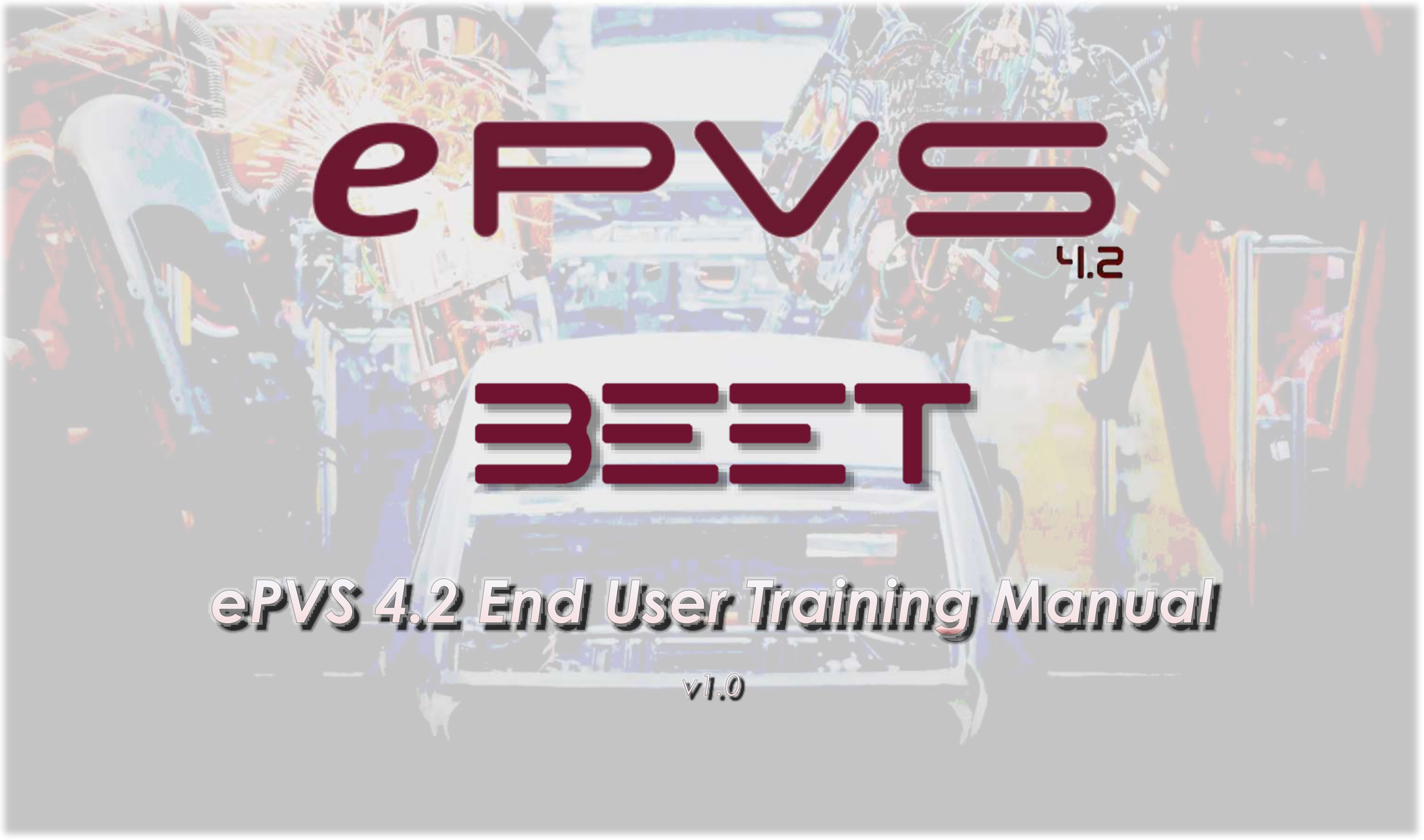

ePVS 4.2 End User Training Manual

v1.0

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Use the BEET icon to go to the Table of Contents

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Use the Sectional icon to go to the Table of Sections

Table of Sections

Click on a button to go to that section

First Time

Top Menu

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Log In to ePVS

- **Login**
- **Password**
- **Remember me**
- **Did you forget your password?**
- **Reset your password**
- **Change your Password**
- **Log Out**

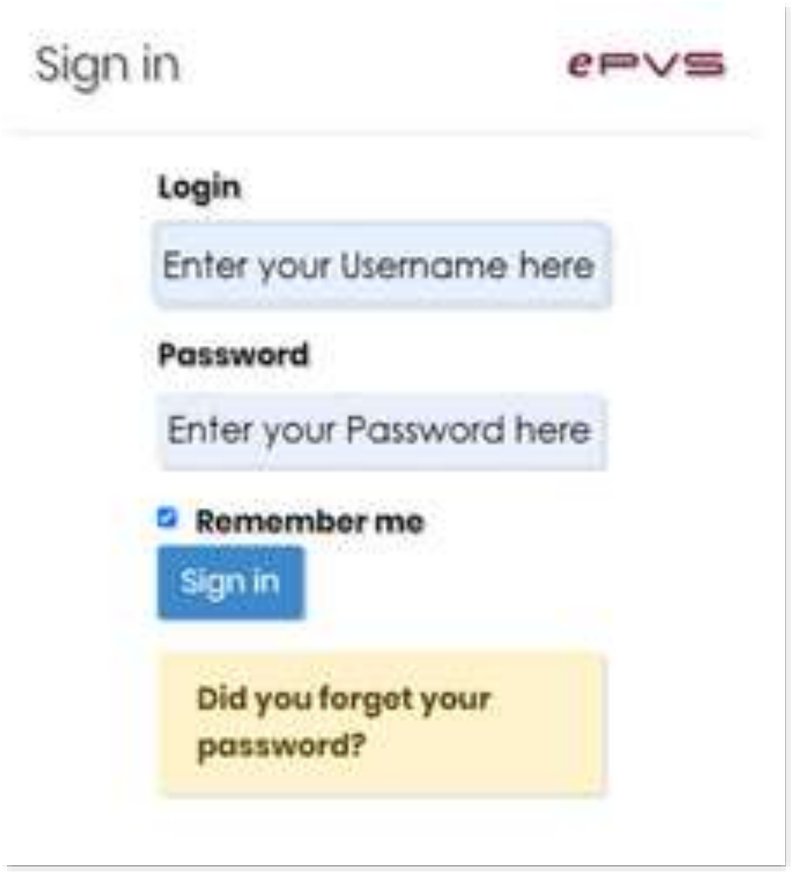
To log on to ePVS, enter your username in the edit box provided. Enter your password, then click the Submit button to log on.

If the user wants to have the Username and Password remembered, check off the Remember Me checkbox.

If you forget your password, you can click on the **Forgot Password** button. This will open another window where you can input your email. Once entered, click the **Submit** button, and an email will be sent to your Inbox with a changed password and instructions.

To view a demonstration, **click here. Logging On**

Signing In



Login

Under the login box, the user will enter his username. If you do not have a username, contact an Administrator, and have one created. For more information see the User Maintenance section.

Password

In the password box, the user can enter your password. If you are assigned a new profile setup, a password will be sent to you to the email that you registered with. The password will be a random password generator by the ePVS. This can be used to initially log on to the browser. Once logged in the user can go to the settings tab in the upper right-hand side of the ePVS browser. Go to account settings, and select the password tab. It is there where you can change the password to one of your likings.

Remember me

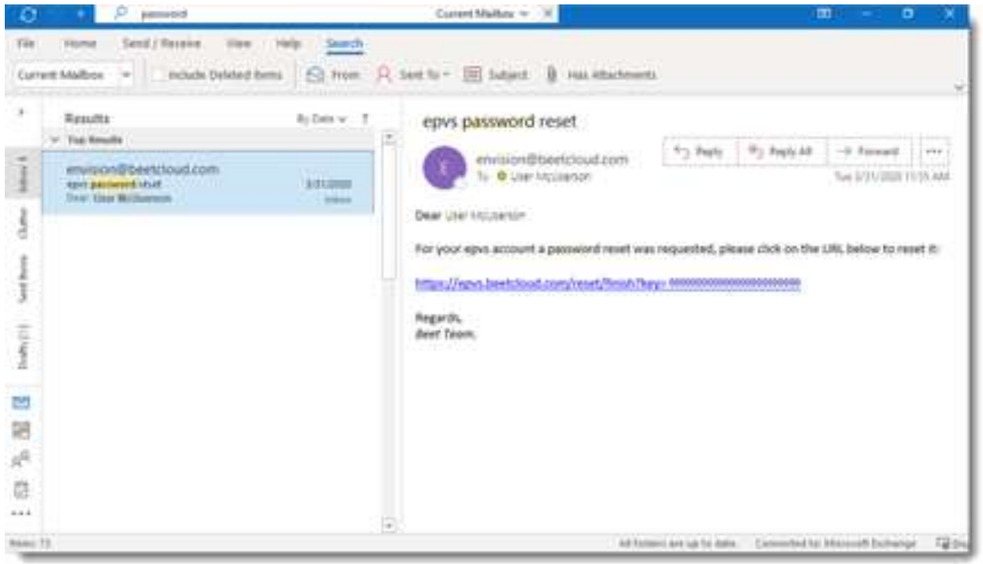
To make logins easier the user can select the remember me check box. This will allow you to sign in quicker. Simply check the box next to the remember me.
Special note: This option should not be used on shared computers.

Did you forget your password?

If you have forgotten your password the user can simply click the, did you forget your password button? This action will open another window to reset your password. Simply enter the email address that you used to register, then click the reset password. An email will be sent to you with a reset password option. Follow directions to log back into the browser.

Reset your password

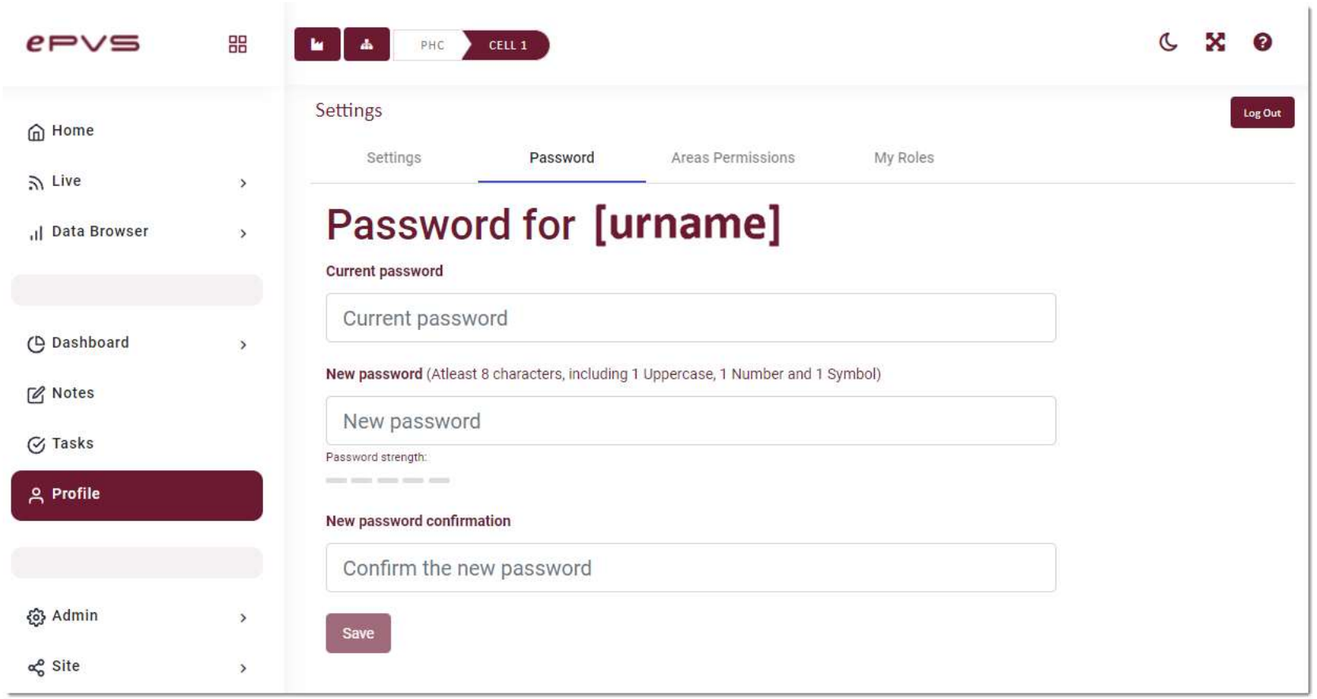
To reset your password, simply input the email address you used in registering in the software. Click the reset password button, and an email will be sent to you with instructions for resetting your password.
The email will be marked **epvs password reset**. Click on the link, and it will take you to a reset screen.



Change your Password

Once you have logged on with your initial password, or if you want to change your password, it can be done by going to the settings icon in the upper-right-hand side of the browser. Click on it. A drop-down menu will appear where you can select account settings.

The settings window will open. Select the password tab. Now enter your current password, then enter your new password. Enter the new password again for confirmation. Once it is correct, click the save button to complete.



Log Out

To Log Out of ePVS, simply go to the **Profiles** section an in the upper right-hand corner will be the **Log Out** button.

First Time Use Setup

- **Select an Installation**
- **Select a Plant**
- **Navigating the Object Tree**
- **Object Tree Quick Links**

For a demo of the **First Time Use Setup, click here.**

Upon the first use of the ePVS module, it will be necessary to connect to the correct installation and plant.

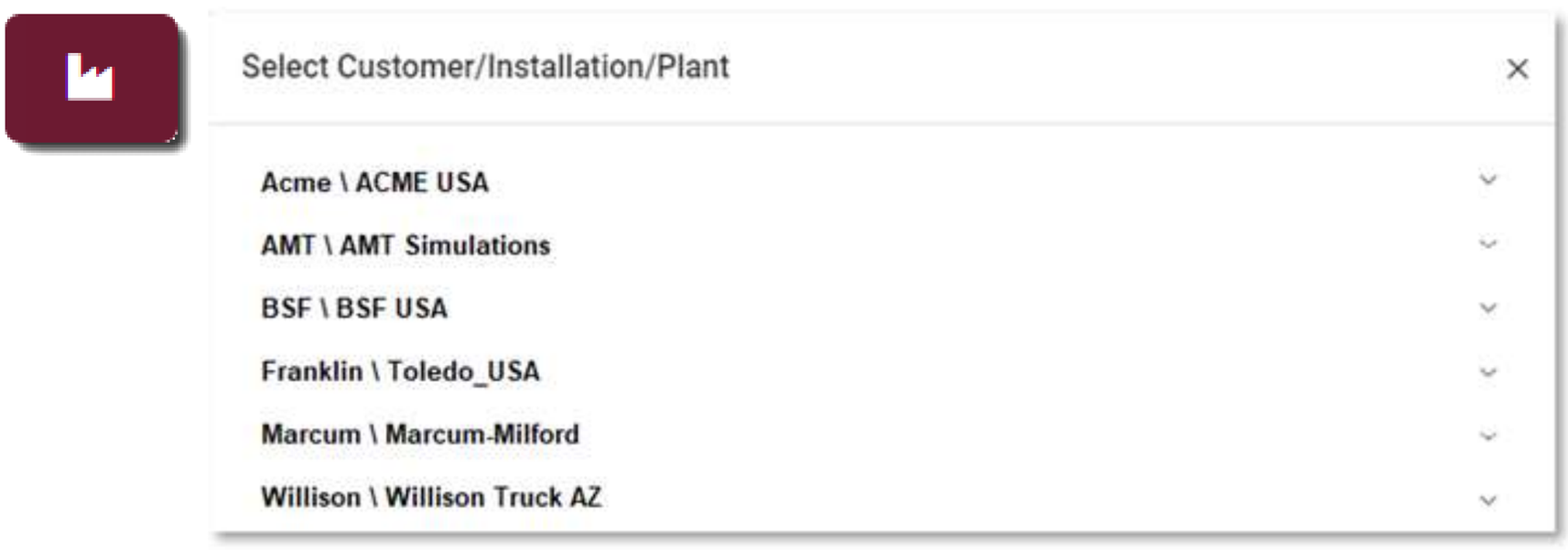
The section contains information and how to set up for the first time, and the various modules of the Home Screen.

