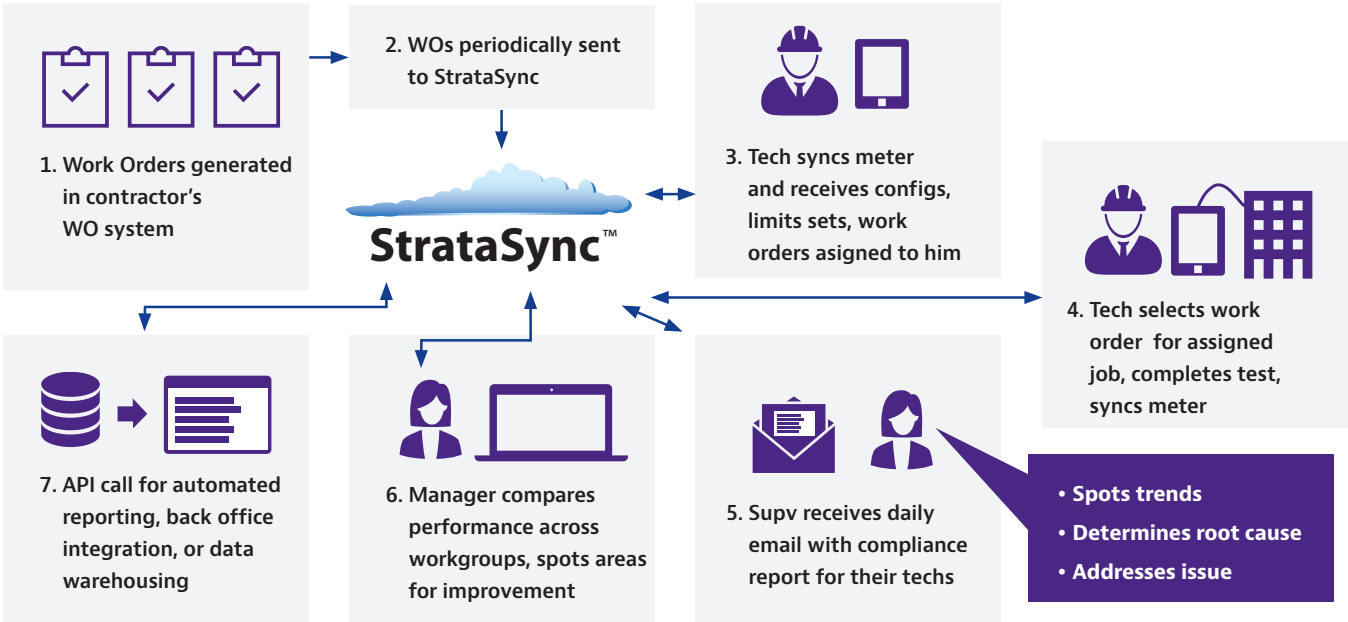
Asset management

StrataSync asset management provides a single, intuitive way to monitor and upgrade assets in the field and office. An administrator can quickly identify out-of-date and under-utilized test sets and target updates and the reallocation of assets. With StrataSync, registration identifies which test units are assigned to each technician. StrataSync tracks each test-set sync with the server, making utilization and test practices visible. Post-analysis of compliance and technician activity provides near real-time coaching opportunities.

Upgrades can be applied automatically during the normal work order process, as technicians use their test sets in the field. This dramatically reduces the amount of time spent in the work center determining the fit-for-purpose status of the test set, identifying upgrade requirements, and then manually upgrading the test set.

Test data management

StrataSync collects and stores test data in a central location, enabling viewing and sharing of test data results. Often, data is not centrally collected and its long-term value is underrated. The causes of repeat truck rolls are obscure, and data from previous tests is not available or is not analyzed. With StrataSync, critical plant-performance information is stored in a secure location, enabling proactive problem-area identification. Test data is also accessible via an API to simplify automated retrieval.



Getting Started

This chapter provides steps to get started using IoA Manager, including the following:

- “Logging into StrataSync” on page 12
- “StrataSync visual overview” on page 14
- “Setting up StrataSync for IoA Manager functionality” on page 15
- “Creating user accounts” on page 20

Logging into StrataSync

Welcome to StrataSync! To bring up the StrataSync login screen from your browser, type the following URL and press return.

US: <https://stratasync.viavisolutions.com>

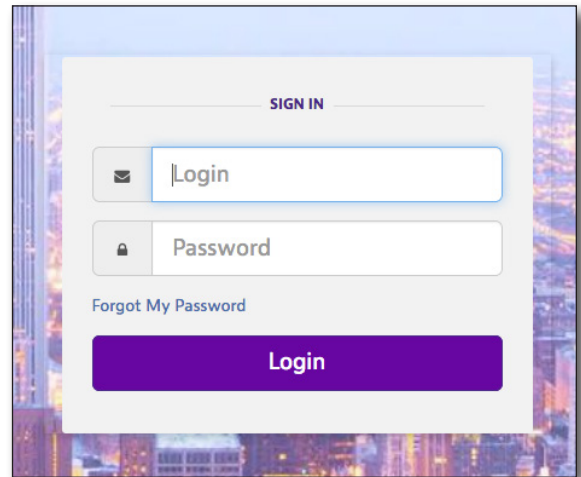
EU: <https://eu.stratasync.viavisolutions.com>

Your StrataSync Administrator may have already created a browser bookmark and user account for you.

If you are the administrator, you should have received your login and licensing information from VIAVI when your account was set up.

Enter your Username and Password, then select the **Log In** button. The StrataSync **Main Dashboard** will be displayed.

Note: If you need help logging in, contact your StrataSync Administrator.



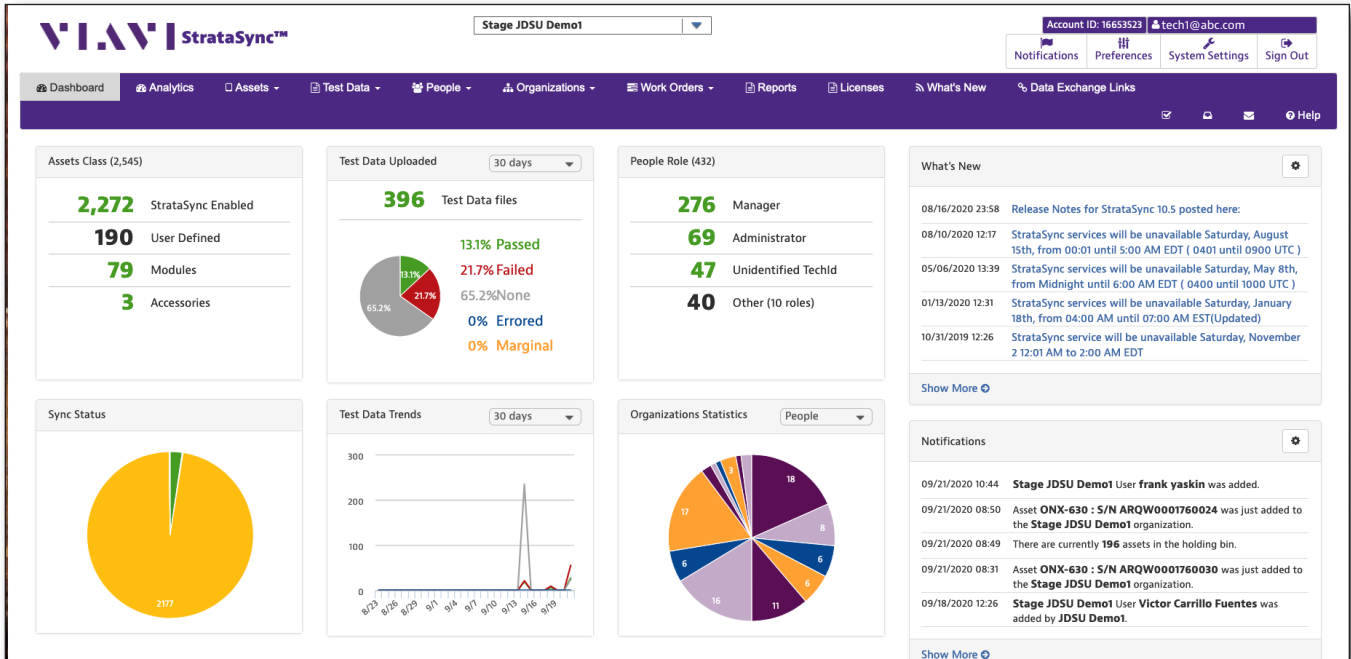
NOTE:

If you do not yet have a StrataSync account, please request one at the following link:



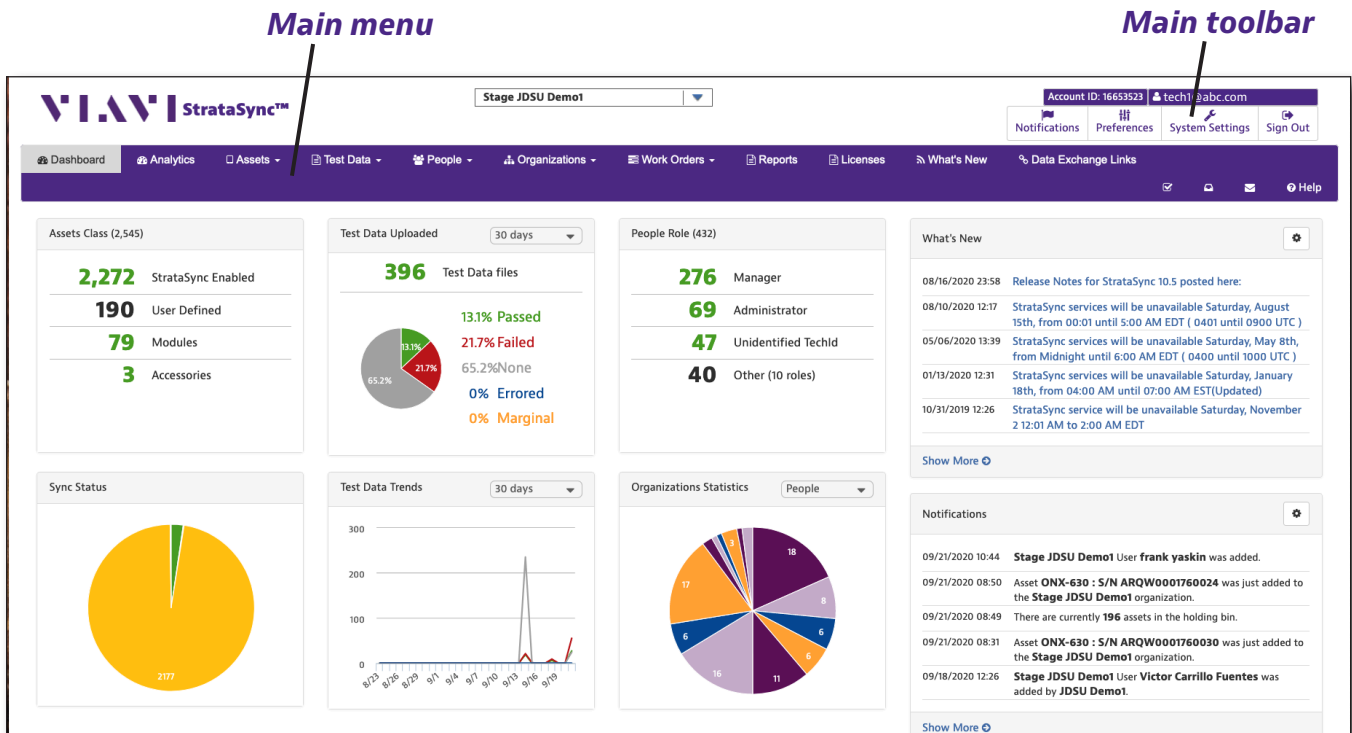
<https://comms.viavisolutions.com/StrataSync-Account-Request-en-vi107732> (or <https://tinyurl.com/wyb69a6f>)

Make sure to check the box indicating that the requested StrataSync account is intended for IoA management.



StrataSync Main Dashboard

StrataSync visual overview



StrataSync Main Dashboard

Navigation

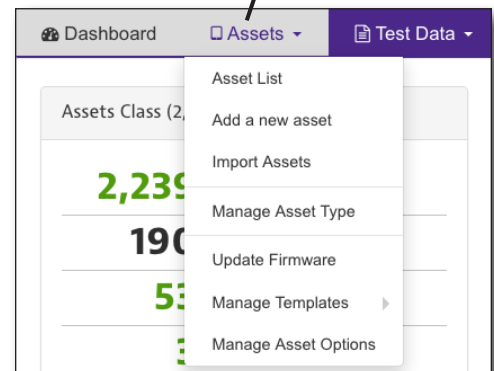
Most of the navigation in the StrataSync System is done through the **Main menu tabs** (purple menu at the top of the screen) and the **Main toolbar** (menu at the top right corner of the screen), as shown above.

Main menu

Select the tabs within the Main menu to open dropdown menus to navigate between the **Main Dashboard** (home page), **Analytics**, **Assets**, **Test Data**, **People**, **Organizations**, **Work Orders**, **Reports**, **Licenses**, **What's New**, and **Data Exchange Links** screens.