Here is a **video** on what is covered under this section, plus an introduction to the other Startup Page features.

To start, go to the Installation button in the upper part of the browser window, next to the Object Tree button.

This simulated view is at a Full Admin level. All plants and installations will display. Any other level will display your Installation/Plant only!

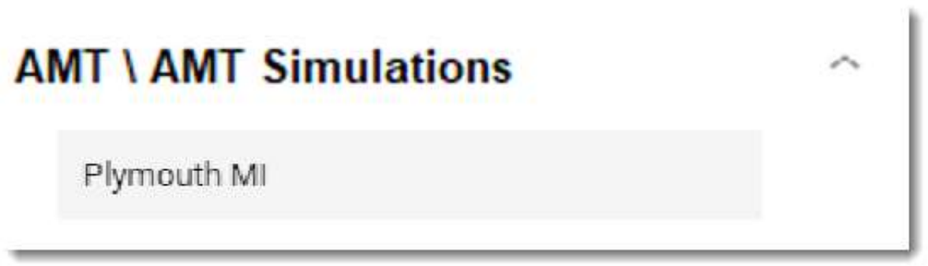
Clicking on it will open a window of the available installed installations in ePVS.



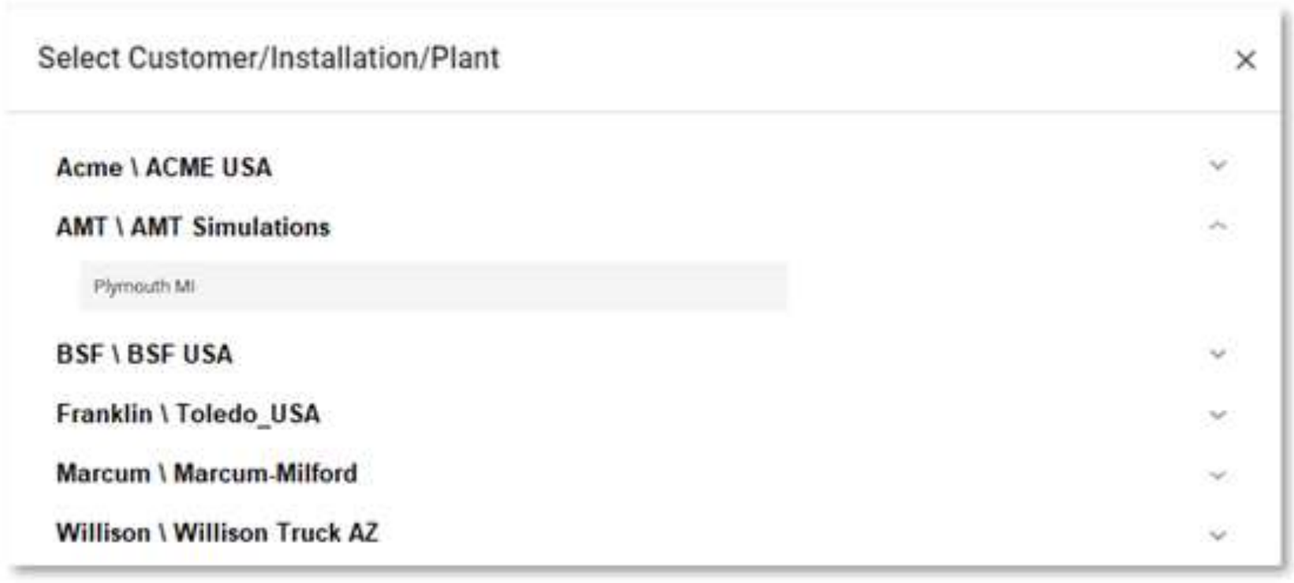
Select an Installation

Start by clicking on the Installation tab. This will reveal the included plants that have been created.

In this window, the customer's name will be placed next to the installation. Normally they will be one installation for a customer.



Clicking on the Customer/Installation title will reveal the available plants below in a drop-down selection.



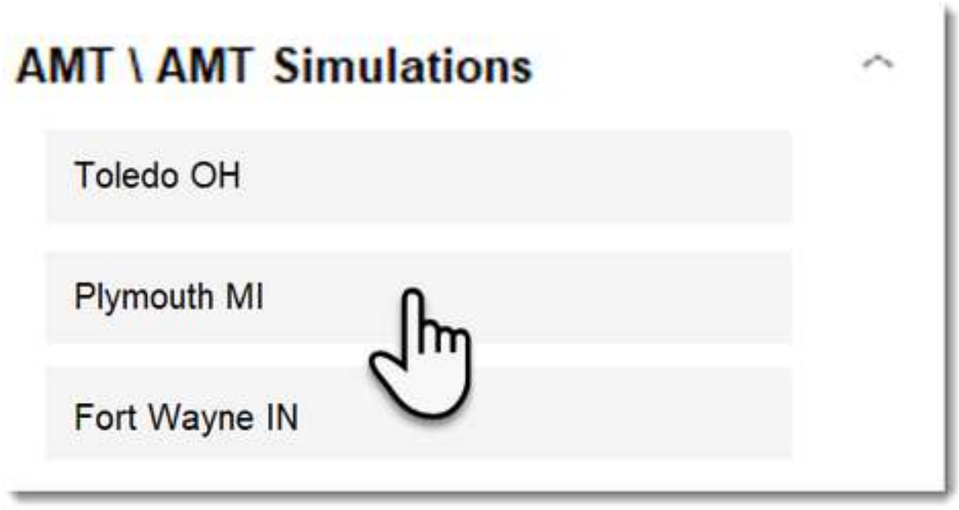
Select a Plant

Select the Plant you wish to view.

All the plants loaded in the ePVS browser will appear when the Installation Title is selected.

Some Installations can have multiple plants within the Installation, in several locations.

Once selected, the Object Tree window will open, and display the AREA object within the Plant selected.

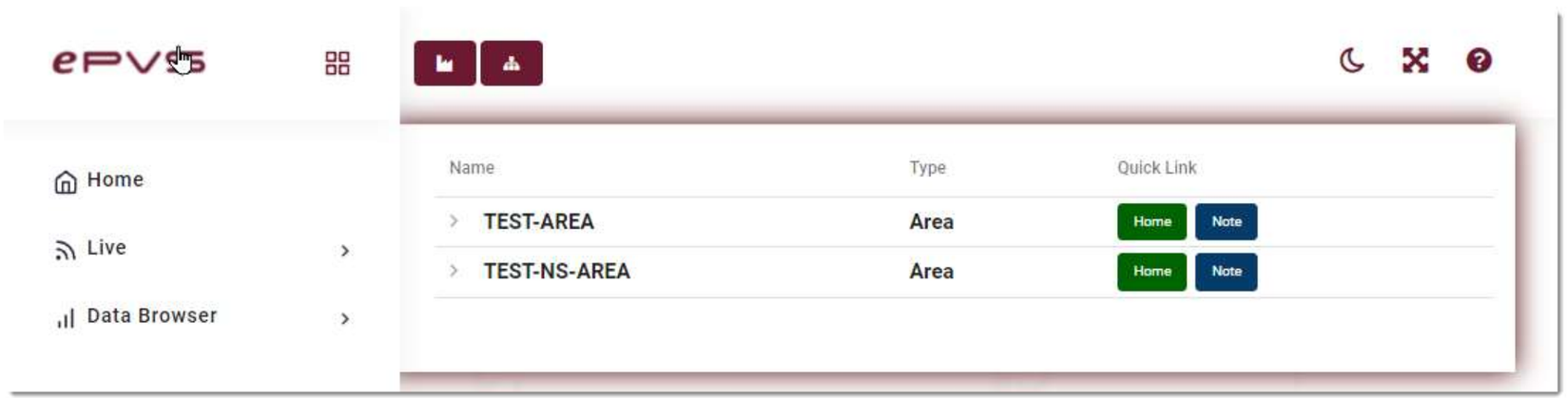


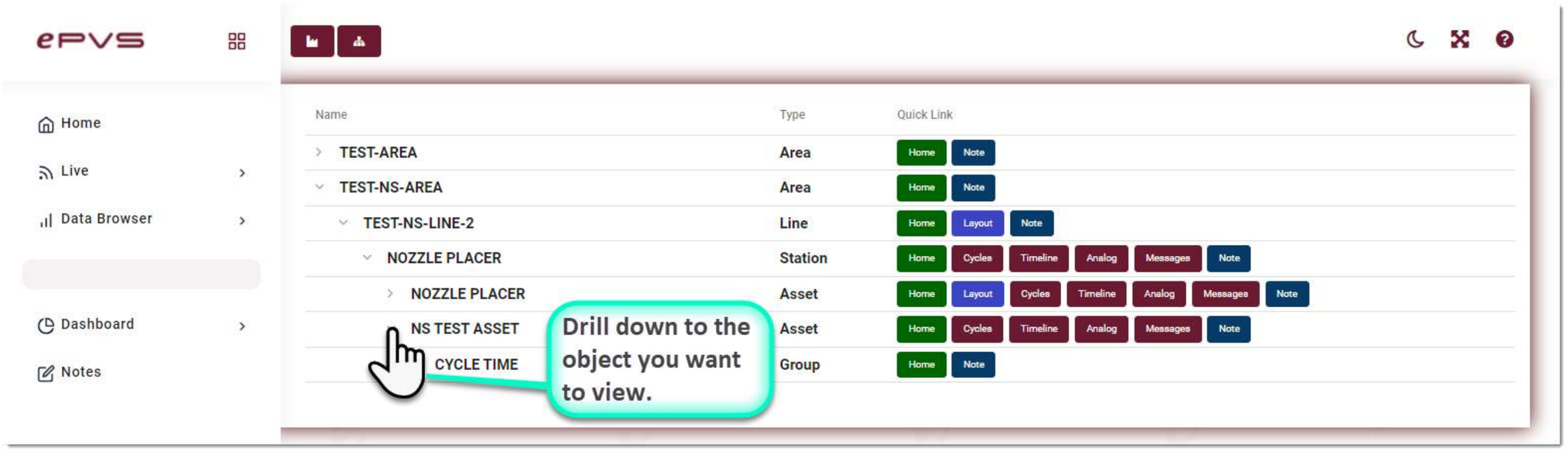
Navigating the Object Tree

The Object Tree window will initially display all the **Areas** objects within the plant.

The object tree navigation window has columns for the Name, Object Type, and **Quick Links.**

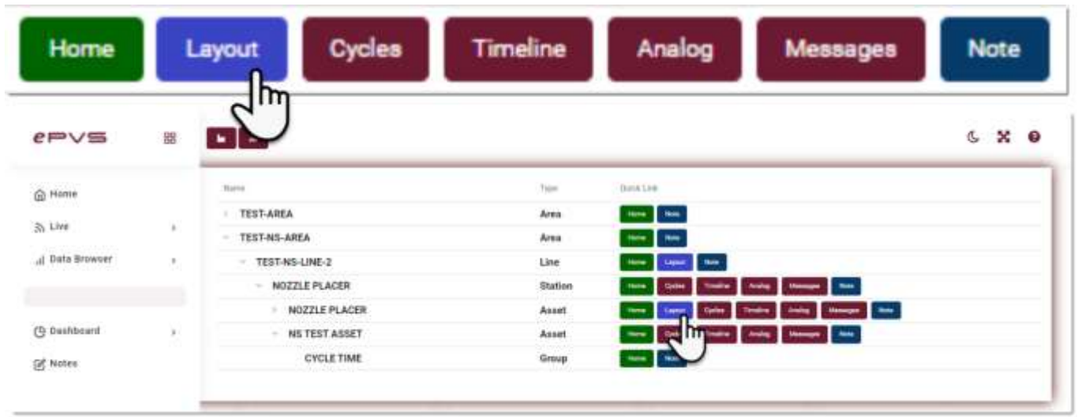
Click the drop-down next to the Name of the object to drill down to a lower level and to the object you desire.





Object Tree Quick Links

To the right of every object will be the quick links selections.



Home

The home screen returns you to the Home Pages, however, your previous navigations will be kept in the Object Tree address string next to the Object Tree button.

Cycles

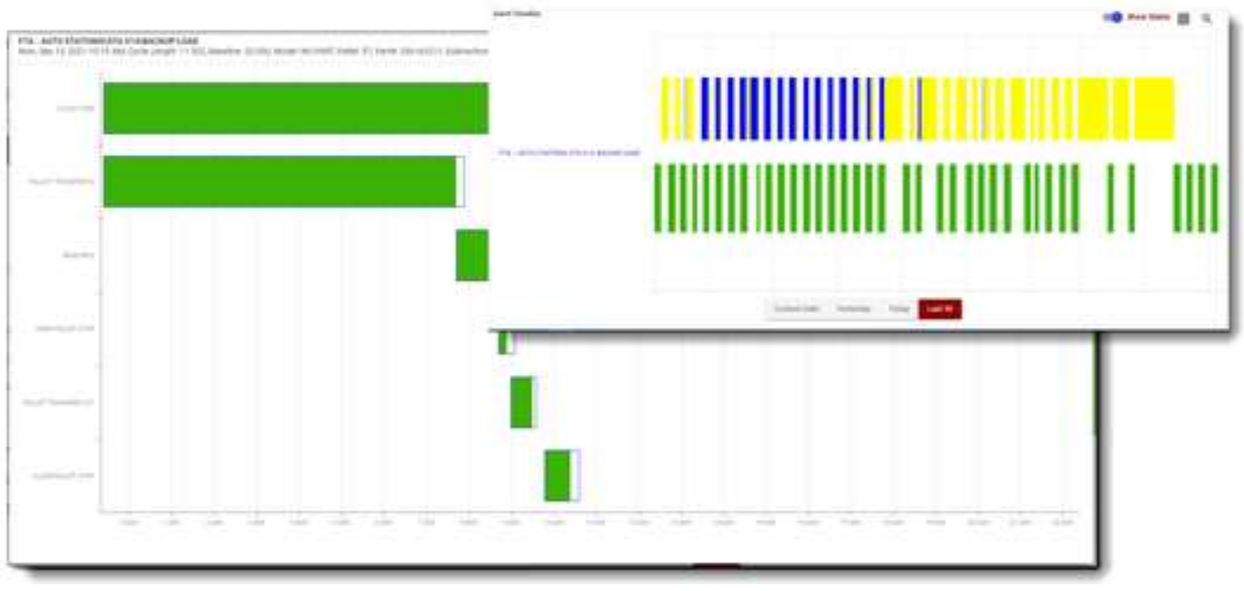
Cycles

The Cycles button will take you directly to the cycle browser window. From this window, it will initially display the history display panel which will allow you to select a cycle to view.

Timeline

Timeline

The Timeline button will take you directly to the Event Timeline module window. From this window, it will initially display the history display panel in a Sequence Timeline view, which will allow you to select a cycle to view.



Analog

Analog

The Analog button will take you directly to the Analog module for that object selected.

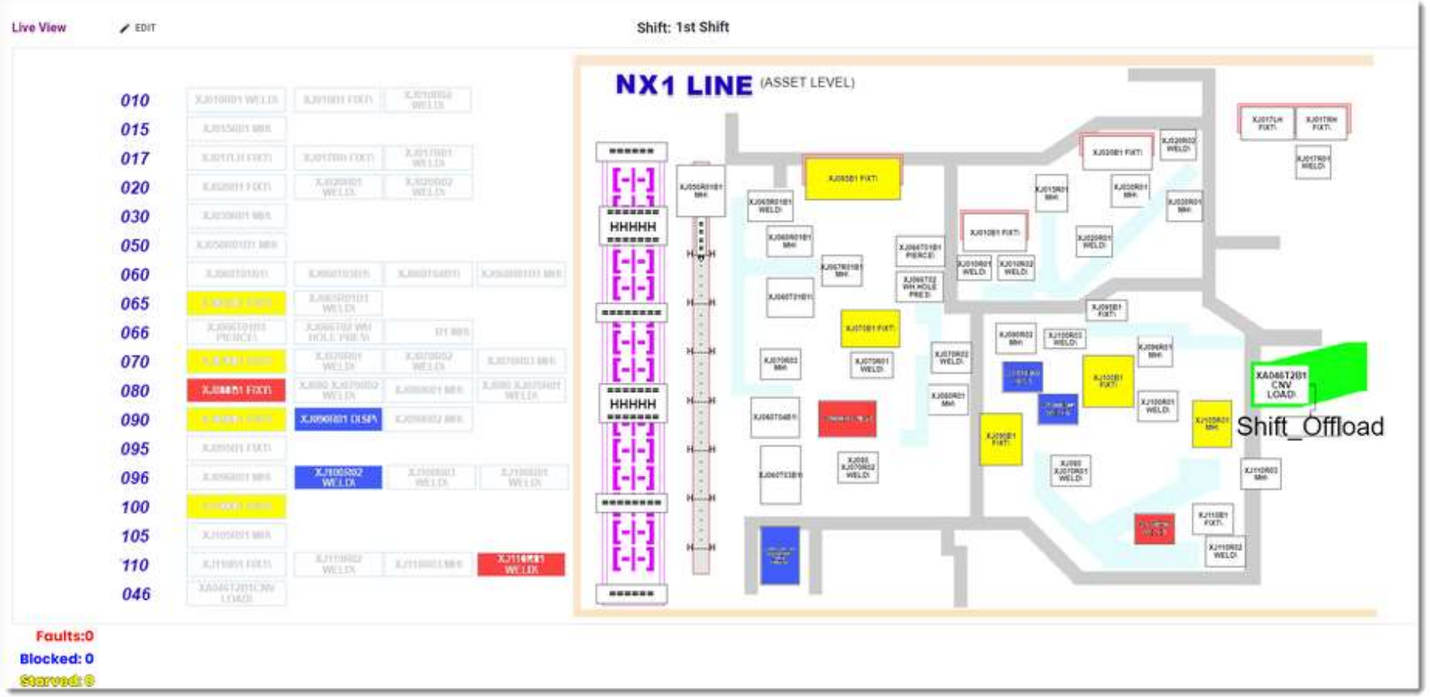
Layout

Layout

The Live View window is a real-time representation of the plant floor.

With this view, you see the Current Status of every Station/Asset in the plant in real-time.

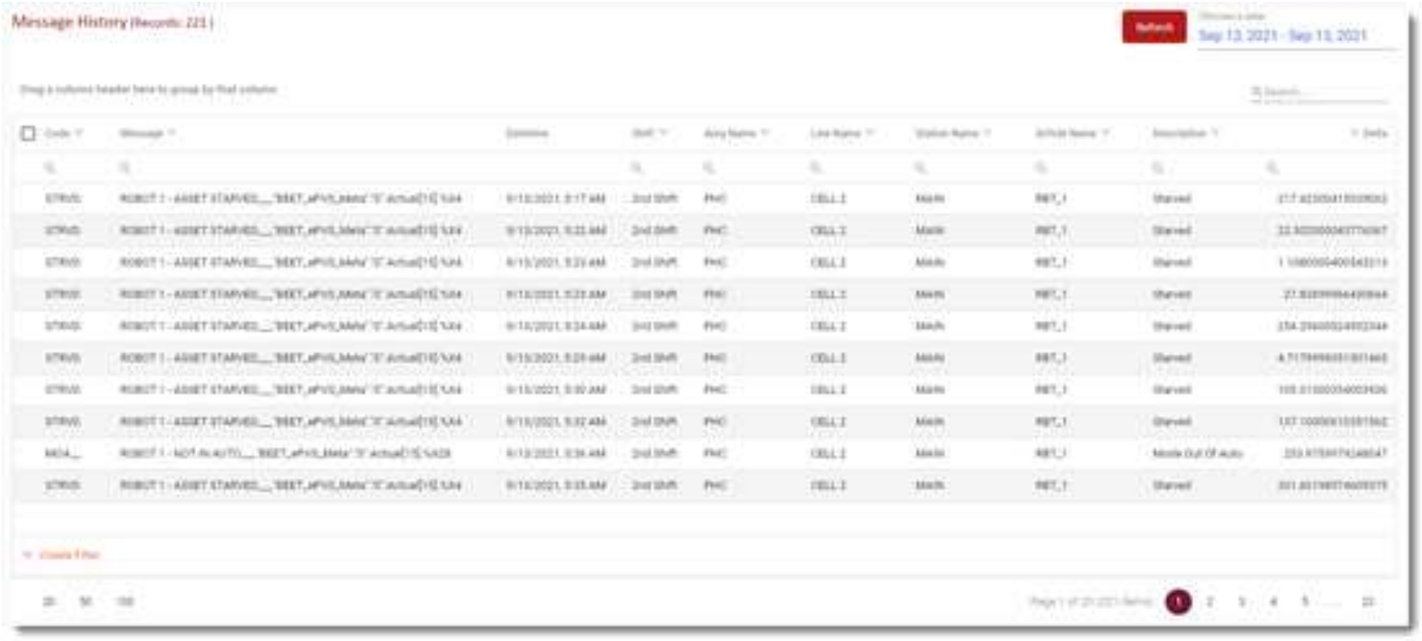
Stations are updated automatically without having to refresh the window.



Messages

Messages

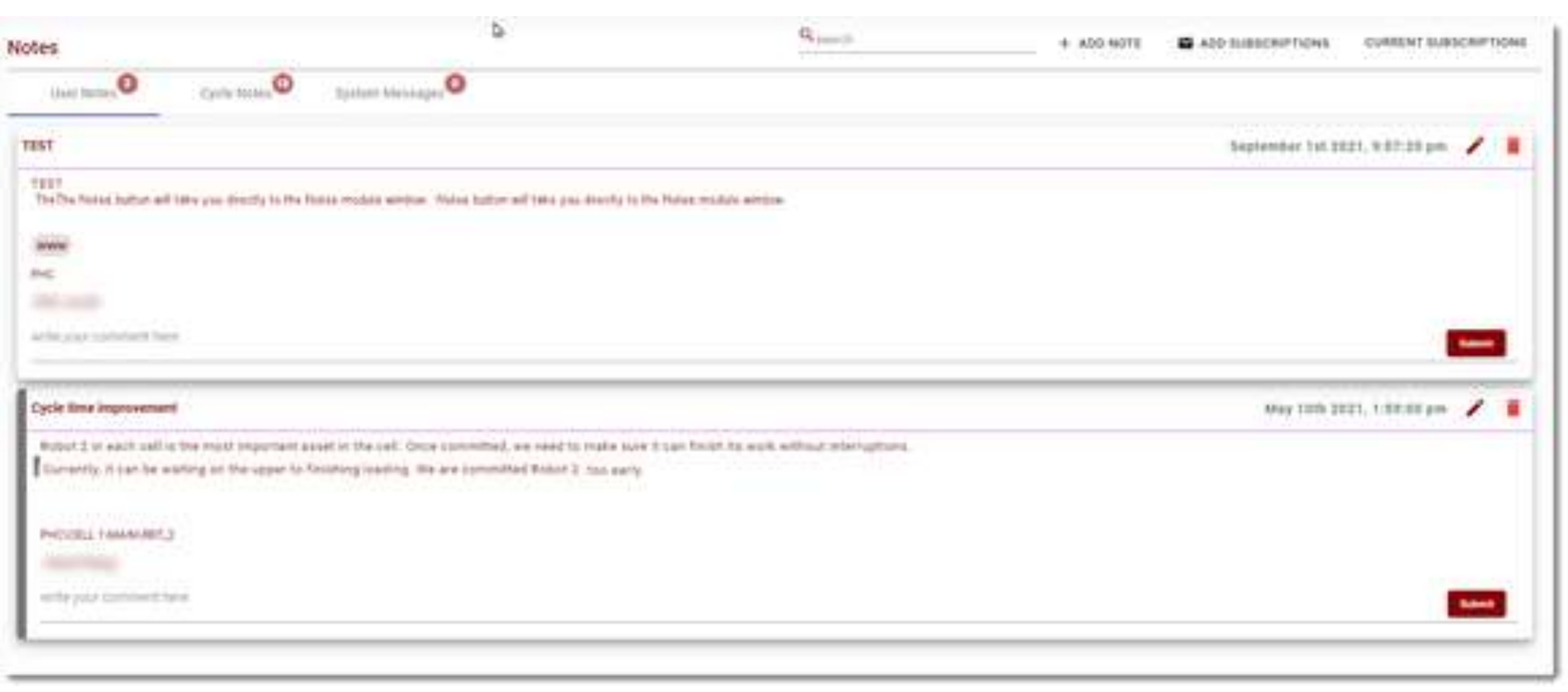
The Messages button will take you directly to the Messages module window. From this window, you will be able to view the messages that occurred to the select object.



Notes

Note

The Notes button will take you directly to the Notes module window.



Once your selection is made, you can now go to the home window.

The home window is a bubble chart that represents the plant, with an easy to glance and spot problems of the whole Factory or plant.

In this bubble chart, any object that is moving upward or to the right will be represented as an object of concern. Like going in the red.

So, immediately, anything on the upper right-hand side would be viewed as a problem.

Top Menu Bar ePVS

- Expand Main Menu Button
- Customer/Installation/Plant Button
- Object Tree Button
- Object Address String
- Current Object and Level
- High Contrast Mode
- Expand Window

In this opening window, at the top of this browser is the top menu bar. On the Top Menu Bar, are various features of the ePVS browser. Below will be an explanation of each feature of the top menu bar.

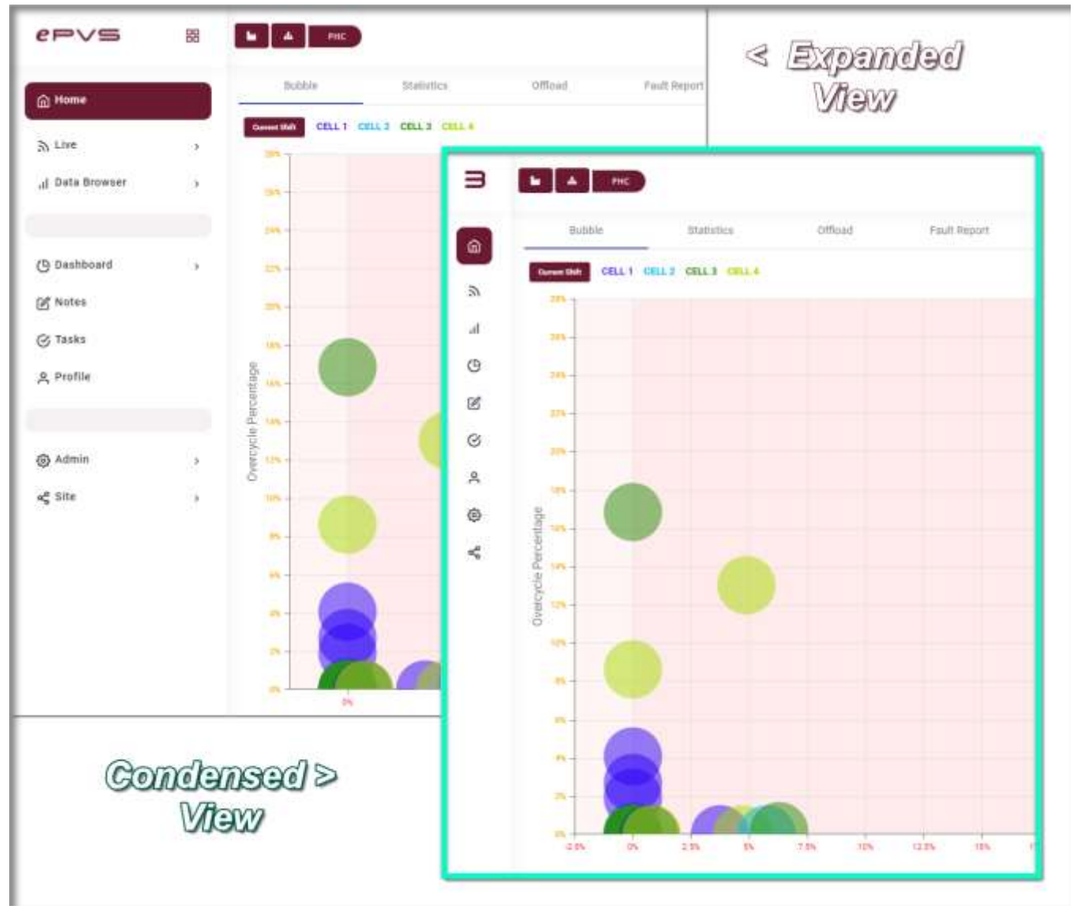
This EPVS nameplate acts as a link to the home page. From anywhere in the browser, you can return to the homepage by clicking on this nameplate. It will remain at the same level object that was selected previously. As seen in the image below the date of the browser module button is highlighted. Clicking the nameplate has returned the user to the homepage.

Expand Main Menu Button

This button is here to expand or condense the main menu button. In the expanded mode, the icon and the module title will be displayed taking up approximately 1/8 of the screen.

In the closed configuration, the menu will fall away to 1/32 of the browser window. This will allow a greater viewing area. If the user hovers over the closed configuration menu, it will momentarily expand and allow you to view the whole menu. Moving off it will allow it to auto condense to its closed configuration.