You can also select the icons for **Manage Firmware Versions** , **Holding Bin** , **Schedule Email** , and bring up the **Help** **Help** section on the far right.

Assets tab and dropdown menu



Setting up StrataSync for IoA Manager functionality

A few simple steps are required to prepare StrataSync for IoA Manager functionality.

- First, an Organization and Manager (User) must be created that will act as the “root” for all IoA Management activities.
- Then the Manager (User) must be moved into the newly created Organization.

We'll cover these in the next few sections. See the [StrataSync User Guide](#) for more details.

These steps require a StrataSync user with Administrator privileges, capable of creating Organizations and Users. See [“Creating user accounts” on page 20](#).

Organizations tab

| Login Name | First Name | Last Name | Tech ID | Role | Organization | Full Org Path | Manager Login Name | Manager First Name | Manager Last Name |
|------------------------|------------------|-----------------|-------------|---------------------|------------------|------------------|---------------------|--------------------|-------------------|
| jdsu.demo1@jdsu.com | JDSU | Demo1 | demo1 | Administrator | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu.demo1@jdsu.com | JDSU | Demo1 |
| jdsu_demo10@jdsu.com | JDSU_demo1_first | JDSU_demo1_last | jdsu_demo10 | Technician2 | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |
| dsam1@jdsu.com | Yvan | Frosio | fro47637 | Administrator | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |
| t6d1_16653523 | t6d1_first | t6d1_last | t6d1 | Unidentified TechId | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |
| 58729_16653523 | 58729_first | 58729_last | 58729 | Unidentified TechId | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |
| qinqin@jdsu.com | qinqin | liu | 57162 | Administrator | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |
| liang.cui@jdsu.com | liang | cui | cui57670 | Technician | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |
| kq16653523@jdsu.com | Khalid | 16653523 | kq | Administrator | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |
| yoo-chul.shin@jdsu.com | Yoo-Chul | Shin | 59075 | Administrator | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |
| yoochul_16653523 | YooChul_first | YooChul_last | yoochul | Unidentified TechId | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |
| yeshni_16653523 | YCSHni_first | YCSHni_last | yeshni | Unidentified TechId | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |
| yeshin_16653523 | YCSHIN_first | YCSHIN_last | yeshin | Unidentified TechId | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |
| ycs_16653523 | YCS_first | YCS_last | ycs | Unidentified TechId | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |
| jdsu_demo_16653523 | JDSU_Demo1_first | JDSU_Demo1_last | jdsu_demo | Unidentified TechId | Stage JDSU Demo1 | Stage JDSU Demo1 | jdsu_demo1@jdsu.com | JDSU | Demo1 |

Organizations List selected from the Organizations tab

Creating an organization

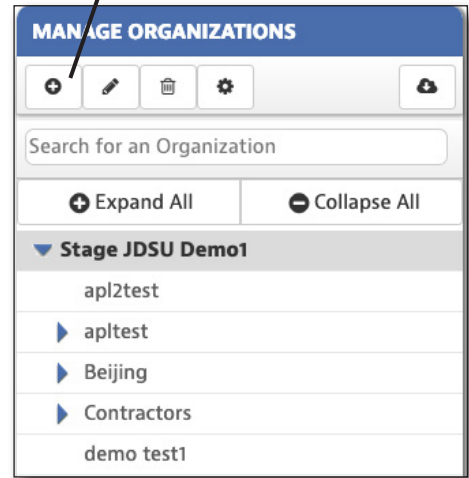
1. Select the **Organizations** tab in the Main menu, then select **Organization List** from the dropdown.
2. From the Organization List screen, select the **Add** button at the top of the **Manage Organizations** tab. The Add Organization screen is displayed.
3. On the right, select the parent organization.

Typically, the new organization name includes reference to the account owner's corporate name, and this is an organization created specifically for management of IoAs. For example, if the StrataSync account is owned by ACME corporation, the organization name might be: "ACME IoA Manager".

Also, the new organization can be placed anywhere in ACME's StrataSync Org Structure; it is typically placed near the top of the structure.

4. Enter the name for the new organization.
5. Click **Add User** to create a user for this new organization. The Add User screen appears.

Add Organization



Add User

Add Organization screen

Adding a user

1. Enter the **Username**, **Email**, and **Last Name**.

The username must be unique for each StrataSync account and formatted as an email address (e.g. johnsmith@abc.com), but doesn't have to be a valid email.

You can use the user's actual email address for both username and email address.

The **First Name** and **Employee/Tech ID** must be populated exactly as shown with the text **root.ioa.manager**.

This ensures that regions/sites and sensors can be efficiently discovered by VIAVI's IoA Manager application as well as any custom IoA Manager console application.

ADD USER - Input user details

User Information

- * Username: root.ioa.manager@ioa.com
- * Email: root.ioa.manager@ioa.com
- * First Name: root.ioa.manager
- * Last Name: IoA Manager
- * Employee/Tech ID: root.ioa.manager
- Send email:
- Landing Site: Administrat...
- Role: Manager
- Login Enabled:
- Visibility Organization: VIAVI Main
- Organization: VIAVI Main
- Manager: JDSU JDSU
- Fail test notification configured: No
- Subscribed Failed Test Notification Users: None

Contact Information

Other Attributes

Preferences

Add **Cancel**

2. The **Send Email** and **Login Enabled** checkboxes can be unchecked as it is not a requirement that this user can login. It is perfectly acceptable for this user to be able to login if this account will be used for further IoA management functionality.
3. Use the **Landing Site** dropdown to choose **Administrator** or **Technician** Site, then use the **Role** dropdown to choose a role.
4. Click **Visibility Organization** to change the permissions visibility for the user. See ["Creating user accounts" on page 20](#) for more details.
5. Click **Organization** to change the organization.
6. Add additional optional contact information, attributes, and preferences in those sections.

7. Click **Add**. Back on the Add Organization screen, the "Manager" inputs will be populated with the corresponding value for the newly added user.
8. Verify the information, then click **Save and Done**. The new organization will appear in the list.

The screenshot shows the 'Add Organization' form with the following fields and values:

- Organization Name:** ioA Manager
- Manager Tech ID:** root.ioa.manager (with an [Add User](#) link)
- Manager First Name:** root.ioa.manager
- Manager Last Name:** ioA Manager
- Contractor ID:** (empty)
- Set maximum time for options checkout:** [] days

On the right side, there is a 'Parent Organization' dropdown menu with a search bar and a list of options. A blue button labeled 'Save and Done' is located at the bottom right of the form. A purple arrow points from the text 'Save and Done' to this button.

Move the user/manager into the organization

1. Select the **People** tab in the Main menu, then select **People List** from the dropdown.
2. From the People List, select the checkbox next to the user you want to move.
3. Find the user with the **root.ioa.manager** Tech ID that was created when creating the organization. If there are several users, it may be easier to use the filtering capability to search for the specific Tech ID.
4. Right-click the person (or use the **Action** dropdown) and select **Move to another organization**. The Move User screen appears.
5. Select the organization that you previously created for IoA management (e.g. "ACME IoA Manager") and click **Next**.
6. A confirmation screen asks you to confirm. The associated assets will also be moved. Click **Move**.
7. You can also choose to move the test data or leave it in the current org.

| | Login Name | First Name | Last Name | Tech ID | Role |
|-------------------------------------|--------------------------|------------------|-------------|------------------|---------|
| <input type="checkbox"/> | | | | root.ioa.manager | |
| <input checked="" type="checkbox"/> | root.ioa.manager@ioa.com | root.ioa.manager | IoA Manager | root.ioa.manager | Manager |

MOVE USER

Select Organization

+ Expand All
- Collapse All

▼ Stage JDSU Demo1

- apl2test
- ▶ apltest
- ▶ Beijing
- ▶ Contractors
- demo test1
- DemoCamelCase
- demolowercase
- demotest2
- DEMOUPPERCASE
- Duranti, Jimmy T
- ▶ Fast Region

Next ↷
Cancel

MOVE USER

Moving users below to demo test1

Also move user's Test Data to demo test1

Note: The associated asset(s) will also be moved to demo test1

| Employee/Tech ID | First Name | Last Name | Current Organization | Associated Assets |
|------------------|------------|-----------|----------------------|-------------------|
| westmanager | West | Manager | West Region | 0 |
| east_tech1 | East | Tech1 | East Reg1 | 0 |

Creating user accounts

Additional users can be added via StrataSync’s existing user management functionality. See the *StrataSync User Guide* for more details.

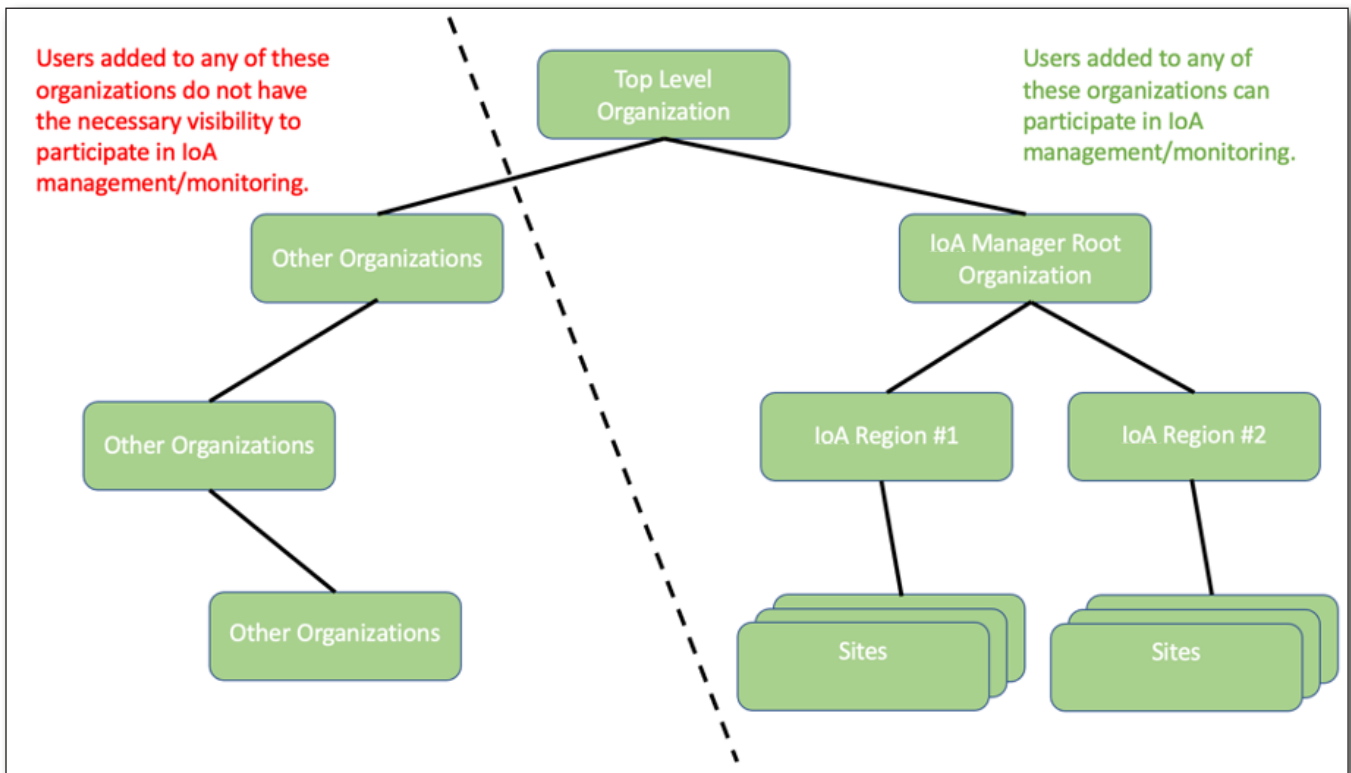
Visibility

To participate in IoA Management/Monitoring activities, users must have visibility to at least some portion of the IoA Manager organization hierarchy. See below for details.

To participate in IoA Management/Monitoring, users must have visibility to an organization to the right of the dashed line.

As an example, a user with visibility to the Top Level Organization or the IoA Manager Root Organization will be able to view/manage all Regions, Sites, and Sensors.

A user with visibility to IoA Region #2 would only be able to view/manage the IoA Region #2 region and the Sites/Sensors nested within.



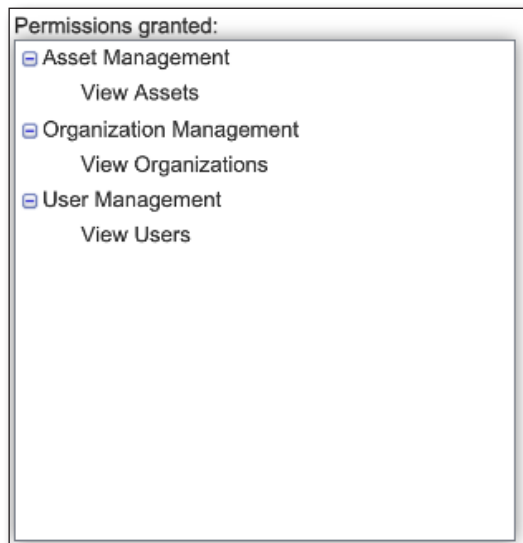
Creating user accounts in StrataSync

Permissions

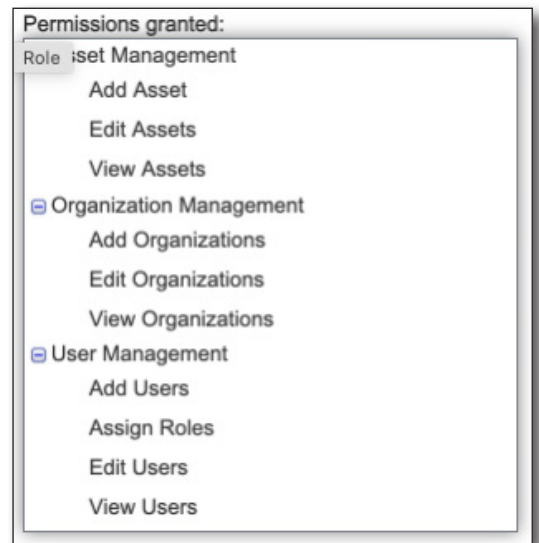
Users must also have sufficient permissions in StrataSync.

At a minimum, users must have permissions to view Organization, Users, and Assets.

To add/edit Regions, Sites, or Sensors, additional permissions are necessary, as shown below.



Read-only permissions



Add/edit permissions

Using loA Manager

This chapter provides steps to get started using loA Manager, including the following:

- “Logging into loA Manager” on page 24
- “loA Manager visual overview” on page 25
- “Navigating the loA Manager menus” on page 27
- “Searching” on page 29
- “Creating an organization hierarchy” on page 30
- “Creating regions and sites” on page 31
- “Deleting regions and sites” on page 36
- “Adding sensors” on page 39
- “Deleting sensors” on page 42
- “Commissioning sensors” on page 43
- “Decommissioning sensors” on page 45
- “Viewing loA sensor, site, and region status” on page 46
- “Viewing loA sensor JSON results files” on page 52
- “Downloading loA sensor and save data history files” on page 54
- “Updating loA sensor firmware” on page 56

Logging into IoA Manager

Welcome to IoA Manager! To bring up the IoA login screen from your browser, type the following URL and press return.

US: <https://ioa-manager.stratasync.viavisolutions.com>

EU: <https://ioa-manager.eu.stratasync.viavisolutions.com>

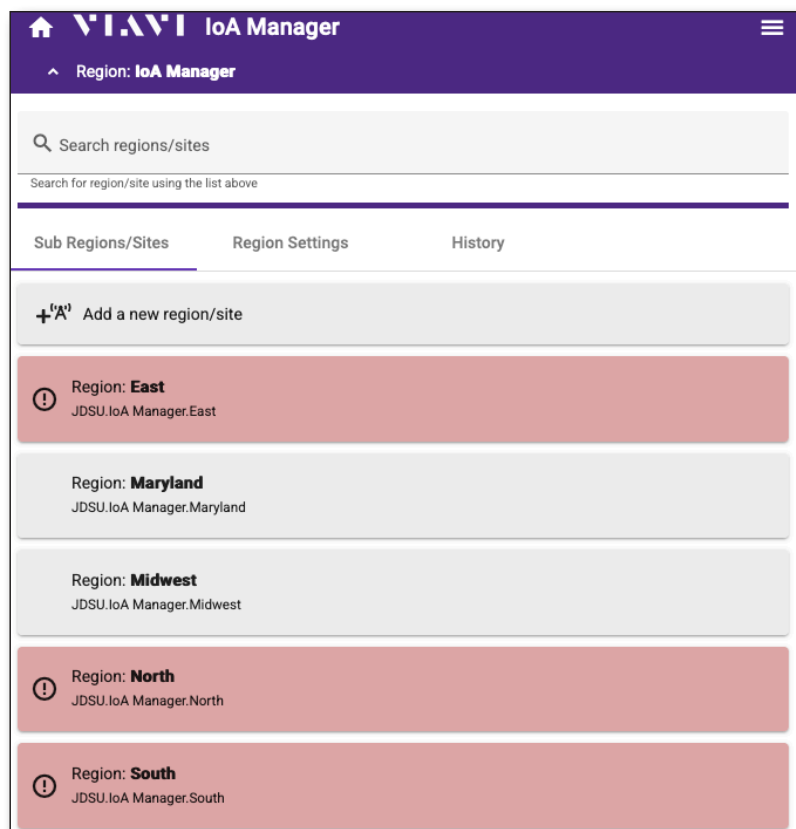
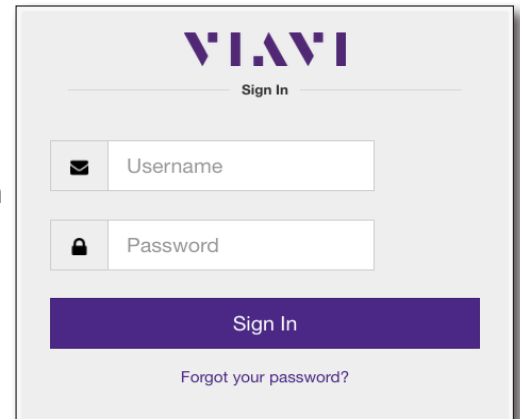
Your IoA or StrataSync Administrator may have already created a browser bookmark and user account for you.

If you are the administrator, you should have received your login and licensing information from VIAVI when your account was set up.

Enter your Username and Password, then select the **Sign In** button.

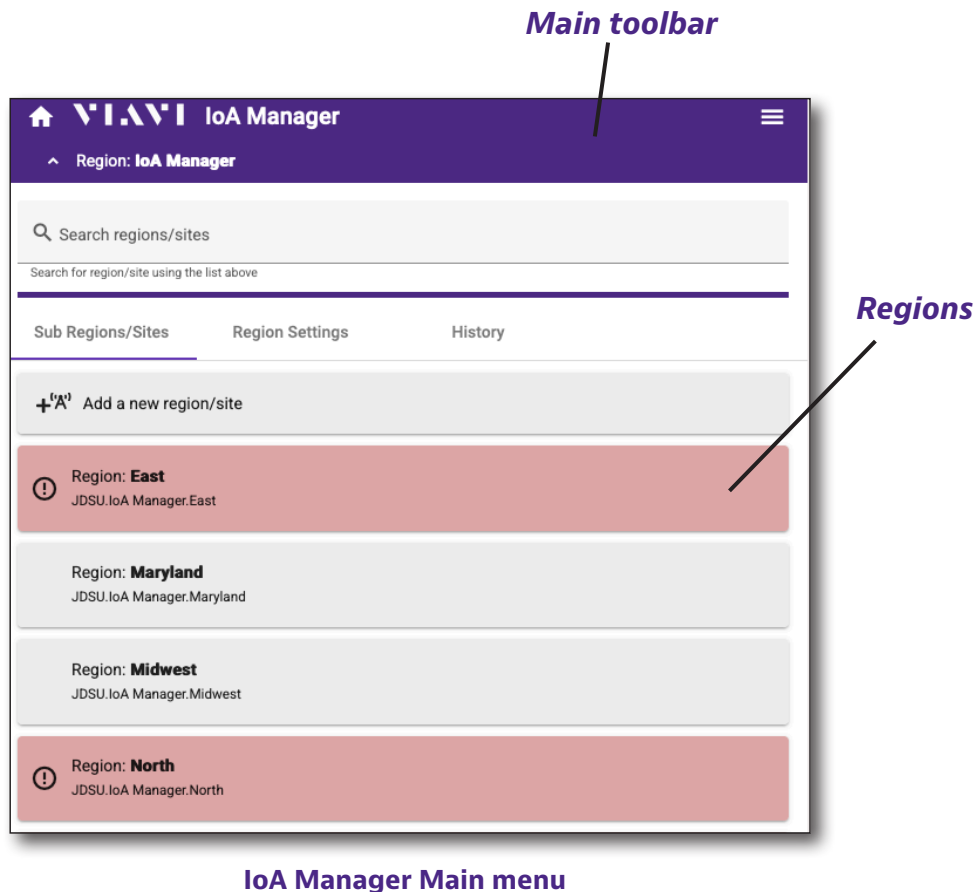
The IoA Manager **Main menu** is displayed.

Note: If you need help logging in, contact your IoA or StrataSync Administrator.



IoA Manager Main menu

IoA Manager visual overview

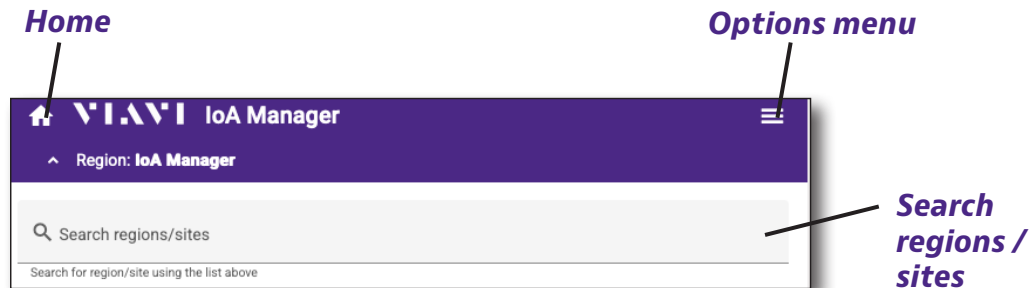



Navigation


Most of the navigation in the IoA Manager is done through the **Main toolbar** (purple menu at the top of the screen) and the top-level **Regions** list below, as shown here.

Main toolbar

Along the top of the screen are several menu items, as shown below.



Home  – Returns you to the Main menu and top-level hierarchy at any time.

Options menu  – Brings up the options menu for more advanced features, including refresh, adding regions/sites and sensors, and signing out the current user.

Search regions / sites – Allows you to search for sites and regions from any screen.

Options menu

You can use the **Options** menu for more advanced features, including refreshing the page, adding regions/sites and sensors, and signing out the current user.

From the IoA Manager Main menu, select the **Options** menu in the upper right. The Options menu dropdown appears.

Refresh – Refreshes the entire application (all regions, sites, and sensors, and recalculates the status for each element.

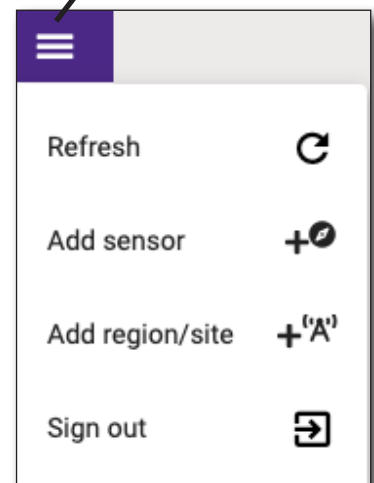
Add sensor – Allows you to add a sensor to a site from anywhere in the app.

Add region/site – Allows you to add a region, sub-region, or site from anywhere in the app.

Sign out – Signs out the current user.

We'll cover these options more in the following sections.

Options menu



Navigating the IoA Manager menus

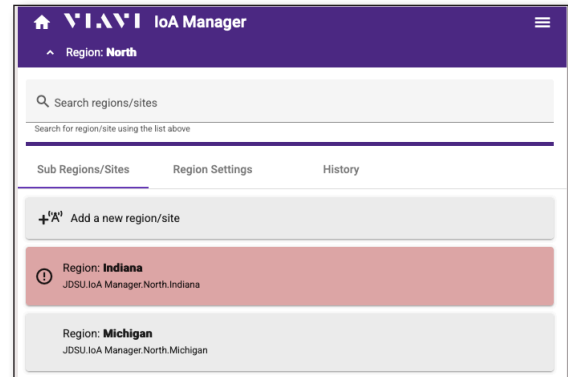
As you navigate the organization hierarchy of the IoA Manager regions / sites / sensors, you'll start to notice some subtle changes.

When you first open the app, you're shown the top-most visible region. The hierarchy can be navigated by clicking on sub-regions, sites, and sensors.

For example, the following hierarchy path would display the sensor data at the VIAVI Indy Office:

North (region)

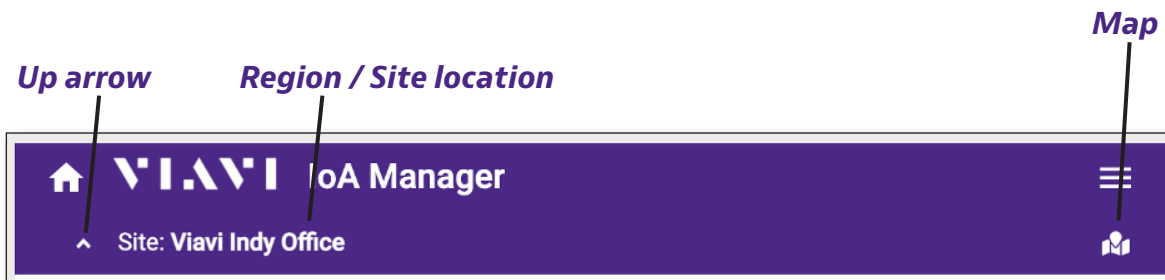
- Indiana (subregion)
 - Indianapolis (subregion)
 - VIAVI Indy Office (site)
 - Sensor on antenna #2




IoA Manager, North region, showing Indiana and Michigan

Regions and sites


When you navigate to a site or region, the Main toolbar will now show the site/region location under the VIAVI logo, indicating the type of the selected item (site or region) as well as the location name.