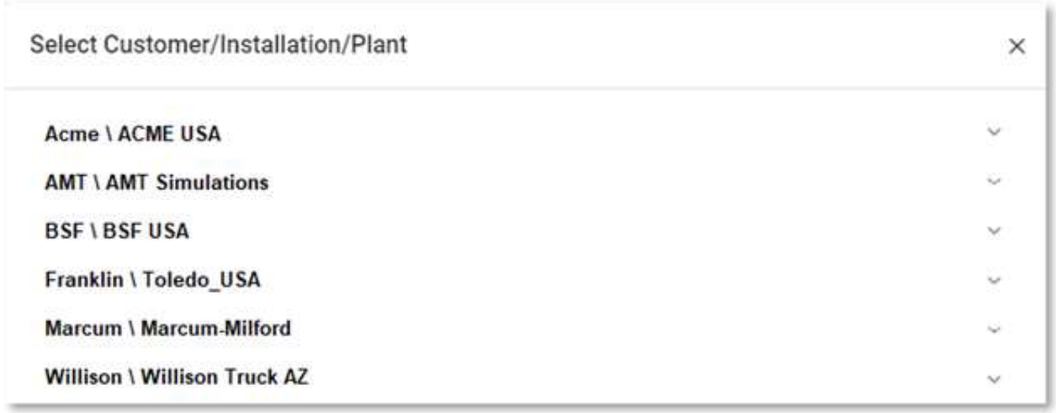
While expanded, click on the icon again to pin the expanded menu.



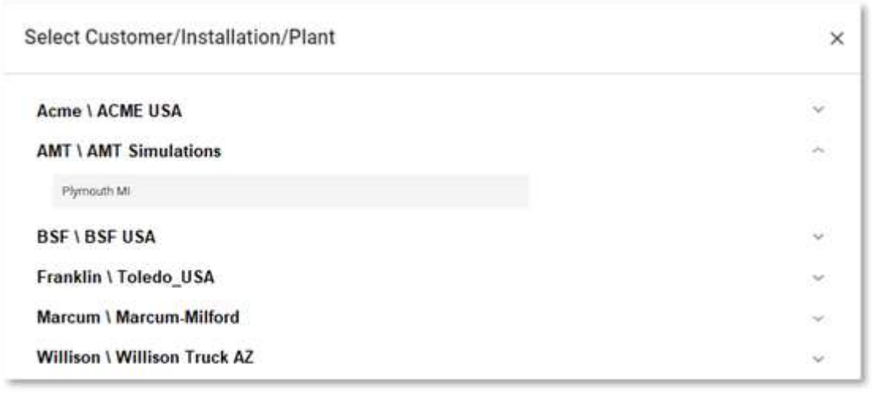
Customer/Installation/Plant Button

Start by clicking on the Installation tab. This will reveal the included plants that have been created.

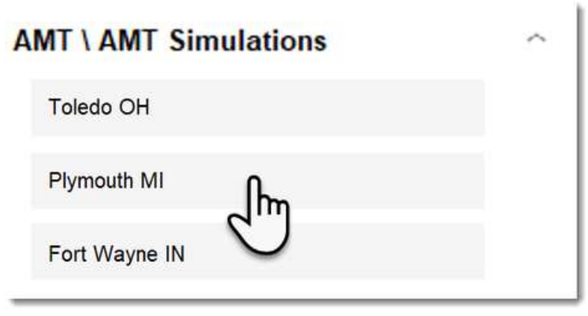
In this window, the customer's name will be placed next to the installation. Normally they will be one installation for a customer.



Clicking on the Customer/Installation title will reveal the available plants below in a drop-down selection.

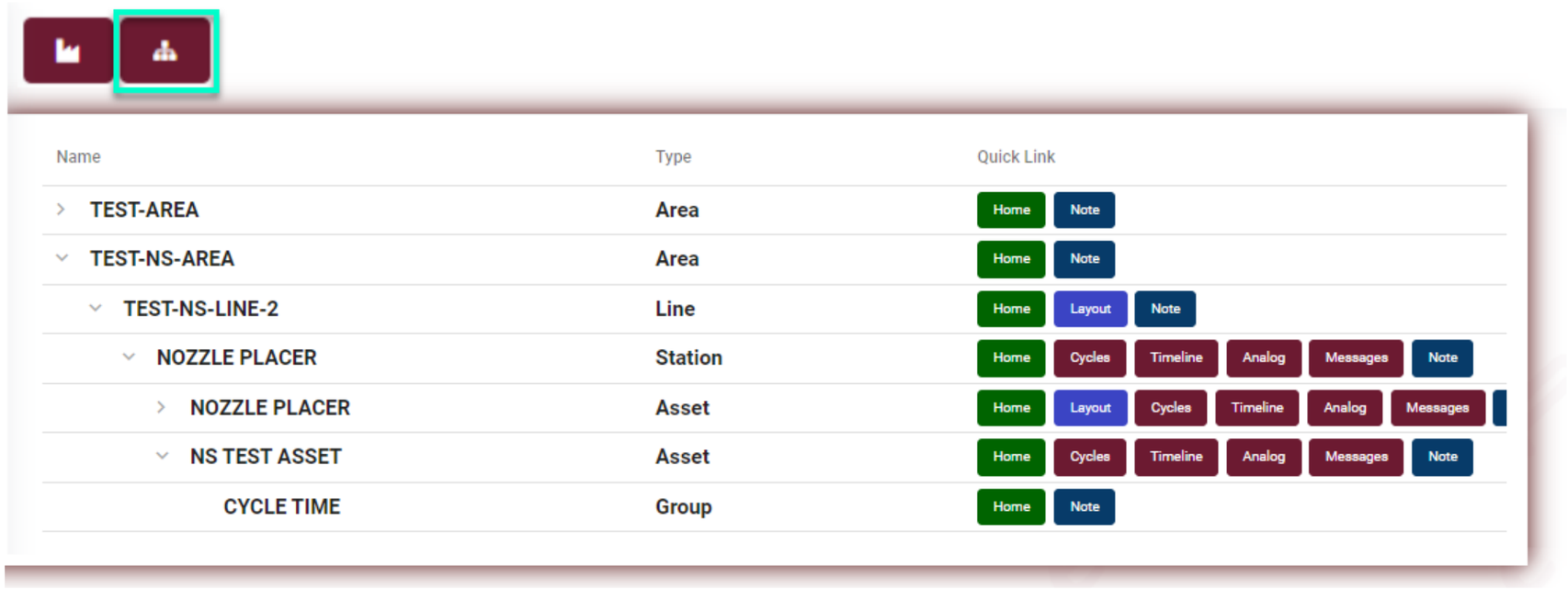


In the event there are multiple plants, all the plants will appear below the Customer/Installation title. Select the plant of your choice.



Object Tree Button

Once a plant is selected from the customer installation window, the user now can select the Object Tree button.

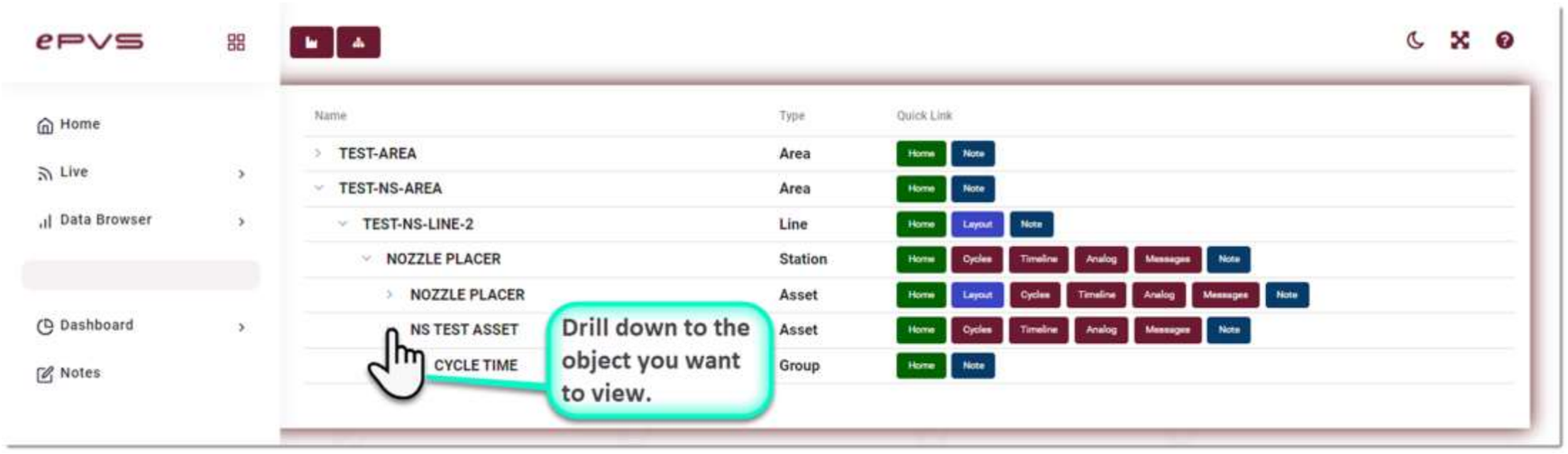


The Object Tree window will initially display all the Area objects within the plant.

The object tree navigation window does columns for the name of the type and some quick links to the right.

Click the drop-down have next to the title of the object to drill down to the object you desire.

To the right of each object will display the type of objects you are selecting.



Object Address String

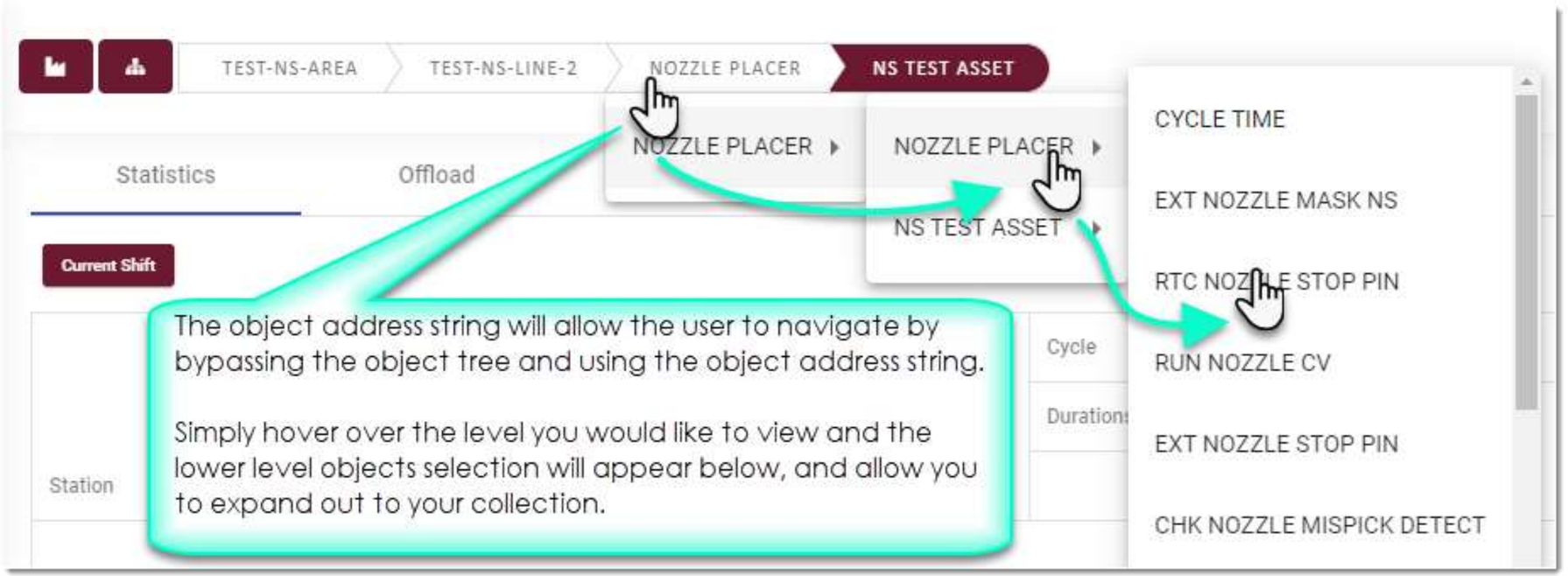
The object address string will allow the user to navigate by bypassing the object tree and using the object address string.

Simply hover over the level you would like to view, and the selection of the lower-level object will appear below and allow you to expand out to your collection.

Current Object and Level

To the right of the Object Tree button, will be the current object selected.

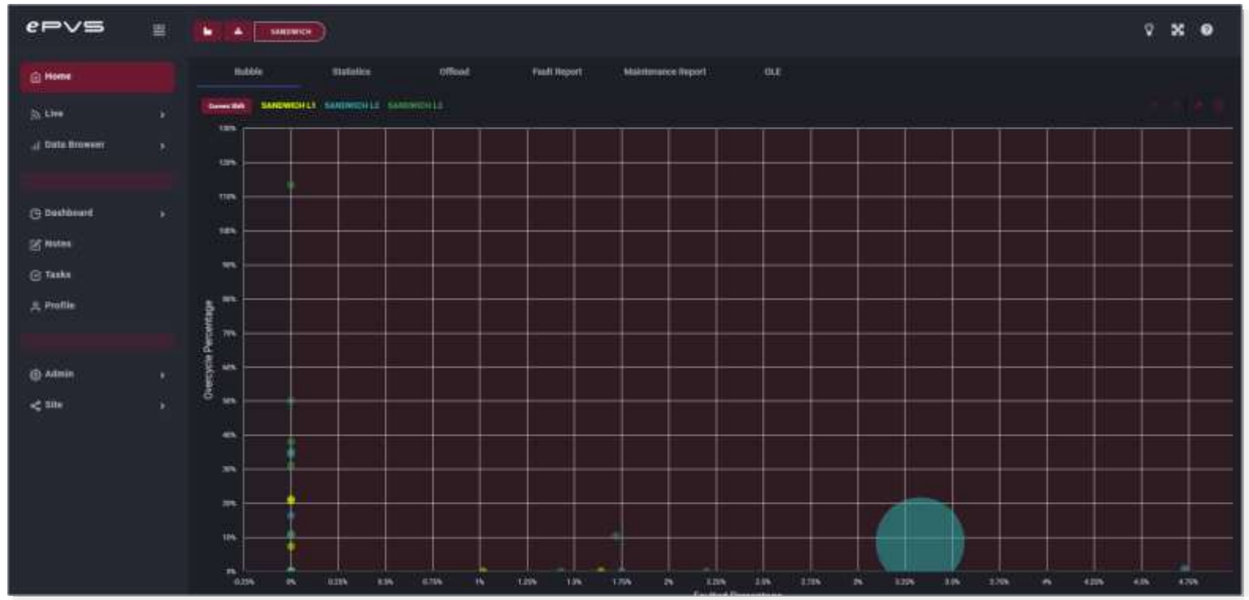
This object string can be used to navigate. See **Object Tree Address String video.**



High Contrast Mode

The user now can go to high contrast or dark screen mode. Just simply click the Crescent Moon icon on the upper right-hand side next to the expand feature.

In High Contrast mode, you can click on the Lightbulb to go back to the Light View.



Expand Window

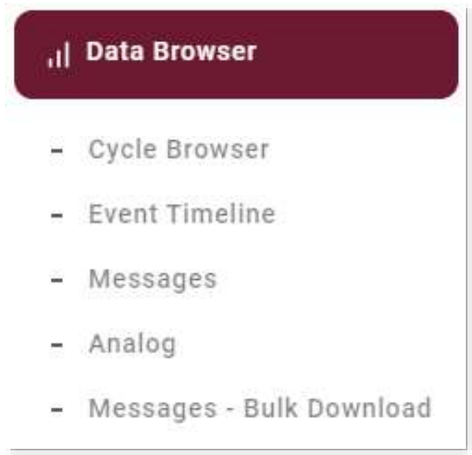
The Expand Window icon to the right will allow you to expand the page horizontally. By clicking on this expand window feature, the main menu will disappear into the left border.