Additional options also appear, including:

Up arrow  – Navigates up the organization hierarchy one level. You can go all the way up to the Main menu this way.

Region / Site location – Indicates the current selected location. When viewing sensor information, you can also click this to return to the site / region top level.

Map  – Brings up Google Maps and drops a pin on the address/coordinates. For this to appear, the following site values must be available:

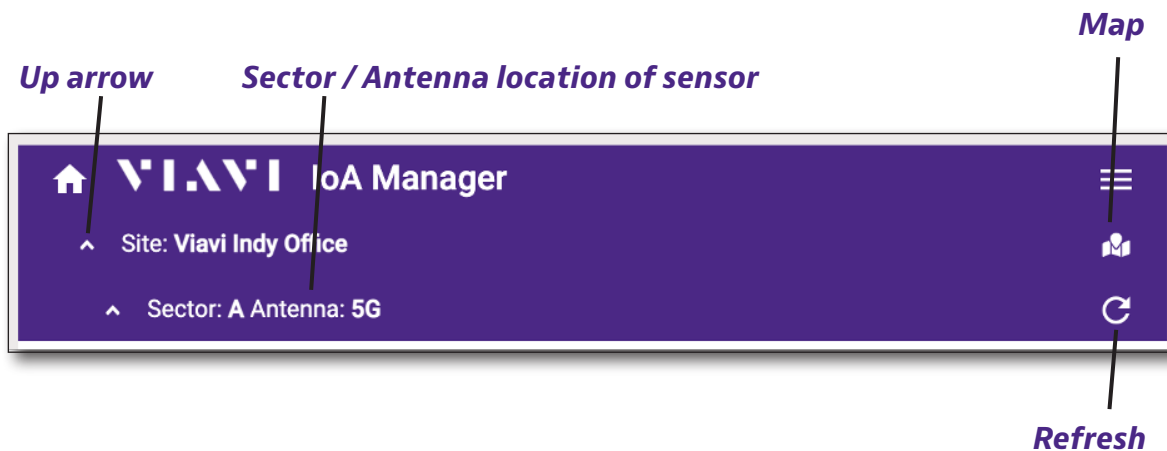
- Address, city, state / province

OR


- Latitude and longitude

Sensors

When you navigate to a sensor, the Main toolbar will now show the sensor location under the region / site location, as a new row. This indicates the sector name and antenna name for the selected sensor.




Additional options also appear, including:

Up arrow  – Navigates up the organization hierarchy one level. You can go all the way up to the Main menu this way.

Region / Site location – Indicates the current selected location. When viewing sensor information, you can also click this to return to the site / region top level.


Sector / Antenna location – Indicates the current selected sensor location, including the sector and antenna.

Map  – Brings up Google Maps and drops a pin on the address/coordinates. For this to appear, the following site values must be available:

- Address, city, state / province

OR

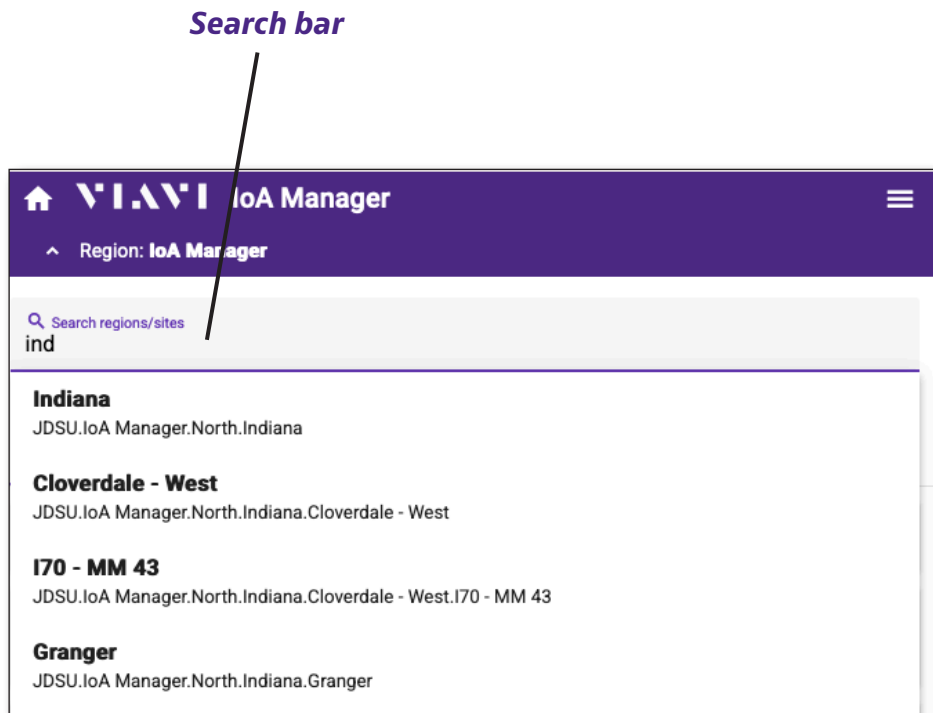
- Latitude and longitude

Refresh sensor  – Refreshes the data for the selected sensor only. Refresh in the Options menu refreshes all data in IoA Manager.

Searching

Use the **Search** bar at the top of any screen to find regions or sites quickly.

When you start typing, a dropdown appears with the results. When searching for Indiana or Indianapolis, for example, just type "ind" to see the filtered results. Case is not sensitive.



Creating an organization hierarchy

Now that you are familiar with both StrataSync and IoA Manager, one of the first things you'll want to do is create the hierarchy for your organization to include regions or site locations to differentiate them easily.

The StrataSync organizational structure is highly flexible, but normally customers will choose to set up their org in layers that correspond to the geography covered by their wireless service footprint. The top level could be countries in a multi-national account, or directional regions (North, South, East, Southwest, Southeast) for customers operating in a single country.

Below that, the next level could be states or provinces, below that could be cities, and below that would normally be wireless sites. Within sites, you would add sector names, antenna names and sensors.

In order to align with StrataSync, this is the recommended organization structure.

IoA Manager

- Region – North, West, South, Midwest, South Central, etc.
 - State/Province – New York, Ontario, Sonora, etc.
 - City – Indianapolis, London, Beijing, etc.
 - Site – Tower 3245, Building XYZ, etc.
 - Sensor – LTE02 in Sector Alpha

Note: The limit to the number of levels (including the sensor level) is 7.



NOTE:

You need the appropriate permissions in StrataSync to create your organization in IoA Manager.

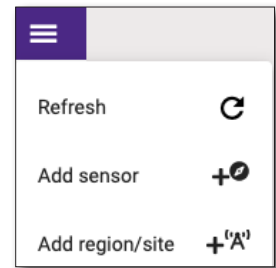
See “Creating user accounts” on page 20 for more details.

Creating regions and sites

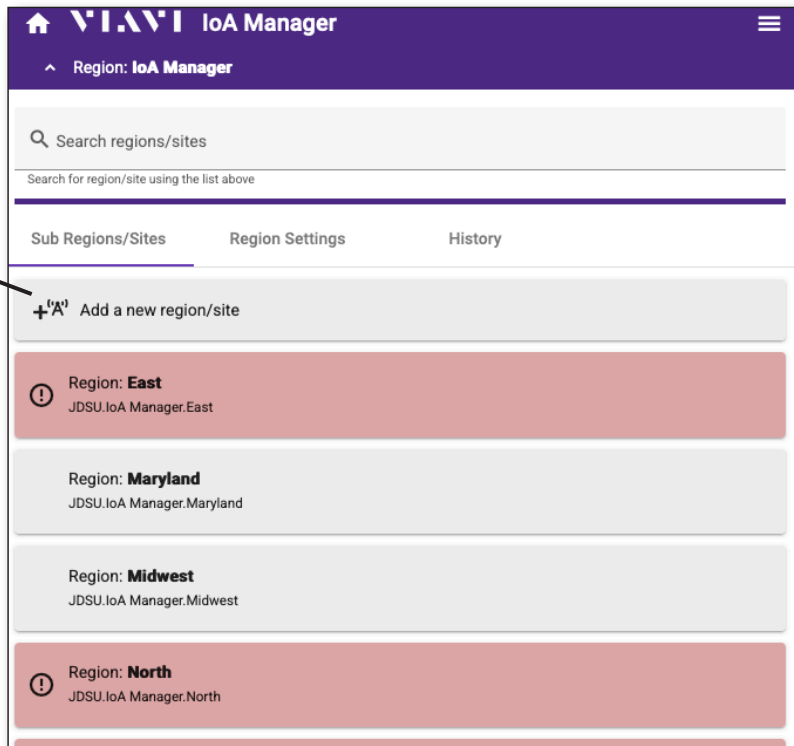
You can add a region / site from the Main menu or the Options menu.

You can also add more sites from each Region screen from the **Sub Regions / Sites** tab.

1. Select the **Add region/site** button. The Type screen is displayed.

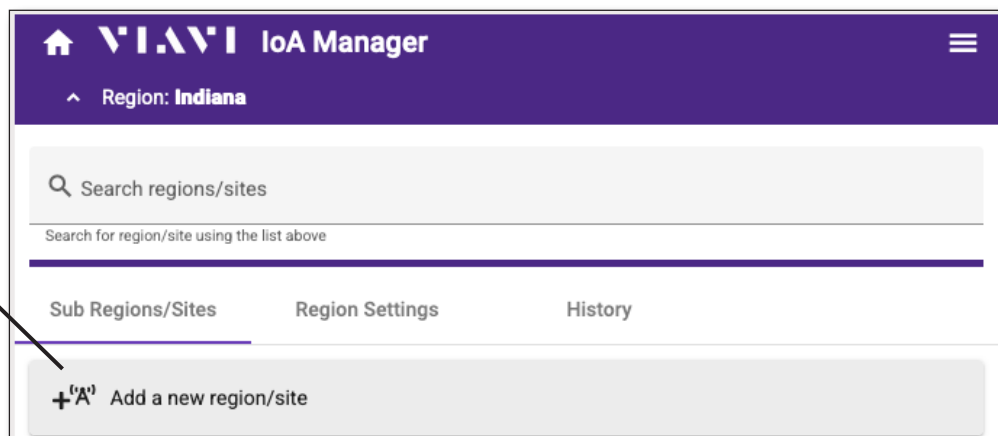


Add new region / site



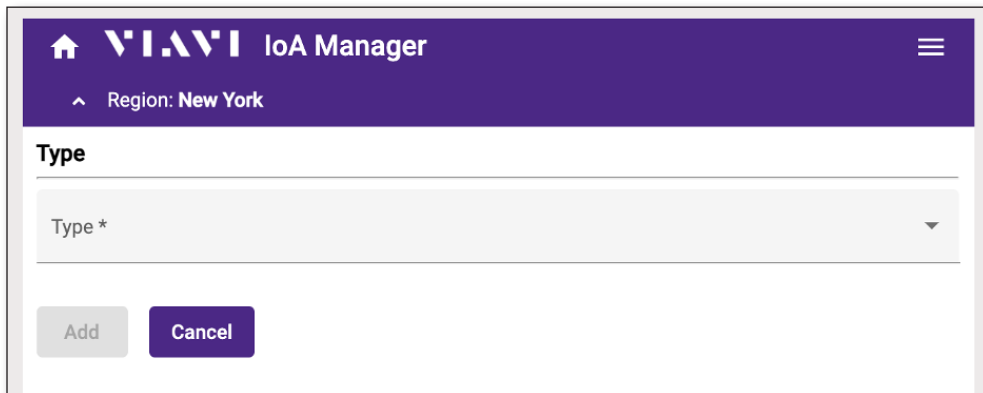
IoA Manager Main menu

Add new region / site



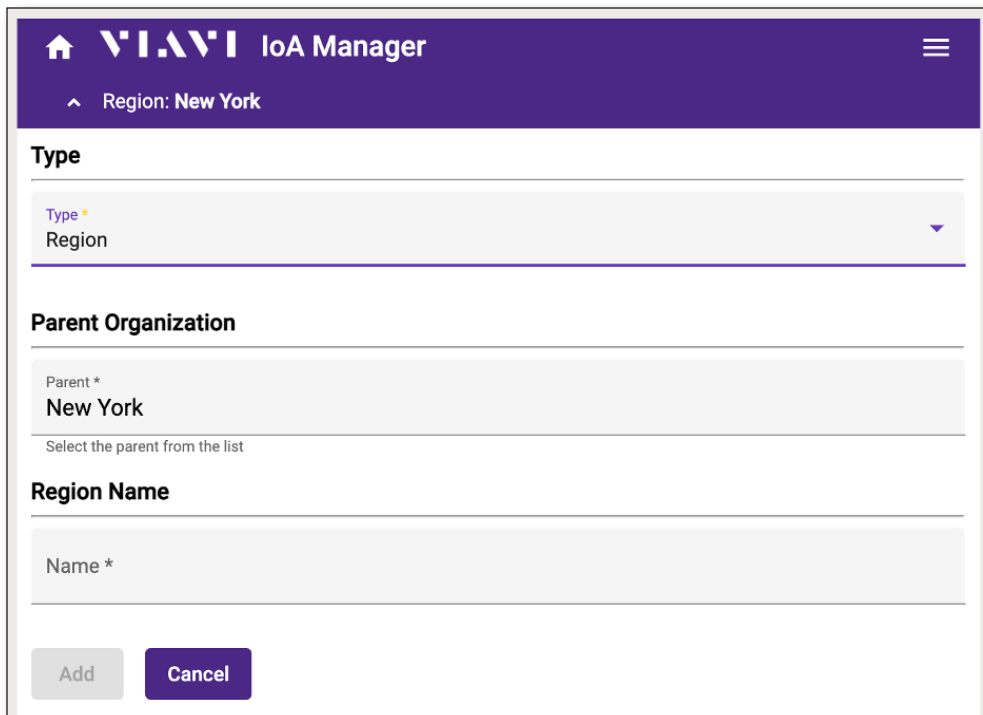
Region menu

2. From the Type screen, select the **Type** dropdown and choose the type (site or region).
3. For a region, enter the parent organization and region name.
4. For a site, enter the parent organization, region name, measurement settings, and alarm settings (see *"Measurement settings" on page 34*). The location information is optional, but must be entered in order to use the link to Google maps discussed earlier.
5. When done, select **Add**.



The screenshot shows the top navigation bar with the VIAMI IoA Manager logo and a home icon. Below the bar, it indicates the current region is 'New York'. The main section is titled 'Type' and contains a dropdown menu labeled 'Type *'. At the bottom, there are two buttons: 'Add' and 'Cancel'.

Creating a region or site



The screenshot shows the 'Region details' form. It includes a dropdown menu for 'Type *' with 'Region' selected. Below this is the 'Parent Organization' section with a text field containing 'New York' and a note: 'Select the parent from the list'. The 'Region Name' section has a text field labeled 'Name *'. At the bottom, there are 'Add' and 'Cancel' buttons.

Region details

Note: If you are navigated within a parent organization, it will be chosen as the default. You can adjust as necessary, as well.

IoA Manager

Region: IoA Manager

Search regions/sites

Search for region/site using the list above

Type

Type *
Site

Parent Organization

Parent *
New York

Select the parent from the list

Site Name

Name *

Measurement Settings

Measurement Interval *
every hour

Report Settings

Report Interval *
every day

Reporting Time Window (local time) *
15:00 - 16:00

Requires IoA 3.0.0 or later

Alarm Settings

Azimuth Threshold Degrees *
5

Tilt Threshold Degrees *
5

Roll Threshold Degrees *
5

Max Missed Reports *
1 report

Location

Street Address

City

State / Province

Postal Code

Country

Latitude

Longitude

Add Cancel

Version 0.0.13 © 2021 Viavi Solutions Inc.

Site details

Measurement settings

Measurement Interval – Sets the frequency that all IoAs within this site will take Az/Tilt/Roll measurements. The available selections are every 1/4 hour (i.e every 15 minutes), or every 1, 2, 3 or 4 hours.

Report settings

Report Interval – Sets the frequency that all IoAs within this site will use the IoT modem to communicate all measurements made during the selected interval. The available selections range from every day to every 7 days.

If a measurement interval of 1/4 hour is selected, the report interval selections are reduced to a range from every day to every 3 days.

Reporting Time Window (local time)– Sets the 1-hour window in which the IoA will report results back to the cloud (in 24-hr time format).

The specific time within that window may vary depending on communication load determined by the IoA. Requires IoA 3.0.0 or later.

The screenshot shows a settings panel with two main sections: 'Measurement Settings' and 'Report Settings'. Under 'Measurement Settings', there is a dropdown menu for 'Measurement Interval *' currently set to 'every hour'. Under 'Report Settings', there is a dropdown menu for 'Report Interval *' set to 'every day', and another dropdown menu for 'Reporting Time Window (local time) *' set to '15:00 - 16:00'. A note at the bottom states 'Requires IoA 3.0.0 or later'.

Measurement and report settings

Alarm settings

Here you can set the **Azimuth**, **Tilt** and **Roll** alarm thresholds for all IoAs added to the site.

Each time a sensor makes Az/T/R measurements as defined by the measurement interval, the sensor will compare the measured values to the target values established during sensor commissioning.

If a given measurement exceeds the alarm threshold relative to the target (either greater than or less than the target) for that parameter, then the IoA will declare an alarm and immediately transmit measurement results to StrataSync.

You can also set an alarm for **Max Missed Reports**.

| Alarm Settings | |
|-----------------------------|----------|
| Azimuth Threshold Degrees * | 5 |
| Tilt Threshold Degrees * | 5 |
| Roll Threshold Degrees * | 5 |
| Max Missed Reports * | 1 report |

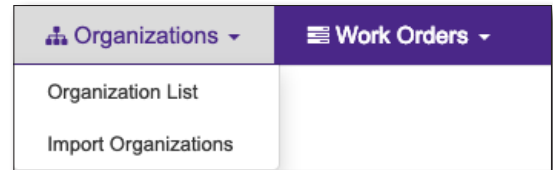
Alarm settings

Deleting regions and sites

In order to delete regions and sites, you must use StrataSync.

To delete sites, all sensors at the site must be deleted first, as well.

1. Login to StrataSync.
2. Select the **Organizations** tab in the Main menu to bring up the Organizations dropdown.
3. Select the **Organizations** tab, and then select **Organization List**. The Organization List screen appears.
4. In the **Manage Organizations** tab, select the site/region to delete.

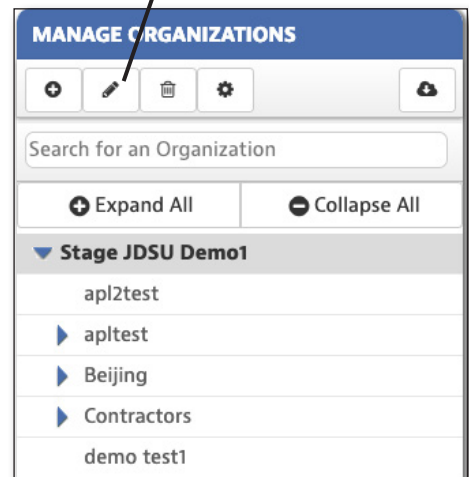


Organizations dropdown menu

For regions that contain sites, this procedure needs to be performed for all the children first before the parent can be deleted.

5. After selecting the site/region, click the **Edit** button. The Edit Organization screen is displayed.
6. Change the "Manager Tech ID" to the **root.ioa.manager** tech ID that was set up earlier.
7. Select the **Save**.

Edit Organization

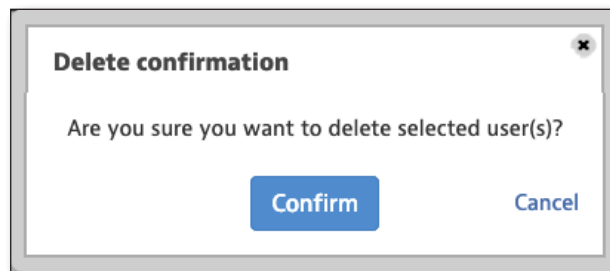
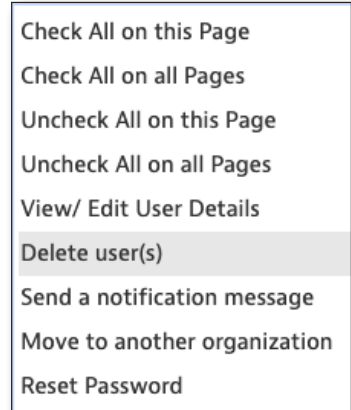


Manager Tech ID

Edit Organization
 * Organization Name: SomeNewSite
 * Manager Tech ID: root.ioa.manager.somenewsite
 * Manager First Name: root.ioa.manager
 * Manager Last Name: SomeNewSite
 Contractor ID:
 Set maximum time for options checkout: 1 days

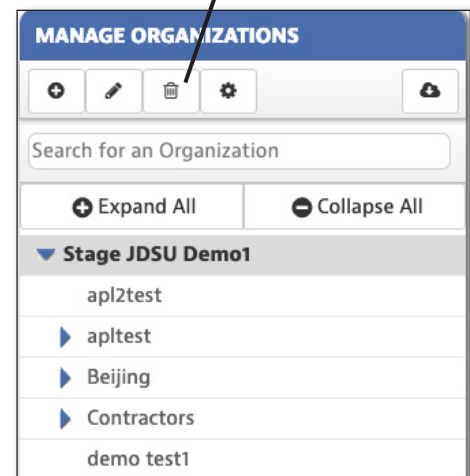
Edit Organization
 * Organization Name: SomeNewSite
 * Manager Tech ID: root.ioa.manager
 * Manager First Name: root.ioa.manager
 * Manager Last Name: IoA Manager
 Contractor ID:
 Set maximum time for options checkout: 1 days

8. From the **People** tab, right-click the Site/Region Manager (or use the **Action** dropdown) and select **Delete users**.
9. A confirmation screen asks you to confirm. Click **Confirm**.

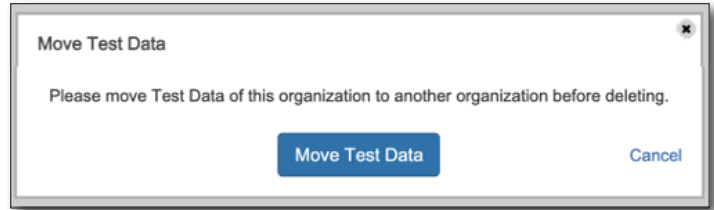


10. All Assets and People must be deleted before a Site/Region can be deleted. Ensure that both tabs display a zero count (0) before proceeding.
11. From the **Manage Organizations** tab, select the organization you want to delete, then select the **Delete** button at the top.

Delete Organization

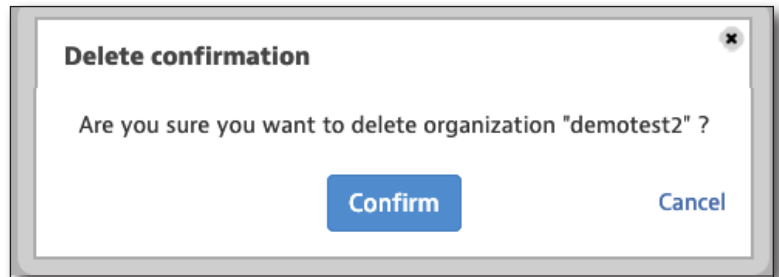
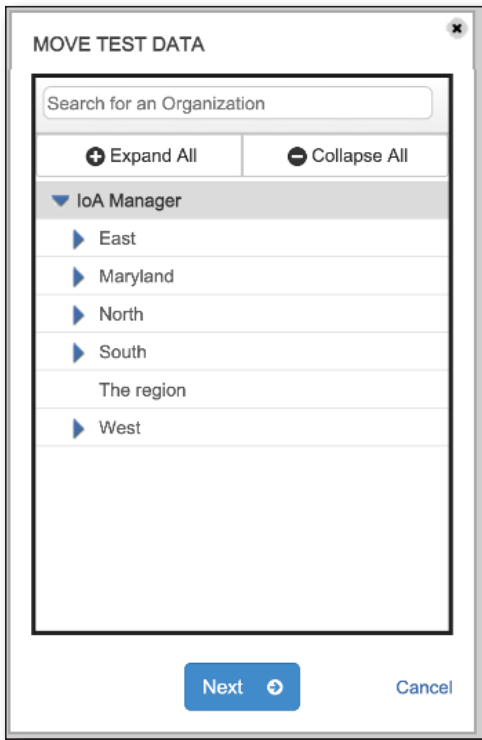


12. If the Organization is a Site that contains test data, you will be prompted to move the test data before the Site can be deleted. Select **Move Test Data**.



13. Select any Organization and click **Next**.

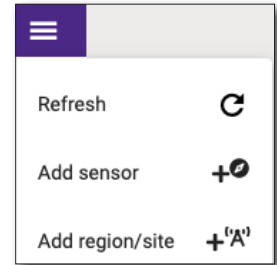
14. A confirmation screen asks you to confirm deletion. Click **Confirm**.