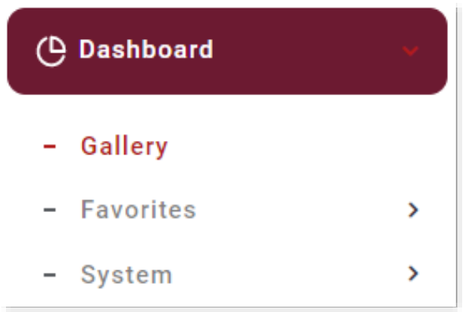
To bring it back to the main menu, simply click on the expand window button again.

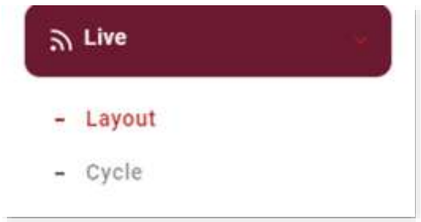
Main Menu ePVS

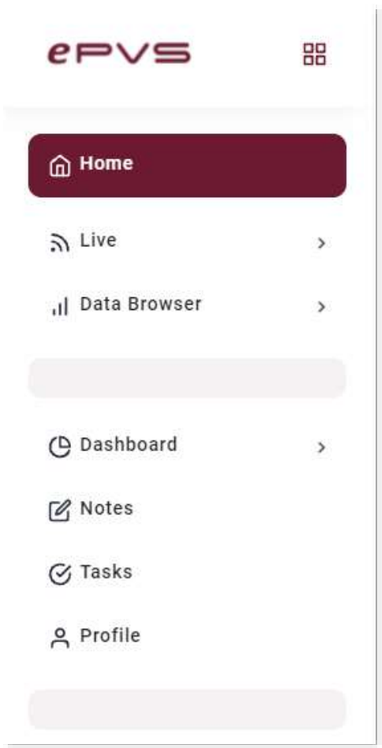
When logging into ePVS, you will be greeted by the What's Going On screen. There are several graphs available that provide critical object data in this window.

- **Home**
- **Live**
- **Data Browser**
- **Dashboard**
- **Tasks**
- **Profiles**









Home

The home button opens the Home page for ePVS. It will contain the latest posts from the previous users. It will also offer an option to view such as Bubble View, Statistics, Offloads, Distribution, and Live Cycle. Click on the image to the right for a demonstration on the **Home Screen (Video)**.

For more information on the ***Home Screen***, ***click here***.

Live

The Live View window is a real-time representation of the plant floor. With this view, you see the real-time status of every Station/Asset in the plant in real-time. Stations are updated automatically without having to refresh the window.

For more information on Live, go to the ***Live View section***.

Data Browser

- Data Browser
  - Cycle Browser
  - Event Timeline
  - Messages
  - Analog
  - Messages - Bulk Download

The data browser provides graphical data on your processes' cycle status, including the machine heartbeat.

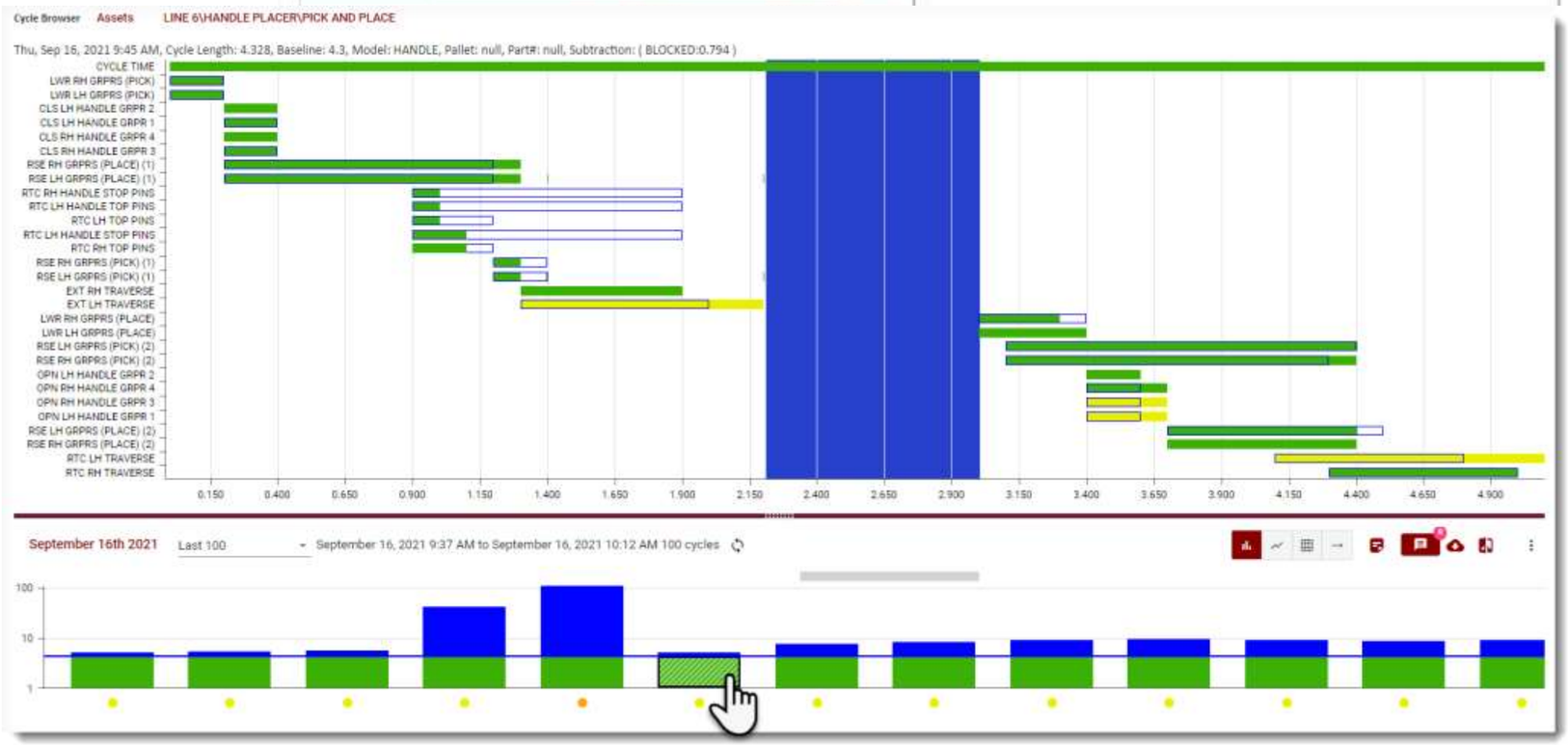
Click Here for more information on the ***Data Browser***.

The data browser section contains the cycle browser, the event timeline, the messages module, and the analog user data.

Cycle Browser

The cycle browser provides graphical data on your processes cycle status, including the machine heartbeat. The Cycle Browser has two main displays, the Cycle View Upper display, and the History Display panel.

Click Here for more information on the ***Cycle Browser***.

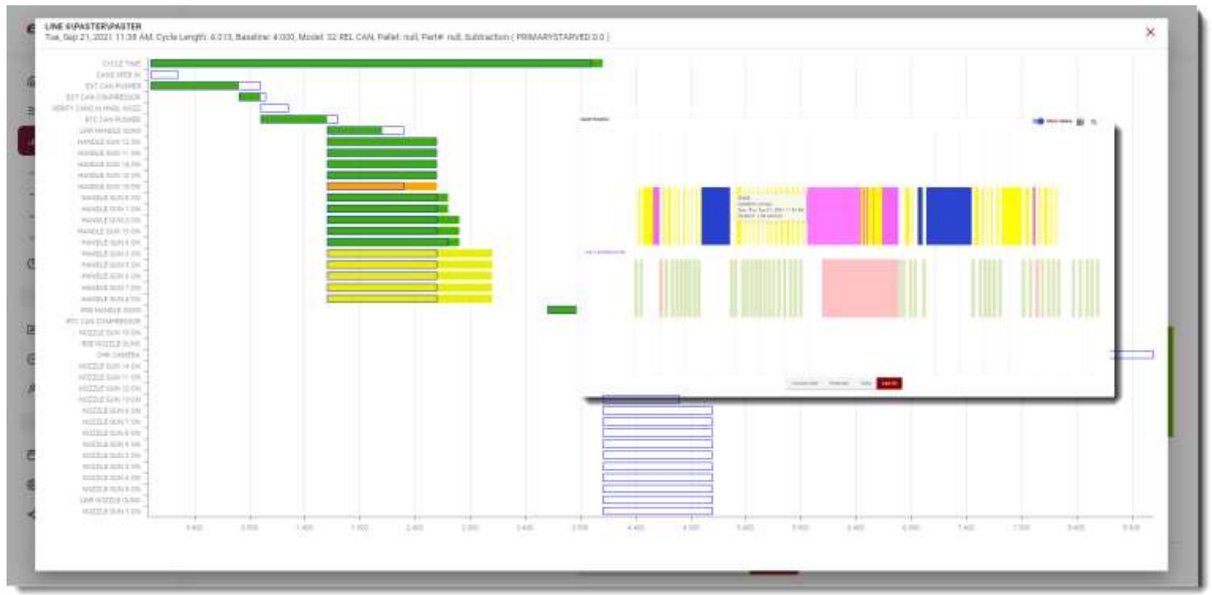


Event Timeline

The Event Timeline is a simplified version of the Cycle Browser, which limits the viewing only on a timeline, or sequential display.

In this browser the user can simply select and view of cycle from a History Display window, then with a selection, it will open an Event Timeline in the sequential view.

Click Here, for more information on the ***Event Timeline***.

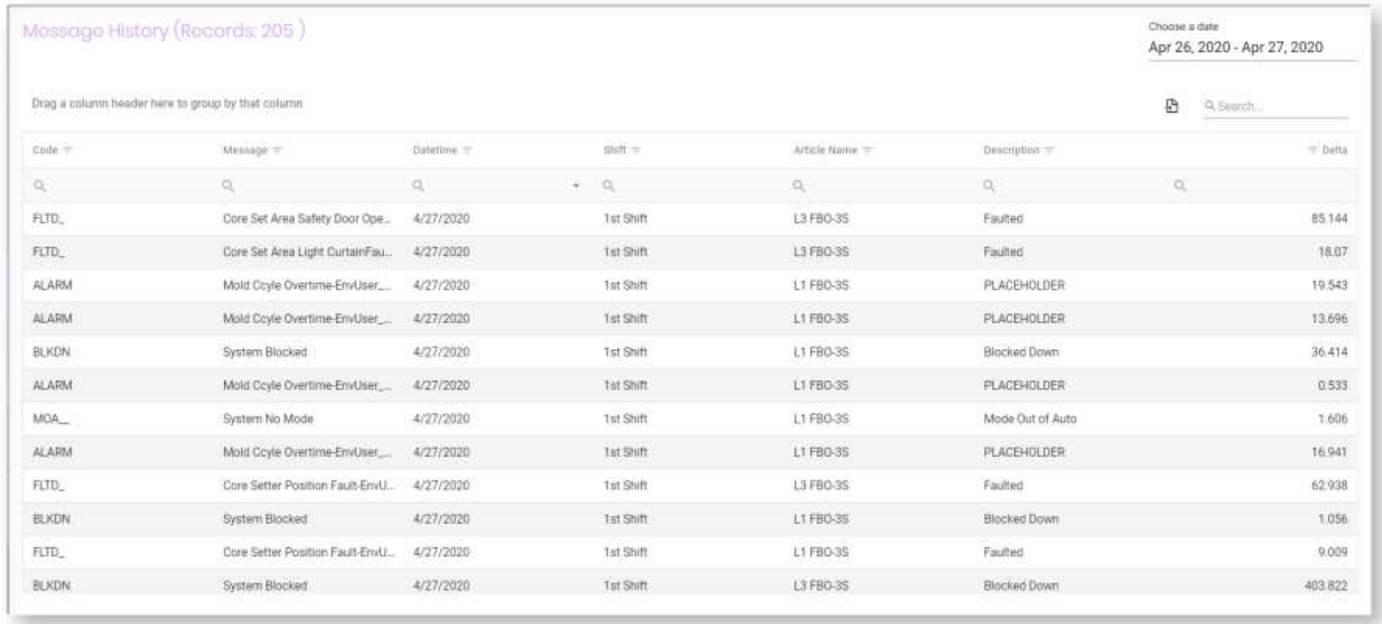


Messages

In the messages tab, the messages will display a table of all the message history. The table consists of several columns including Code, Message, Datetime, Shift, Article Name, Description, and the Delta parameter.

All these parameters can be sorted as well as the ability to drag and drop by the header, to group by that column.

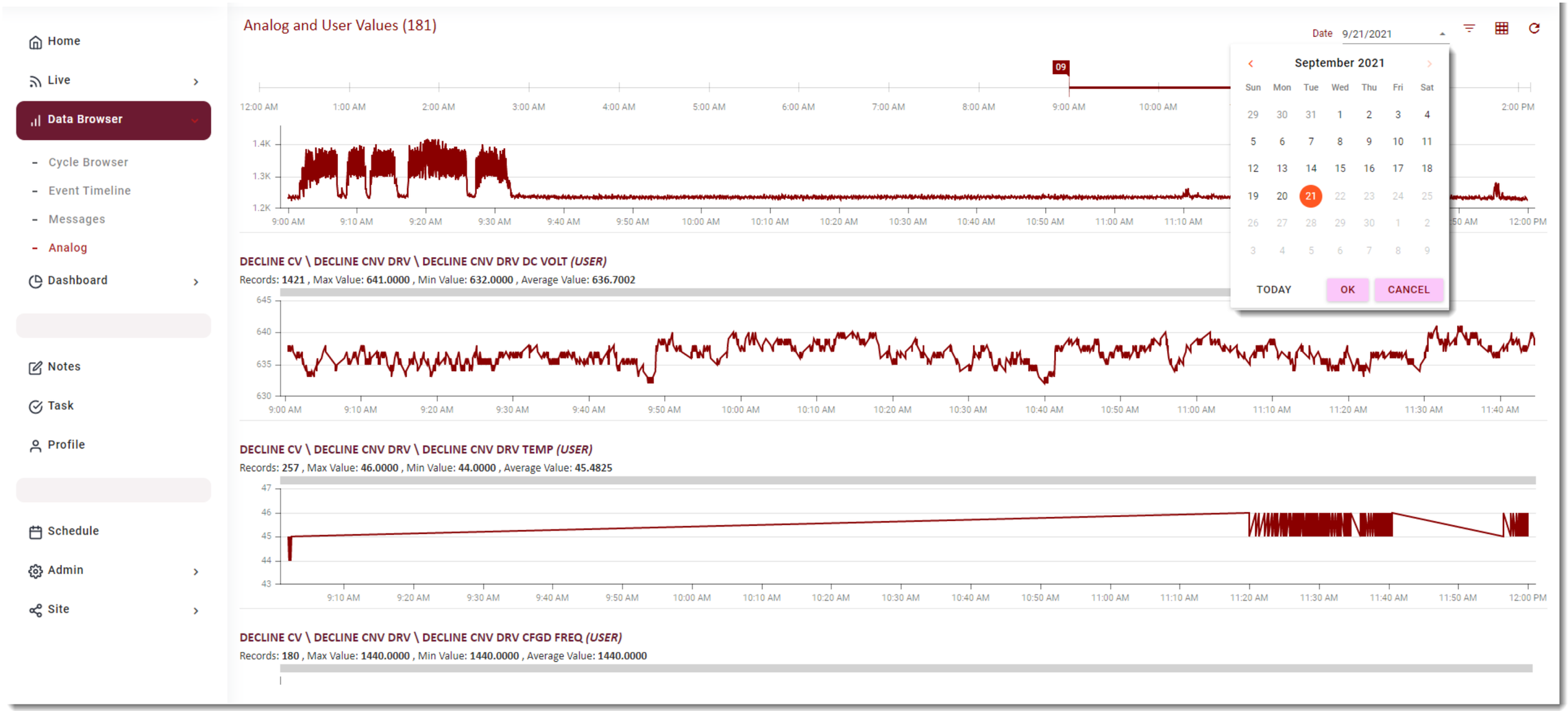
Click Here, for more information on the ***Messages*** section.