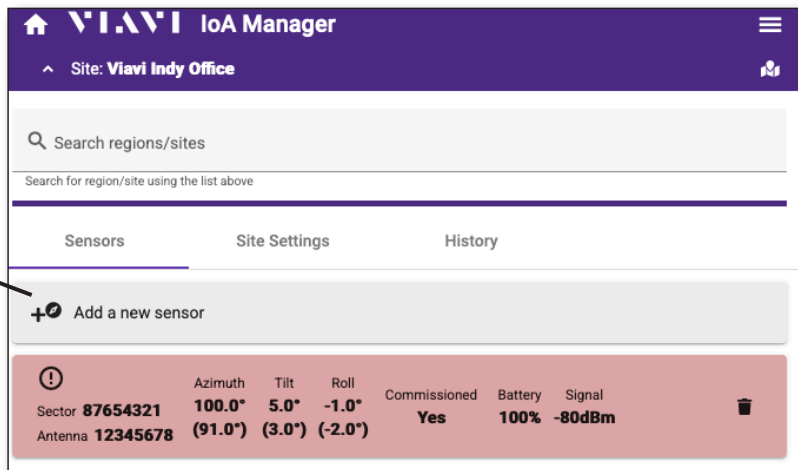
Adding sensors

When you have navigated to a site, you can add a sensor from the Main menu or the Options menu.

1. Select the **Add sensor** button. The Sensor screen is displayed.



Add new sensor



Adding a sensor

2. From the Sensor screen, enter the parent site, sensor identification (IMEI), antenna identification, and target orientation.
3. When done, select **Add**.

The screenshot shows the 'Sensor details' form in the Viavi IoA Manager application. The header bar is purple and contains the Viavi logo, the text 'IoA Manager', and a home icon. Below the header, the current site is identified as 'Viavi Indy Office'. The form is organized into four sections, each with a title and a dropdown menu:

- Parent Site:** The dropdown is labeled 'Site *' and currently shows 'Viavi Indy Office'. A note below the dropdown says 'Select the site from the list'.
- Sensor Identification:** The dropdown is labeled 'International Mobile Equipment Identity *'.
- Antenna Identification:** This section contains two dropdowns: 'Sector *' and 'Antenna *'.
- Target Orientation:** This section contains three dropdowns: 'Azimuth Degrees *', 'Tilt Degrees *', and 'Roll Degrees *'.

At the bottom of the form, there is a dropdown menu for 'Install Location *' and two buttons: a light grey 'Add' button and a purple 'Cancel' button.

Sensor details

Note: If you are navigated within a parent site, it will be chosen as the default. You can adjust as necessary, as well.

Target orientation

These fields set the **Target Azimuth**, **Tilt**, and **Roll** values of the antenna to which the sensor will be mounted. Values must be entered as integer degrees (no decimals).

These values are normally obtained from the cell site RF design / plan, or from direct measurements using an antenna alignment tool such as VIAVI RF Vision.

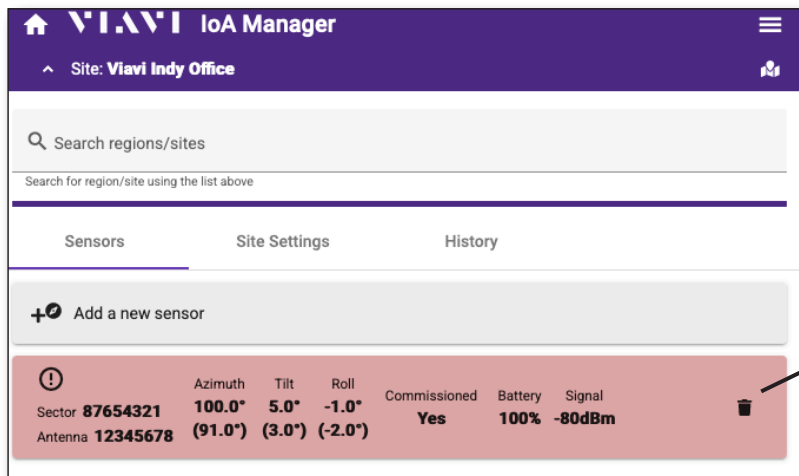
The target values will be transmitted to the IoA when the IoA is commissioned. See *"Commissioning sensors" on page 43*.

Deleting sensors

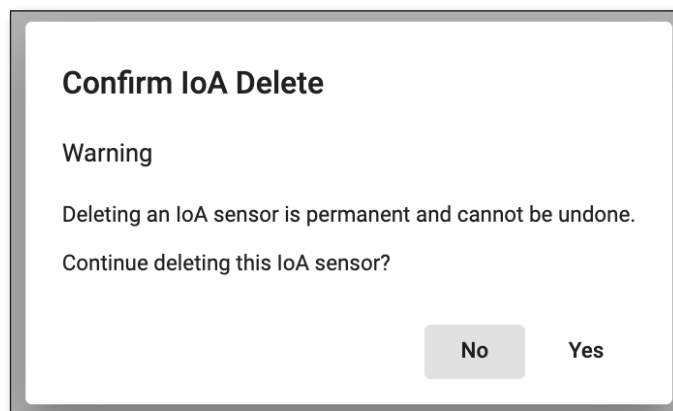
You can delete a sensor from the Site menu.

To download your data from StrataSync before deleting the sensor, see *“Downloading IoA sensor and save data history files” on page 54.*

1. Navigate to the site that contains the sensor to be deleted, then select the **Trash can** button.
2. A confirmation screen asks you to confirm. Click **Yes**.



Deleting a sensor



Commissioning sensors

You can commission a sensor from the Sensor details screen.

Before sensors will measure and report data / alarms, they must be installed on an antenna and then commissioned (i.e. "put into service") by the user.

The commissioning step will send the target azimuth, tilt and roll values to the sensor as a beginning reference point and start the measurement, reporting, and alarming processes.

All sensor measurements and alarm conditions will now be made relative to the starting target values of azimuth, tilt, and roll provided to the sensor during commissioning, and the alarm thresholds established for the site as a whole.

Note: It may take up to one full reporting interval before the sensor begins reporting.

1. Navigate to the sensor to be commissioned, then select **Sensor Settings** tab at the top. The Sensor settings screen is displayed.
2. Select **Commission** at the bottom.
3. A confirmation screen asks you to confirm. Click **Yes**. The sensor will be commissioned the next time it reports to StrataSync.

**Sensor Settings
tab**

VIavi IoA Manager
Site: Viavi Indy Office
Sector: A Antenna: 5G

Status **Sensor Settings** History

Sensor Identification

International Mobile Equipment Identity
354724645459089

Antenna Identification

Sector *
A

Antenna *
5G

Target Orientation

Azimuth Degrees *
9

Tilt Degrees *
2

Roll Degrees *
1

Install Location *
Back

Commission Reset

Commission

Commissioning a sensor

Confirm IoA Sensor Installation

Warning

Commissioning must only be performed after final installation of all sensors.
IoA movement during/after commissioning may generate alarms.

Continue commissioning this IoA sensor?

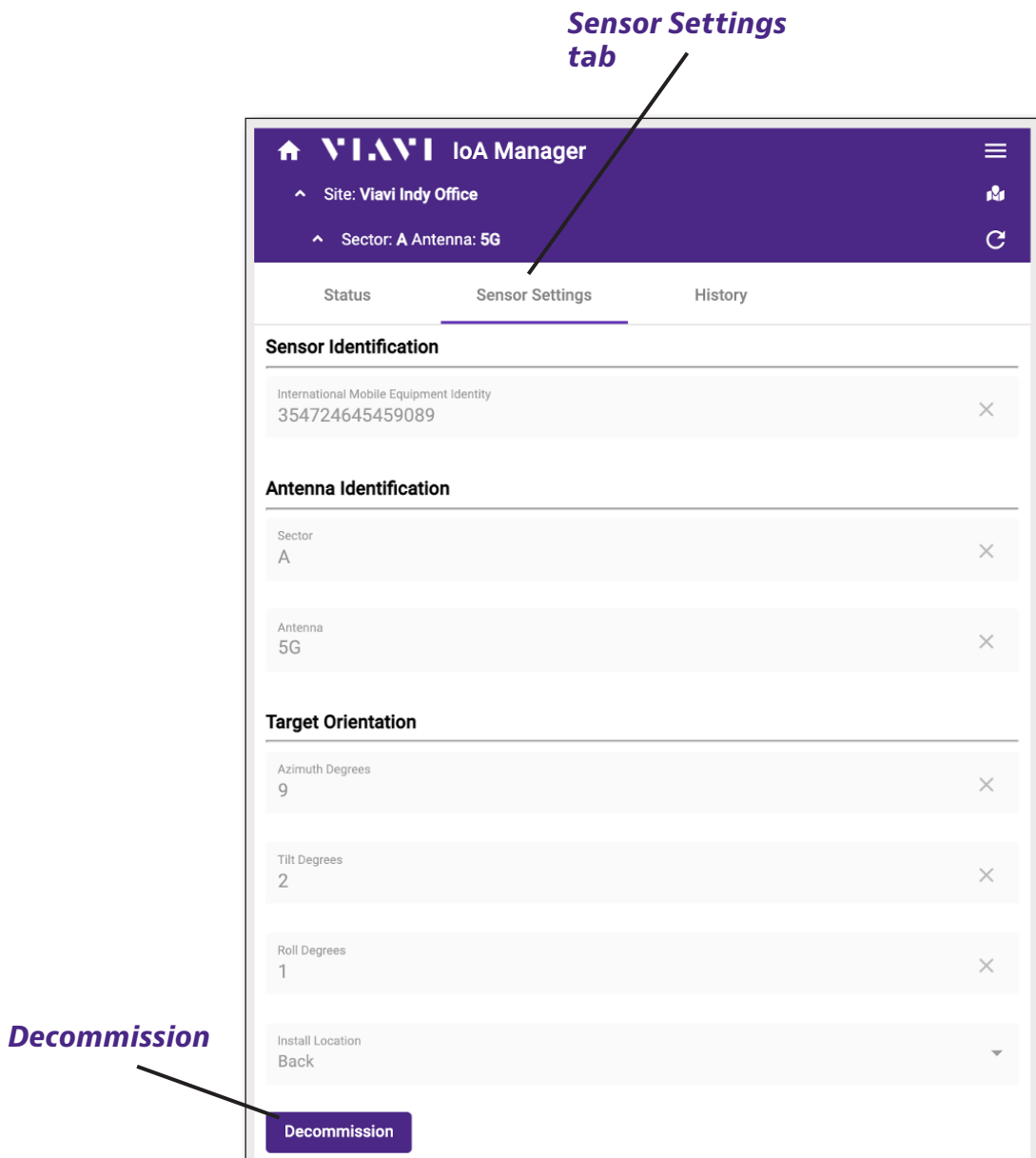
No Yes

Decommissioning sensors

You can decommission a sensor from the Sensor details screen.

1. On the sensor you want to decommission, select the **Sensor Settings** tab at the top. The Sensor settings screen is displayed.
2. Select **Decommission** at the bottom. The sensor will be decommissioned the next time it reports to StrataSync, but the configuration can be changed immediately.

Note that while the sensor is commissioned, the sensor settings fields are disabled. The sensor must first be decommissioned before the settings may be edited. The sensor must be (re)commissioned for the new settings to take effect.



Decommissioning a sensor

Viewing IoA sensor, site, and region status

The status of the Sensors, Sites, and Regions are cascaded in the application and conveyed via colors and icons on the “cards”.

There are three possible statuses: Pass, Fail, and Indeterminate.

The Pass status is conveyed with the green color and the checkmark icon.

The correct way to interpret this is that all sub-regions, sites, and/or sensors contained within this “New York” region are passing or indeterminate.

Notice the “breadcrumbs” for the full path to this region are shown below the region: **JDSU.IoA Manager.East.New York**. This helps you understand where it sits in the hierarchy.



The Fail status is conveyed with the red color and the attention icon.

The correct way to interpret this is that at least one sensor contained within this “North” region has an error that should be investigated. This could be an orientation alarm, or it could be due to a sensor that has not reported recently.

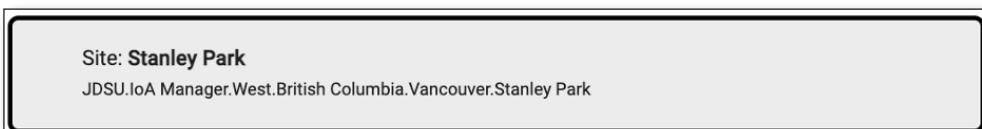
Notice the “breadcrumbs” for the full path to this region are shown below the region: **JDSU.IoA Manager.North**. This helps you understand where it sits in the hierarchy.



The Indeterminate status is conveyed with the standard grey color and no icon.

The correct way to interpret this is that all sub-regions, sites, and/or sensors contained within this “Stanley Park” site has an Indeterminate status. The Indeterminate status could be due to a newly added sensor that has not yet reported. It can also be due to a sensor that has been recently commissioned and has not yet reported since the commissioning change, or because no sensors have yet been added to this region or its sub-region.

Notice the “breadcrumbs” for the full path to this site are shown below the site: **JDSU.IoA Manager.West.British Columbia.Vancouver.Stanely Park**. This helps you understand where it sits in the hierarchy.



The status determination is first made by examining all sensors. As each sensor is examined, it is determined if the Sensor status is Pass, Fail, or Indeterminate. The status of each Sensor is set in the data structure.

Next, each Site is evaluated. If all the Sensors contained within a Site are passing or indeterminate, the Site is determined to be passing. If at least one of the Sensors contained within a Site is failing, the Site is determined to be failing. Otherwise, the Site is determined to be Indeterminate (i.e. all sensors are indeterminate). The status of the Site is saved in the data structure.