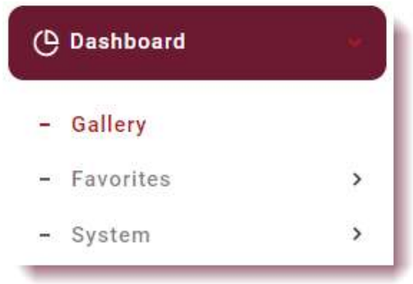
Analog

Analog uses data that is continuous, and the goal is to capture a likeness of reality. The data of objects can be modeled in a spatial simulation, and real-time.

Click Here, for more information on the ***Analog browser***.



Dashboard



Within the Dashboard tab lies the Gallery, Favorites, and System Dashboards. The system dashboards are set up by BEET personnel. The user dashboards are configured by the actual users and tailored to their needs.

Gallery

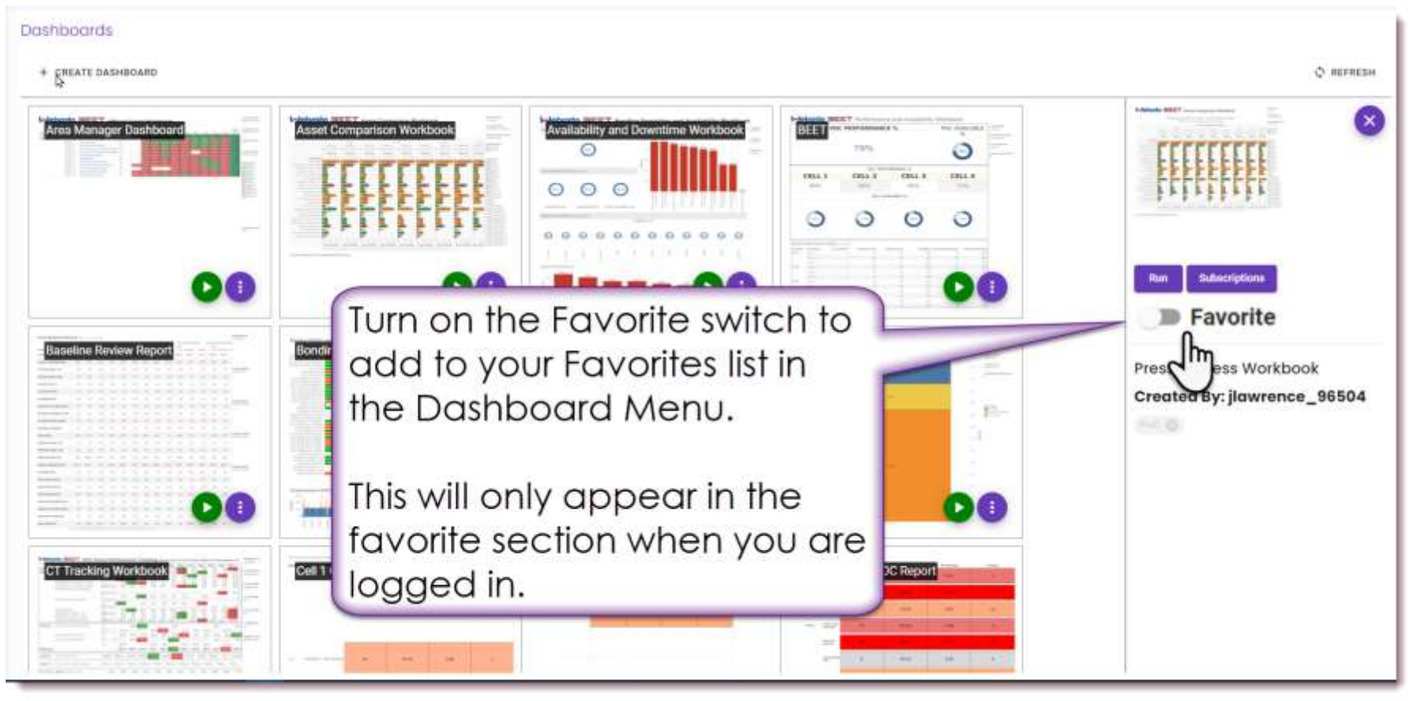
The gallery consists of all the dashboards created by the users, coaches, as well as BEET personnel.

Favorites

The favorites are controlled by the user. The user can go to any dashboard in the gallery, then click on the three-dotted menu. From there and editing section will open to the right, with the name of detailed information about the dashboard. Or the user can click the three-line menu in the upper right-hand corner of the browser. Once open, simply click the ***Favorites*** switch. Now this dashboard will appear in the favorite section tab.

System

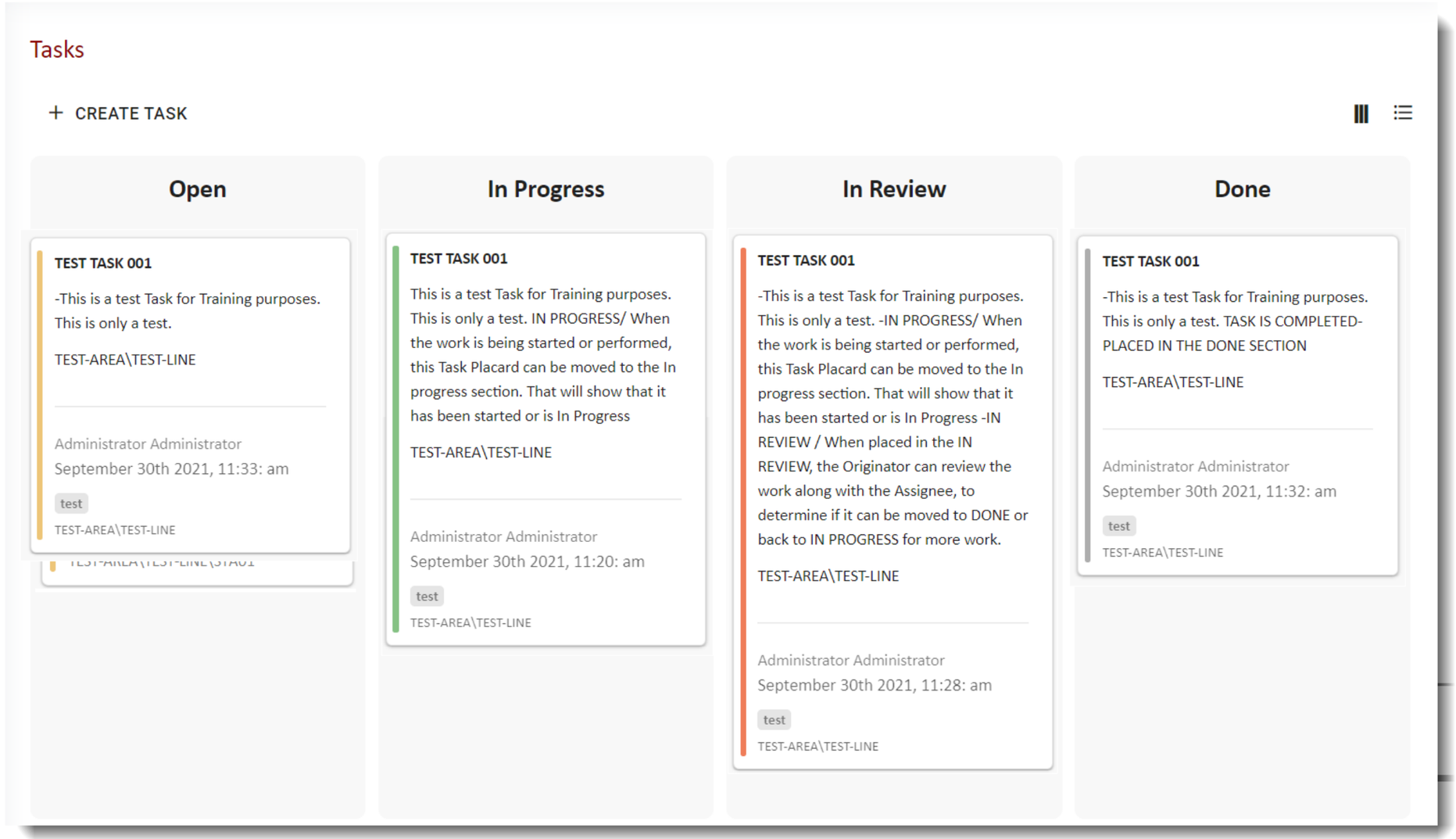
System dashboards are created by Beet Personnel, to be tailored to the customer's needs, as well as a standard collection of common dashboards.



Tasks

Below the Notes tab, is the Task Section tab. Upon opening, there will be a new window with a **+Create Task** button, on the upper-right side of the Task window (below the Task title).

Click Here, for more information about the ***Tasks*** Module.

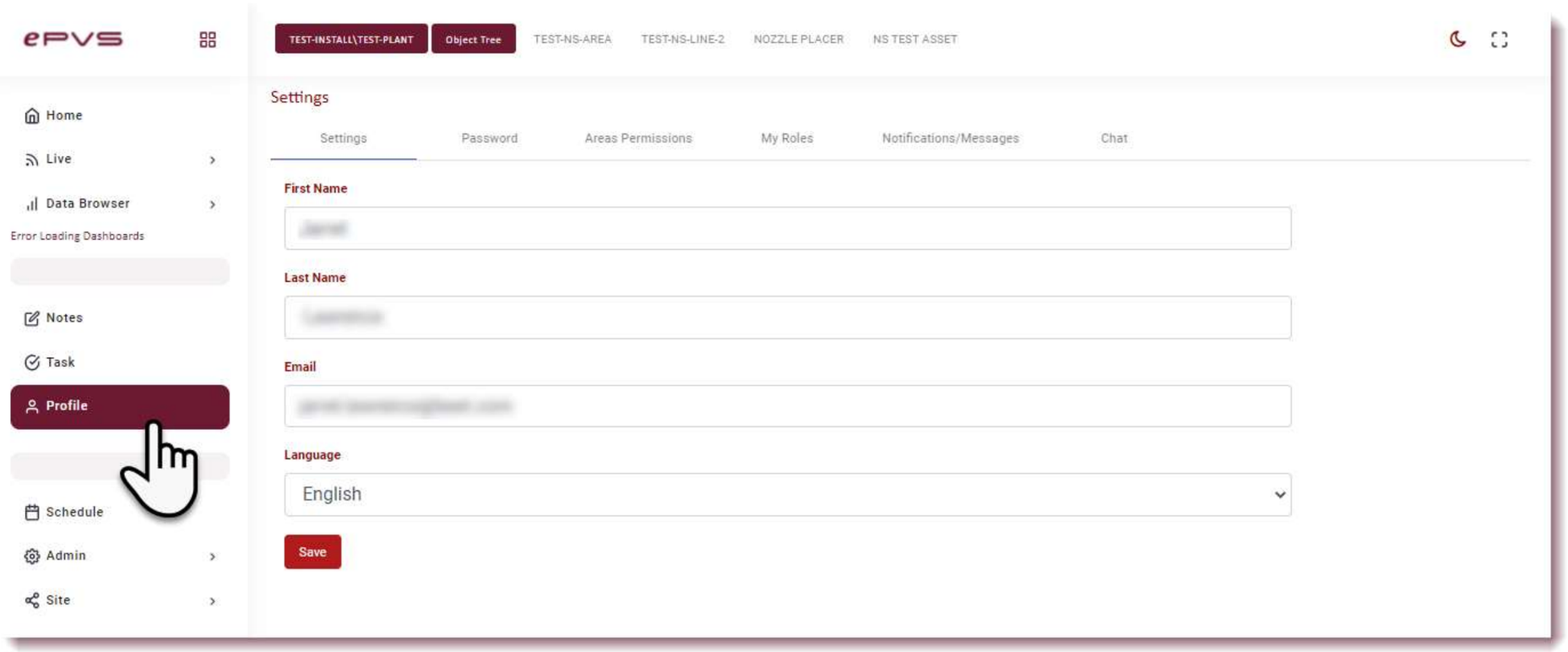


Profiles

The profiles tab contains the information on the current user. It will contain the settings page which will we require a first and last name, and email address, and the language selection.

There's also an area for a password, area permissions, **My Roles**, notifications/messages, and a chat section.

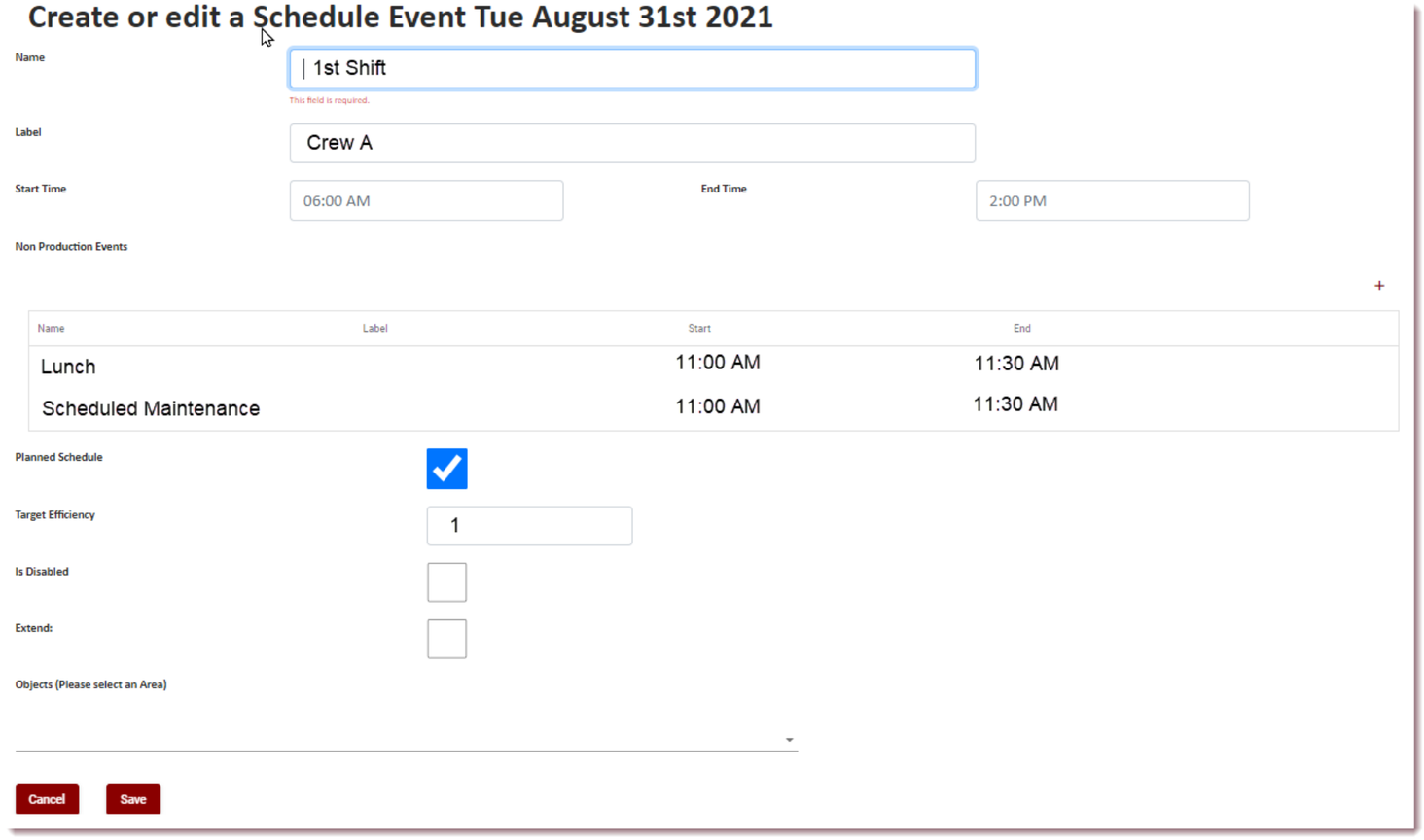
For more information go to the ***profile section*.**



Schedule

The **Scheduling** menu allows you to set up and configure a schedule for multiple shifts it also will allow you to schedule production events such as preventative maintenance breaks and other reasons for a scheduled shutdown.

For more information on schedule click on this ***link*** or go to the ***Scheduling*** section.

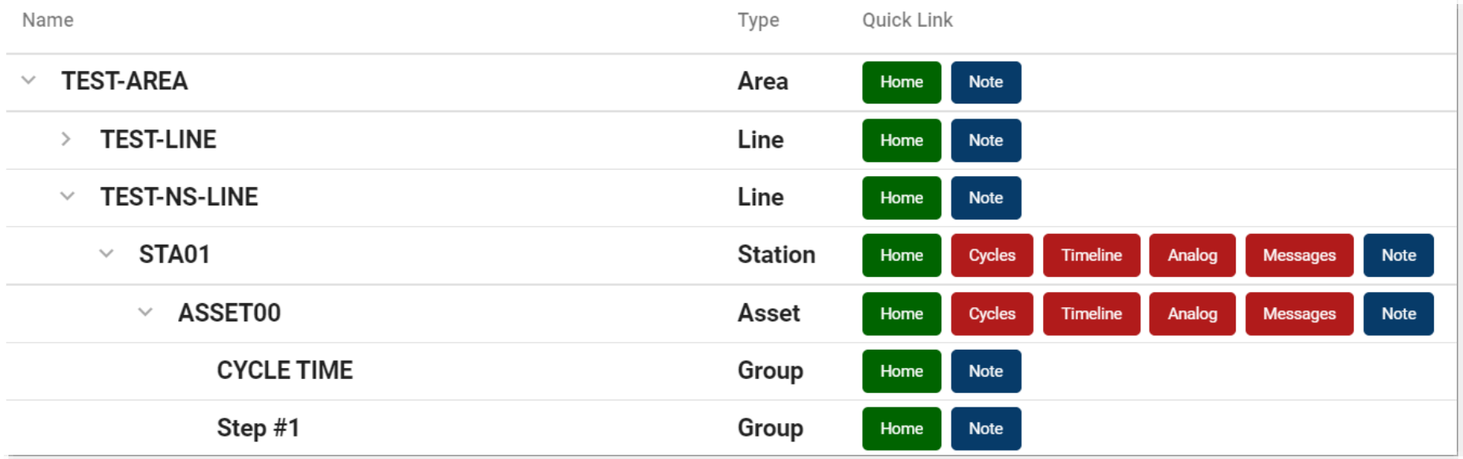


Object Tree Overview

- Object Tree Descriptions
- Object Status Indicators
- ePVS Object Naming Guide
- Plant/Factory
- AREA
- LINE
- STATION
- ASSET
- Group
- OPS
- Tooling Group OP
- Robot Motion OP

In ePVS, your plant is broken down into a hierarchy of manufacturing categories.

The Factory Plant defines the organizational tree down to the component level. The top 3 levels (Areas, Lines, and Stations) are used to organize the tree into a meaningful and friendly navigation structure. The lower 2 levels (Assets, Groups) are the data objects.



Object Tree Descriptions

AREA

The Area of the Plant where a particular assembled part is built (example: RWD and FWD Transmission Assembly Areas).

LINE

A section or place of the Area that is responsible for assembling a part of the assembly (Example: Internal and External parts assembly Lines).

STATION

A Station within the Line that is responsible for the collection of Assets (Example: Gear build, valve body, and torque converter build Stations).

ASSETS

Assets are used to define a repeatable set of motions/activities (Groups) that have defined Start and End signals (Example: Builds the Valve body and inspects/quality check assets).

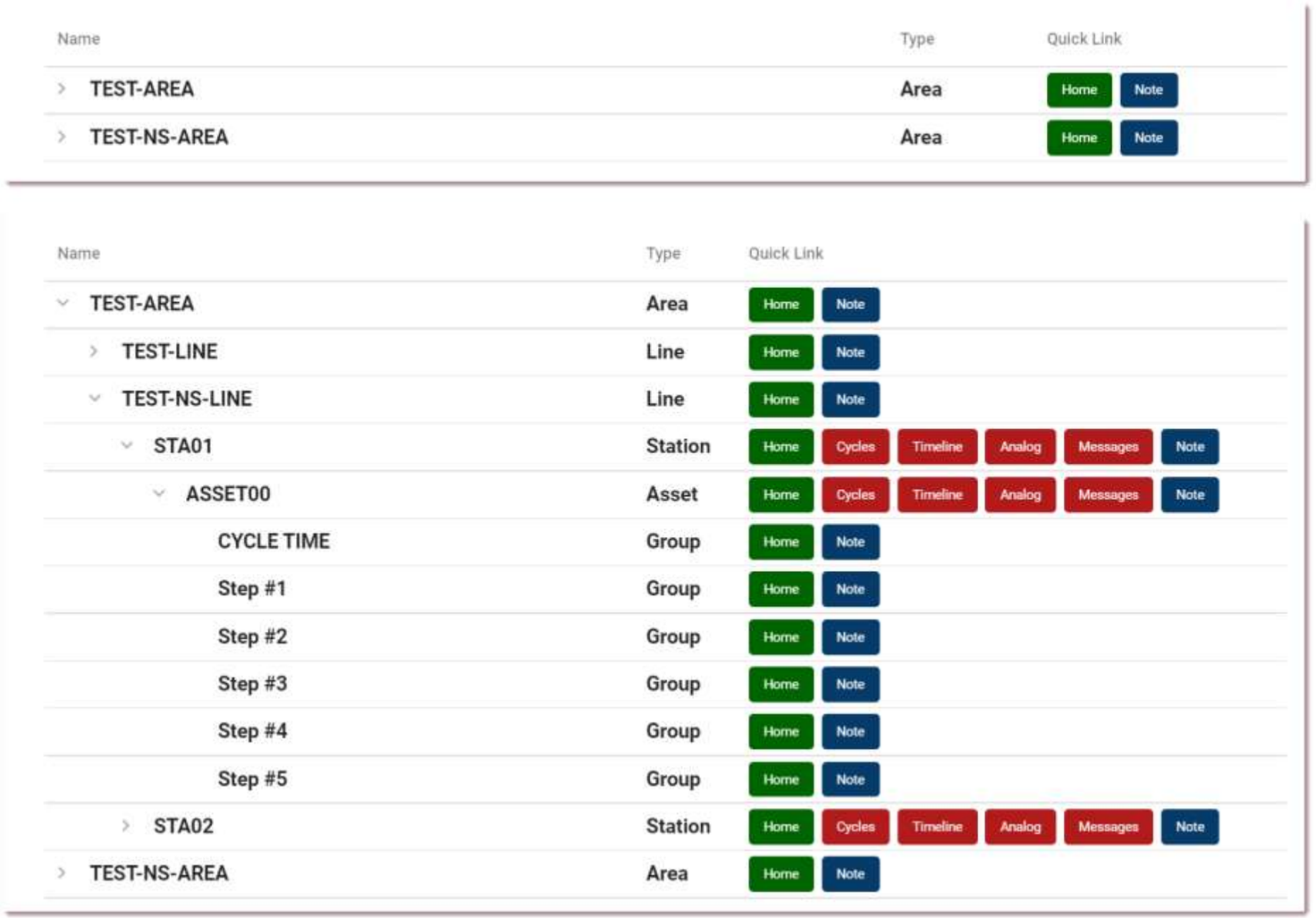
GROUPS

A Group is a collection of OPS (individual motions/event data objects). Assets are a collection of Groups that describe a particular sequence of events that comprise one complete cycle for the Asset (Example: When a part enters On-Deck, then Part is present On-Deck, signal to show OP is complete).

Select the Object Tree button located next to the Customer/Insulation/Plant button. For information on the Customer/Insulation/Plant, click this **Link**.

The object tree window will open displaying all the available areas based upon your selection Plant selection.

Select the > drop-down box next to each object to further expand the areas. Continue to expand areas until you reveal the object you desire, then *click* on the Object to open the cycle browser. This will open the browser window with the last 100 cycles.



Object Status Indicators

Paypoint

The indicator Paypoint (Pay Point) refers to the result of an actual product of a line when the last object is completed.

When the setup of a Pay Point is made, it is generally placed at the ASSET level objects. After it is set, ensure that the higher-level objects Pay Points are selected as well. Without performing this critical setup, the function of the Pay Point will not work.

Blocked

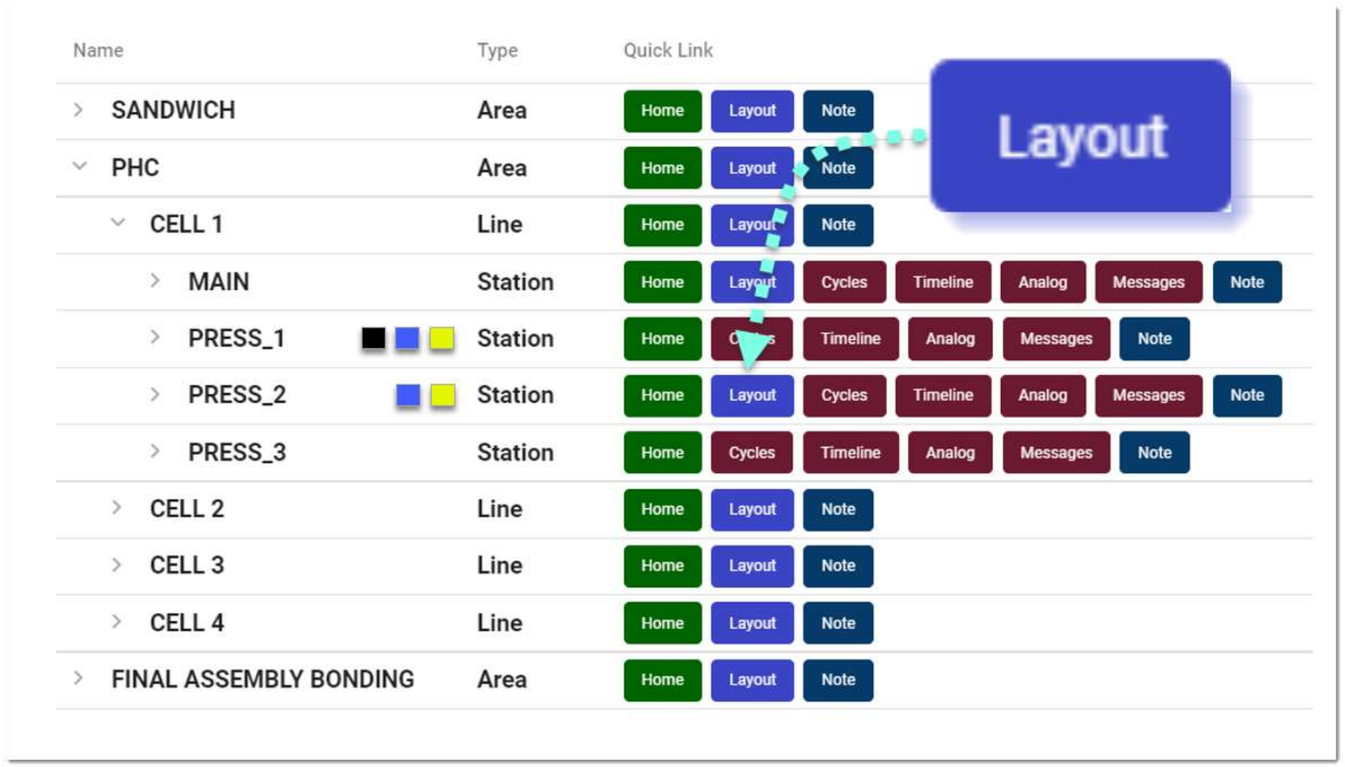
The object completes its work and is waiting for downstream objects to finish so the finished part can move out of the object.

Starved Point

The overall time the object is in a starved state.
The object completed its job, and the produced part has exited the object. The object is waiting for the next part to start working.
The overall time the object is in a starved state. The object completed its job, and the produced part has exited the object. The object is waiting for the next part to start working.