This process repeats for all Regions until the top-level Region is reached. Any failing Sensor will cause the Site and the Region(s) in its organizational path to be considered failing. This allows easy traversal of the organization structure to find failing sensors by navigating to the failing Regions and Sites.

Consider the following example of a Site with 3 Sensors.

If one Sensor has a Passing status, one Sensor has an Indeterminate status, and one Sensor has a Failing status the status of the Site will be set to Failing. Additionally, any Regions up to and including the Region at the top of the visibility will have a status of Failing (assuming the Site is not at the top of the visibility).

If two Sensors have a Passing status and one Sensor has an Indeterminate status, the status of the Site will be set to Passing status.

The only way that the Site has a status of Indeterminate is if all 3 Sensors have an Indeterminate status.


| | | | | | | | | |
|---|---|------------------------------------|---------------------------------|---------------------------------|----------------------------|------------------------|-------------------------|---|
|  | Sector A Antenna 4G | Azimuth 24.0° (1.0°) | Tilt -17.5° (0.5°) | Roll -0.5° (-0.5°) | Commissioned Yes | Battery 100% | Signal -92dBm |  |
|  | Sector IoA34 Antenna ANT87 | Azimuth 64.0° (52.0°) | Tilt 30.7° (1.7°) | Roll 28.4° (-0.6°) | Commissioned Yes | Battery 100% | Signal -99dBm |  |
| | Sector IOA-nFW Antenna 205 | Azimuth --° (--°) | Tilt --° (--°) | Roll --° (--°) | Commissioned No | Battery -- | Signal -- |  |

Passing, failing, and indeterminate sensors

Once the Sensor level is reached, the Status tab gives specific detail on any error conditions.

| Status | Sensor Settings | History | |
|---|------------------|-------------|-------------|
| Measurements | | | |
| Measured: | Azimuth: 64.0° 🚨 | Tilt: 30.7° | Roll: 28.4° |
| Delta: | 52.0° 🚨 | 1.7° | -0.6° |
| Target: | 12° | 29° | 29° |
| Alarm: | 4° | 4° | 4° |
| Last Report: Aug 17, 2021, 6:43:00 PM UTC | | | |
| Wireless Signal Strength | | | |
| Receive Signal Strength: -99dBm | | | |
| Sensor Information | | | |
| IMEI: 356726109315820 | | | |
| Sensor Model: IoA-1000 | | | |
| FW: 2.0.2c | | | |
| HW: 0 | | | |
| Modem: SARA-R410M-02B-03 | | | |
| SIM ICCID: 89014103273079125500 | | | |
| Last Update: Aug 17, 2021, 2:42:59 PM | | | |
| Commissioned: Yes | | | |
| Battery: 100% | | | |
| Status | | | |
| Antenna is out of alignment | | | |
| Sensor has not reported recently | | | |

Sensor alarm, out of alignment

| Status | Sensor Settings | History | |
|--|-----------------|---------|-------|
| Measurements | | | |
| | Azimuth | Tilt | Roll |
| Measured: | 225.0° | -5.0° | 0.9° |
| Delta: | 1.0° | 0.0° | -0.1° |
| Target: | 224° | -5° | 1° |
| Alarm: | 5° | 5° | 5° |
| Last Report: Aug 24, 2021, 11:36:00 AM UTC | | | |
| Wireless Signal Strength | | | |
| Receive Signal Strength: -90dBm | | | |
| Sensor Information | | | |
| IMEI: 356441119299069 | | | |
| Sensor Model: IoA-1000 | | | |
| FW: 2.0.3c | | | |
| HW: 2 | | | |
| Modem: SARA-R410M-02B-03 | | | |
| SIM ICCID: 89014103273086474099 | | | |
| Last Update: Aug 24, 2021, 7:36:08 AM | | | |
| Commissioned: Yes | | | |
| Battery: 25%  | | | |
| Status | | | |
| Sensor battery is low | | | |

Sensor alarm, low battery

| Status | Sensor Settings | History | |
|---|-----------------|---------|------|
| Measurements | | | |
| | Azimuth | Tilt | Roll |
| Measured: | 9.0° | 2.1° | 1.0° |
| Delta: | 0.0° | 0.1° | 0.0° |
| Target: | 9° | 2° | 1° |
| Alarm: | 7° | 7° | 6° |
| Last Report: Aug 24, 2021, 1:12:00 PM UTC | | | |
| Wireless Signal Strength | | | |
| Receive Signal Strength: -125dBm 🚨 | | | |
| Sensor Information | | | |
| IMEI: 354724645459089 | | | |
| Sensor Model: IoA-1000 | | | |
| FW: 2.0.5c | | | |
| HW: 2 | | | |
| Modem: SARA-R410M-02B-03 | | | |
| SIM ICCID: 89014103273079125443 | | | |
| Last Update: Aug 24, 2021, 9:13:17 AM | | | |
| Commissioned: Yes | | | |
| Battery: 100% | | | |
| Status | | | |
| Sensor reported weak signal | | | |

Sensor alarm, weak signal

If the Sensor hasn't reported since the last commissioning change, the measured and delta values will be dashed out.

| Status | Sensor Settings | History | |
|--|-----------------|---------|------|
| Measurements | | | |
| | Azimuth | Tilt | Roll |
| Measured: | -- | -- | -- |
| Delta: | -- | -- | -- |
| Target: | 9° | 2° | 1° |
| Alarm: | 7° | 7° | 6° |
| Last Report: Aug 24, 2021, 10:58:00 AM UTC | | | |
| Wireless Signal Strength | | | |
| Receive Signal Strength: -96dBm | | | |
| Sensor Information | | | |
| IMEI: 354724645459089 | | | |
| Sensor Model: IoA-1000 | | | |
| FW: 2.0.5c | | | |
| HW: 2 | | | |
| Modem: SARA-R410M-02B-03 | | | |
| SIM ICCID: 89014103273079125443 | | | |
| Last Update: Aug 24, 2021, 9:14:57 AM | | | |
| Commissioned: Yes | | | |
| Battery: 100% | | | |
| Status | | | |
| Sensor is operating normally | | | |

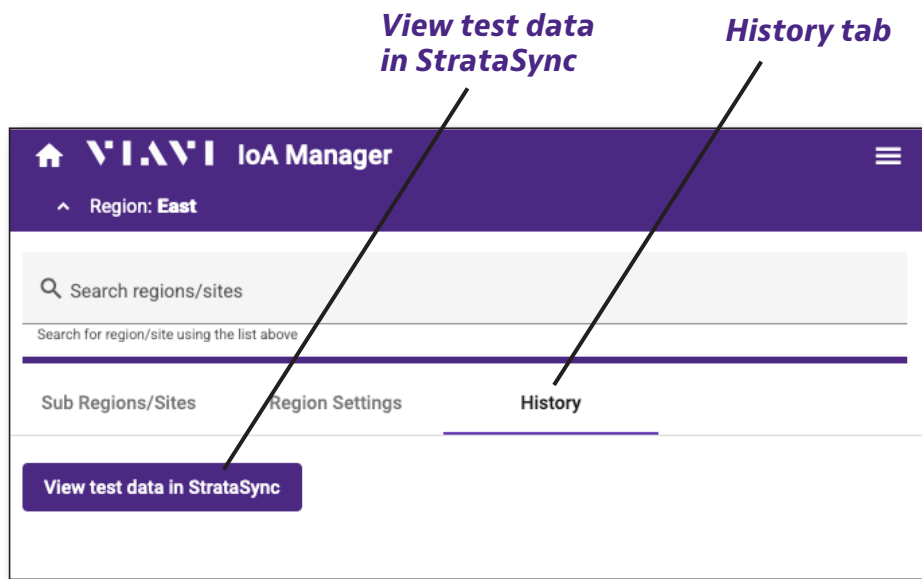
Sensor operating normally, but has not reported since the last commissioning change

Viewing IoA sensor JSON results files

IoA Manager provides links to view test data in StrataSync. These links are accessed in the **History** tab for regions, sites, or individual sensors.

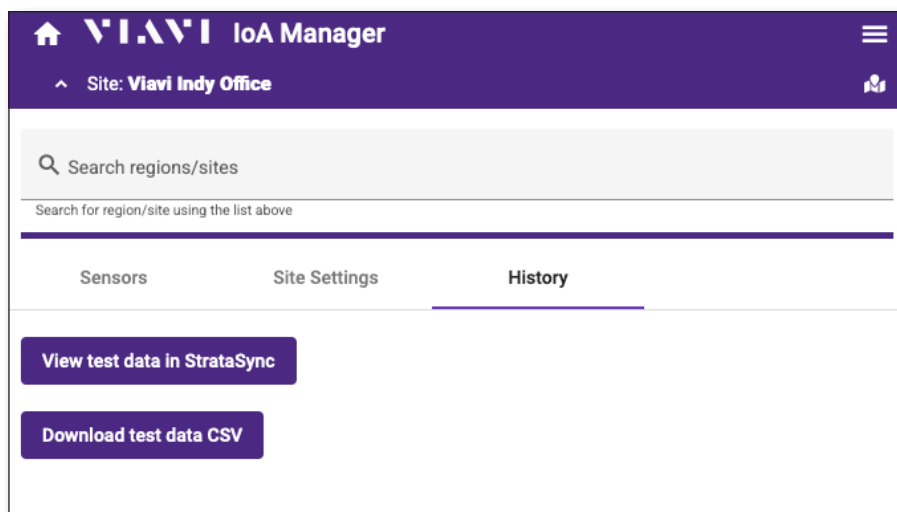
Select the **View test data in StrataSync** button.

When clicked at a region level, you will be taken to StrataSync and shown test data for the entire region.



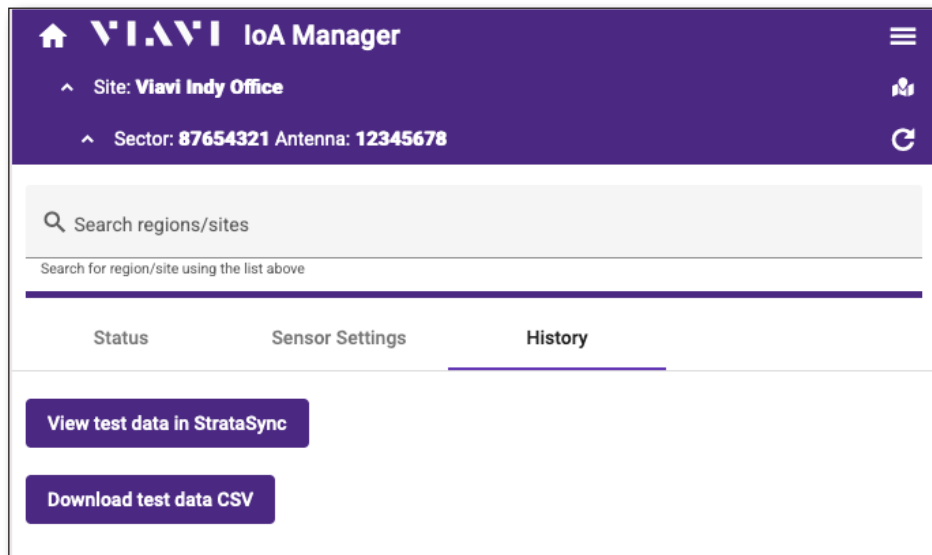
Region level, History tab

When clicked at a site level, you will be taken to StrataSync and shown test data for the entire site.



Site level, History tab

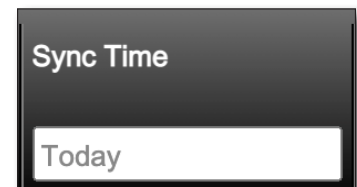
When clicked at an individual sensor level, you will be taken to StrataSync and shown test data for just that sensor.



Sensor level, History tab

Depending on the time of day and how frequently the sensors are configured to report, you may need to adjust the **Sync Time** filter in StrataSync.

Once the desired test data is shown, you can double click on test records to view the HTML report or select one or more records and select **Download** from the **Action** menu to download the raw data.



| Asset Type | Asset Unique ID | Work Order ID | Tech ID | Organization Name | Data Type | Status | Creation Time | Sync Time | Modified On |
|-------------------------------------|-----------------|----------------|---------|----------------------------------|-----------|--------|---------------------|---------------------|-------------|
| <input checked="" type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Pass | 08/22/2021 02:51 PM | 08/23/2021 02:36 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Fail | 08/21/2021 02:51 PM | 08/22/2021 02:36 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Pass | 08/20/2021 02:51 PM | 08/21/2021 02:37 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Pass | 08/19/2021 02:51 PM | 08/20/2021 02:35 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Pass | 08/18/2021 02:51 PM | 08/19/2021 02:36 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Pass | 08/17/2021 02:51 PM | 08/18/2021 02:35 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Pass | 08/16/2021 02:51 PM | 08/17/2021 02:36 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Fail | 08/15/2021 02:51 PM | 08/16/2021 02:36 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Fail | 08/14/2021 02:51 PM | 08/15/2021 02:36 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Pass | 08/13/2021 02:51 PM | 08/14/2021 02:36 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Pass | 08/12/2021 02:51 PM | 08/13/2021 02:35 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Pass | 08/10/2021 02:51 PM | 08/11/2021 02:36 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Pass | 08/09/2021 02:51 PM | 08/10/2021 02:36 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Pass | 08/08/2021 02:51 PM | 08/09/2021 02:36 PM | |
| <input type="checkbox"/> | IoA | 35644119299069 | | root.ioa.managero... Tower 12345 | IoA | Pass | 08/07/2021 02:51 PM | 08/08/2021 02:35 PM | |

IoA sensor test data in StrataSync

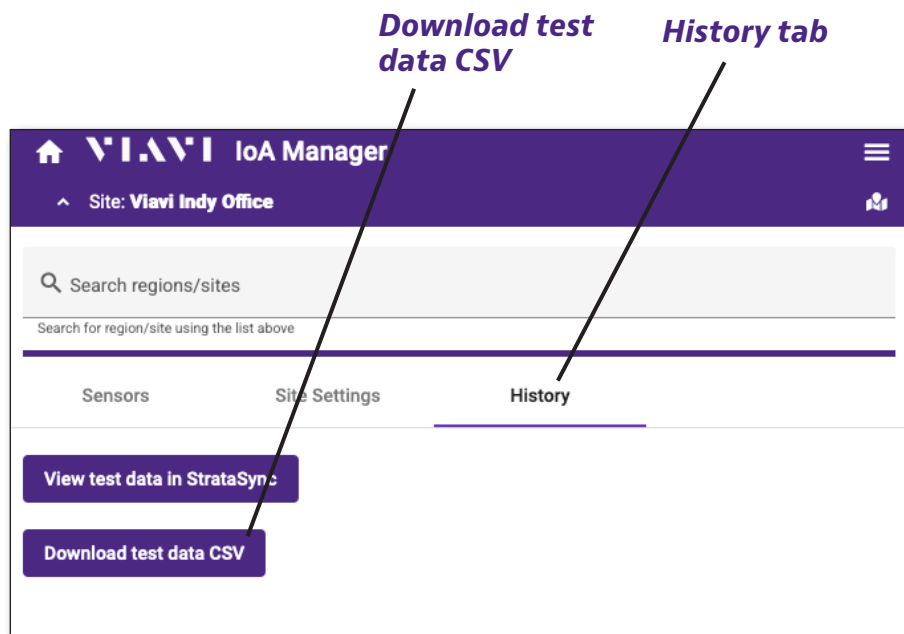
Downloading IoA sensor and save data history files

IoA Manager also provides links to download data from sites and sensors. These links are accessed in the **History** tab for sites, or individual sensors. This functionality is not available at the region level

Select the **Download test data CSV** button.

When clicked at a site level, the IoA Manager will retrieve the test data for the past 7 days for all sensors contained within the site and package it in a CSV file for download.

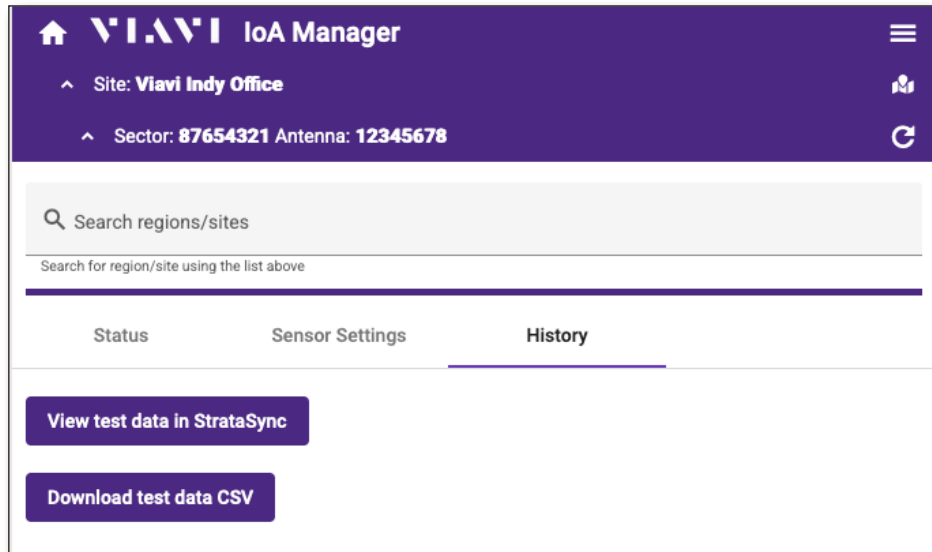
The file will be named with the site name. This button is omitted if the site contains no sensors.



Site level, History tab

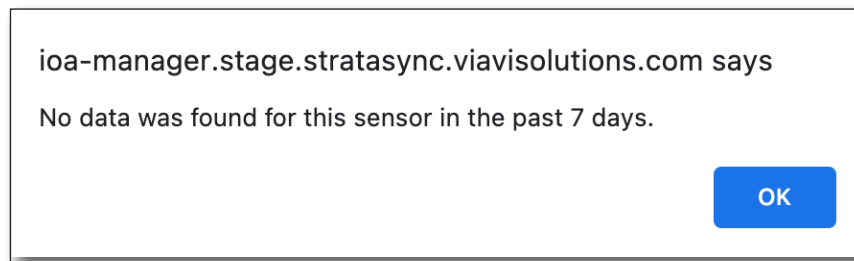
When clicked at an individual sensor level, the IoA Manager will retrieve the test data for the sensor for the prior 7 days and package it into a CSV file for download.

The file will be named with the IMEI of the sensor.



Sensor level, History tab

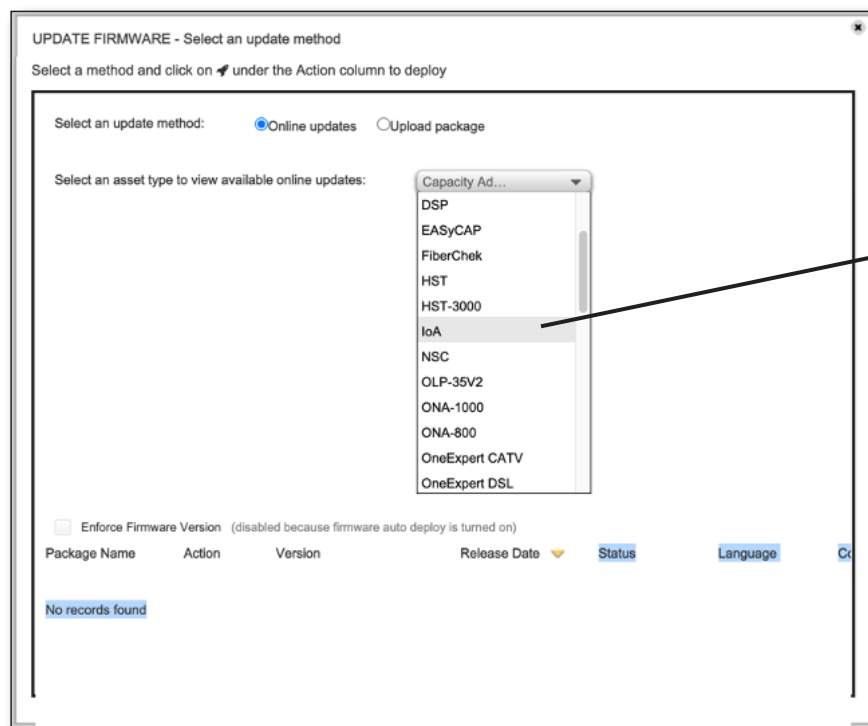
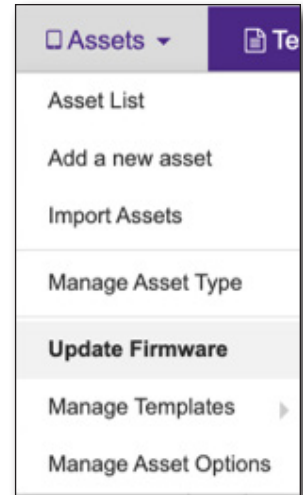
If no data is found, this error will appear.



Updating IoA sensor firmware

You can update sensor firmware easily through StrataSync.

1. Login to StrataSync.
2. Select the **Assets** tab in the Main menu, and then select **Update Firmware**. The Update Firmware screen appears.
3. Select **Online updates** as the update method, then select **IoA** as the asset type from the dropdown. (Upload package deployment is not supported for any Sensors).
4. Click **Next**. A list of available firmware packages is displayed.




*IoA
asset
type*

**Update Firmware screen,
with IoA selected**

5. Click the **Deploy (rocket)** button for the package you want to deploy.



UPDATE FIRMWARE - Select an update method

Select a method and click on  under the Action column to deploy

Select an update method: Online updates Upload package

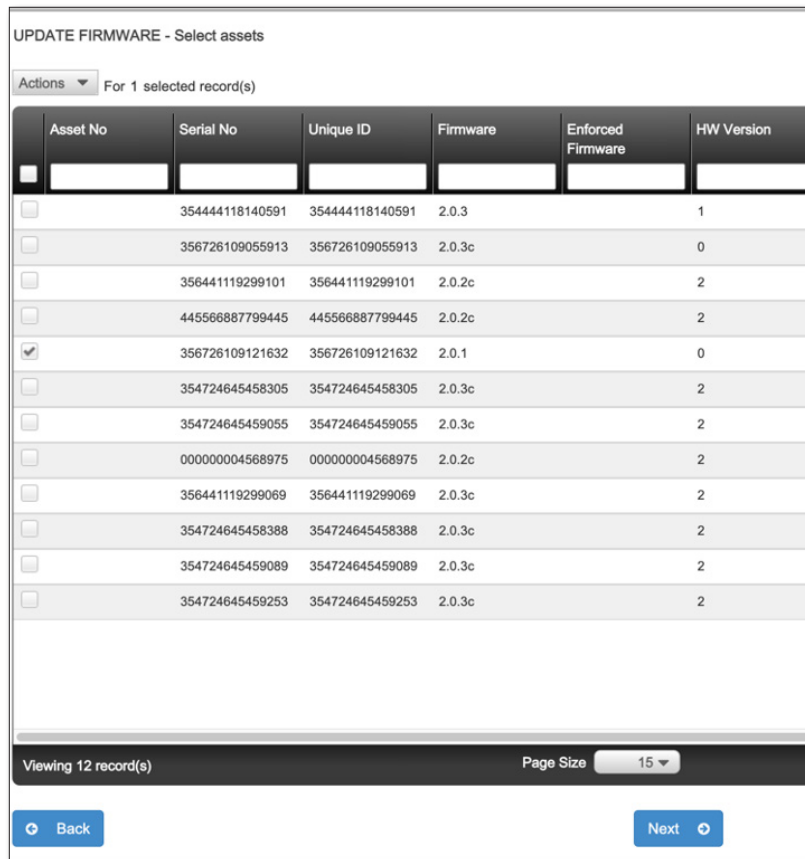
Select an asset type to view available online updates:

Enforce Firmware Version (disabled because firmware auto deploy is turned on)

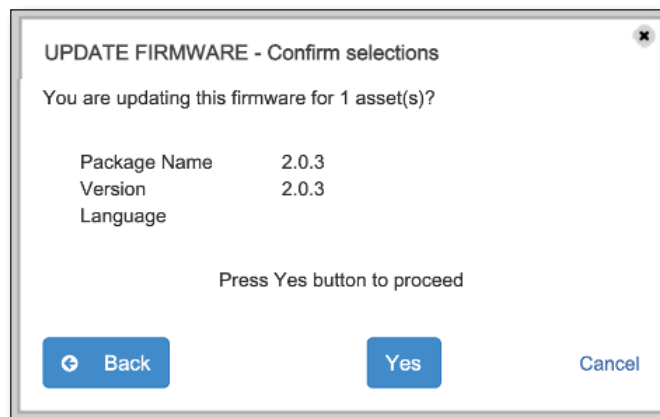
| Package Name | Action | Version | Release Date | Status | Language | Co |
|--------------|---|---------|--------------|--------|----------|----|
| 2.0.3 |   | 2.0.3 | 2021/06/07 | Beta | | |

Deploy button

6. Select the Sensor(s) that you would like to deploy the firmware to and click **Next**.



7. A confirmation screen asks you to confirm. Click **Yes**.



The firmware update will be deployed to the Sensor the next time the Sensor synchronizes. This can take up to a week depending on the configured report interval. If the update is successful, the following time the Sensor synchronizes it will report the updated firmware version. If the network connection between the Sensor and StrataSync is poor the update may fail. The Sensor will automatically retry the update on subsequent synchronizations to allow additional time for the network conditions to improve.

Additional information

For more detailed information, contact us at CATVsupport@viavisolutions.com for these additional documents.

[IoA-1000 User Guide](#)

[IoA-1000 Quick Start Guide](#)

[IoA API Developer Guides](#)

[StrataSync User Guide](#)

[StrataSync Software Release notes](#)



Sept 2022
English

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