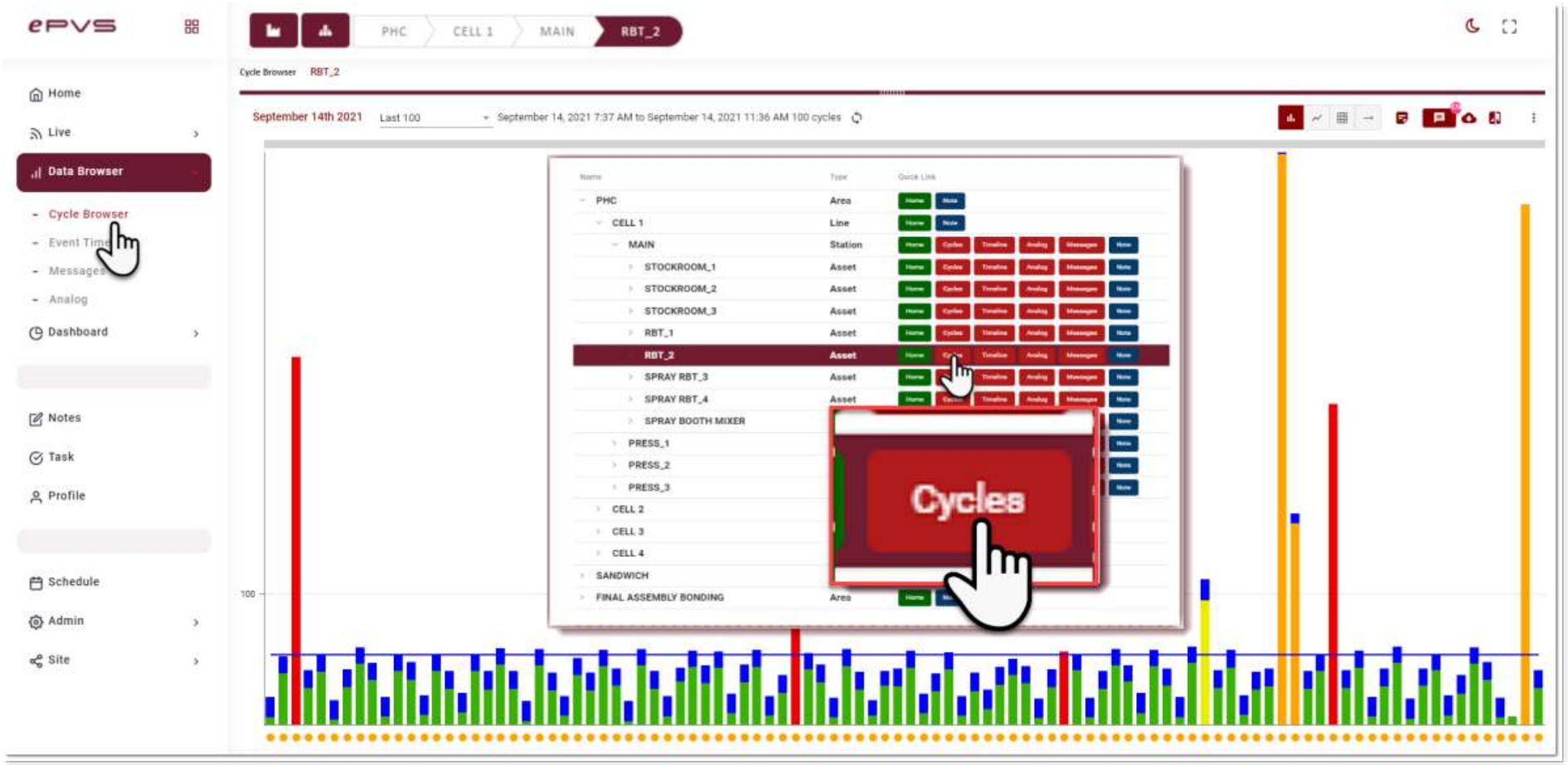
Has a Layout

This indicator shows that this object has a layout completed in the dashboard section of the *ePVS* module.

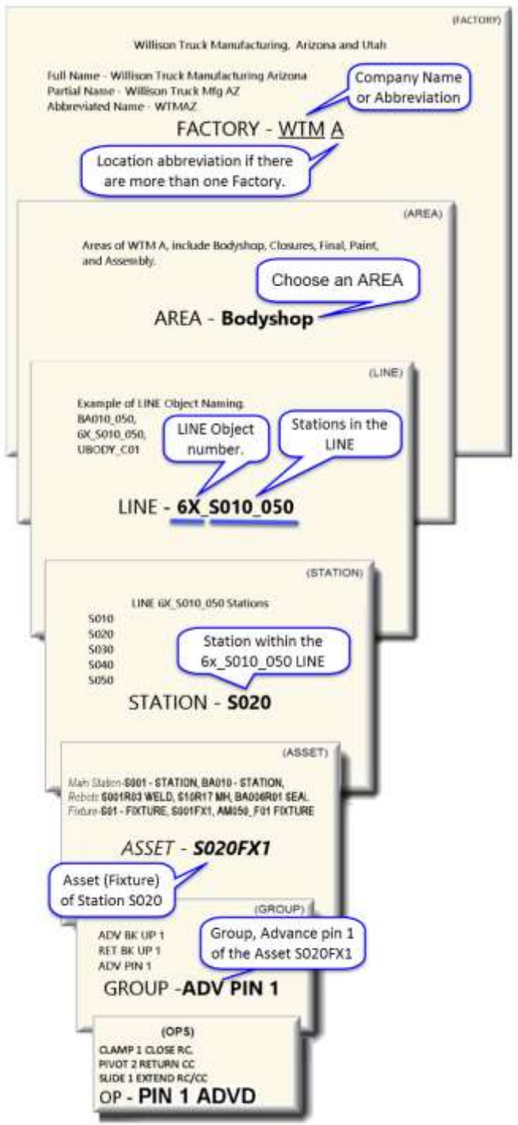


Once you've navigated to the object of your desire, you can now click on any of the modules to view the graphical and other informational data from one of the many modules of the ePVS Browser.

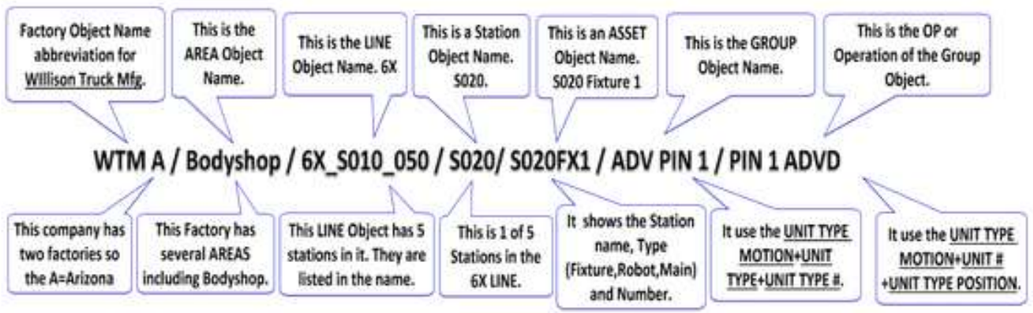
Click on the Cycle Browser button, on the Main Menu (left side), or the Quick Links to the right of the Object Tree to go to the Cycle Browser. Once selected, the Data Browser will open with the Last 100 cycles in the History Display Browser, displayed for that object selected.



ePVS Object Naming Guide



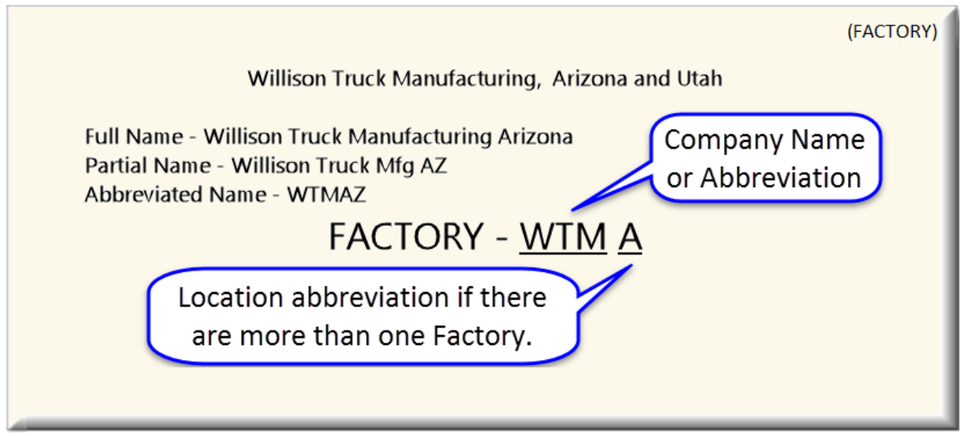
- ePVS Object Naming Guide
  - **Plant/Factory - WTM A** _ Bodyshop _ 6X_S010_050 _ S020_ S020FX1 _ ADV PIN 1 _ PIN 1 ADVANCED
  - **AREA** - WTM A _ **Bodyshop** _ 6X_S010_050 _ S020_ S020FX1 _ ADV PIN 1 _ PIN 1 ADVANCED
  - **LINE -** WTM A _ Bodyshop _ **6X_S010_050** _ S020 _ S020FX1 _ ADV PIN 1 _ PIN 1 ADVANCED
  - **STATION** - WTM A _ Bodyshop _ 6X_S010_050 _ **S020** _ S020FX1 _ ADV PIN 1 _ PIN 1 ADVANCED
  - **ASSET** - WTM A _ Bodyshop _ 6X_S010_050 _ S020 _ **S020FX1** _ ADV PIN 1 _ PIN 1 ADVANCED
  - **Group** - WTM A _ Bodyshop _ 6X_S010_050 _ S020 _ S020FX1 _ **ADV PIN 1** _ PIN 1 ADVANCED
  - **OPS**- WTM A _ Bodyshop _ 6X_S010_050 _ S020_ S020FX1 _ ADV PIN 1 _**PIN 1 ADVANCED**
  - Tooling Group OP
  - Robot Motion OP



Plant/Factory

The Factory/Plant Object can be named after the Customer Name (Or Accepted Abbreviation) or Plant Name (Or Accepted Abbreviation). It is the highest-level object.
When naming, keep it between 5 and 15 characters - no more than 20.

WTM A _ Bodyshop _ 6X_S010_050 _ S020_ S020FX1 _ ADV PIN 1 _ PIN 1 ADVANCED

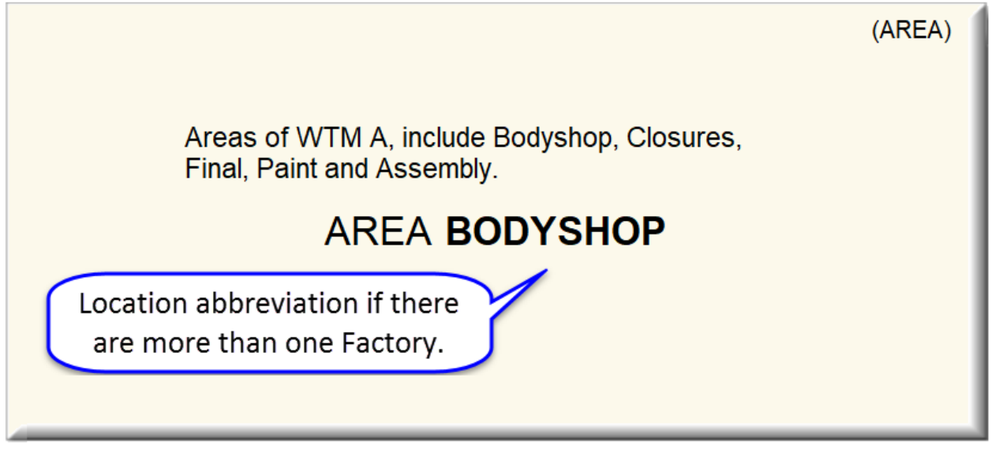


The FACTORY for this example is the fictional Willison Truck Manufacturing (WT Mfg.). They make several versions of trucks. In this example, there are two factory locations, Arizona, and Utah. Selecting a Factory name could use the initials of the company name and the location if there are multiple sites.

- WTM A (Willison Truck Manufacturing) + A (Arizona). WTM A.
- WTM U for the Utah Factory.

AREA

The Area Object is a Customer Designated Area, such as a Bodyside, Bodyshop, or another large part of a whole product. The Area Object is the "Child' under the Plant object.
When naming the Area Object, it can be more than 1 - same punctuation rules as Plant. Example, Bodyshop and Framing.



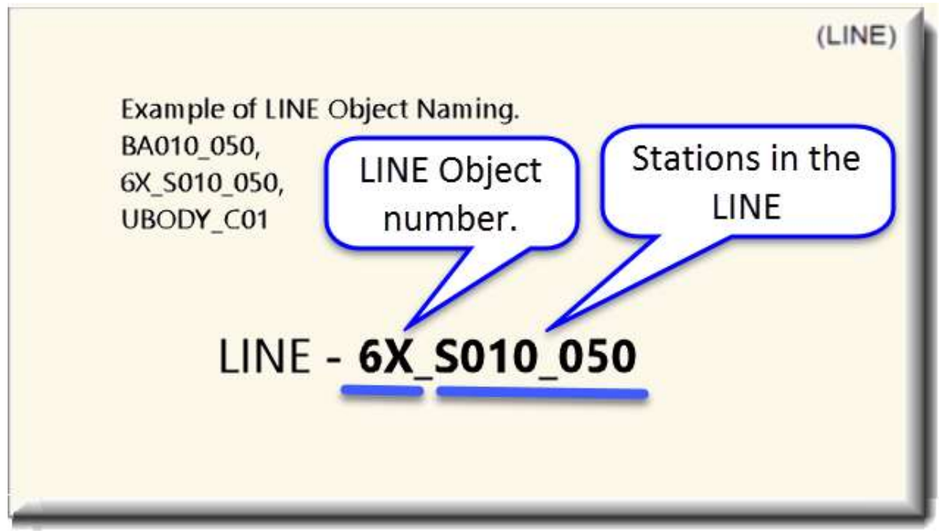
Area - WTM A _ **Bodyshop** _ 6X_S010_050 _ S020_ S020FX1 _ ADV PIN 1 _ PIN 1 ADVANCED

In this factory, the manufacturer will have several areas that could be monitored. The Areas would be separated by the types or parts of a product they produce, such as Bodysides, Framing, Painting, Bodyshop, etc. For this, we would specify a particular AREA.

- Bodyshop
- Bodyside
- Framing

LINE

The Line Object is a Customer Designated Line Segment and Style of Station range, such as a 6X S010 or 6X S010-S050 (if there are multiple stations in one or more of the Line Objects). The Line Object is the "Child' under Area object.
When naming the Line Object, it can be more than 1 - no more than 20 characters, stating a segment and a range of station (element) in the Line.



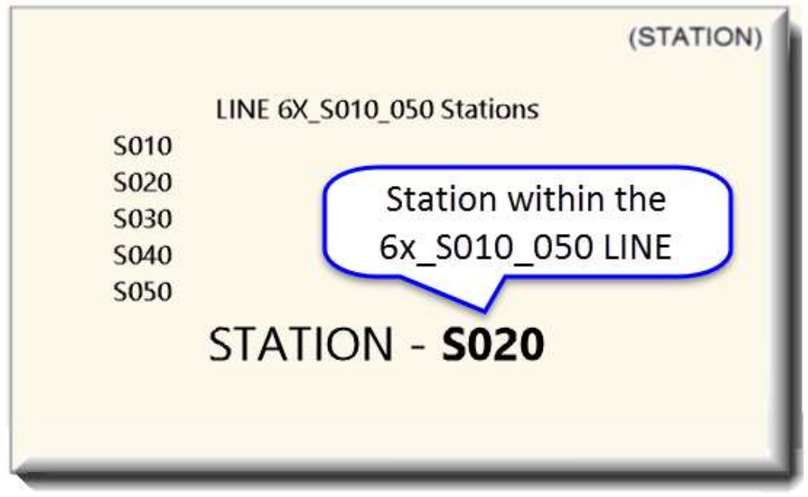
LINE Object - WTM A _ Bodyshop _ **6X_S010_050** _ S020 _ S020FX1 _ ADV PIN 1 _ PIN 1 ADVANCED

In the Bodyshop AREA, they may have multiple LINES. Each LINE has an abbreviated designation for them and the STATION or STATIONS in the LINE Name. If a line has two or more STATIONS within the LINE, you will want to use the LINE Number (6X) + the STATIONS (S010_050) included in that LINE. Note the examples below.

- BA010_050
- **6X_S010_050** (this line has multiple stations)
- UBODY_C01 (this LINE has only one station)

STATION

The Station Objects are Customer Designated Station number, usually in reference to the 2nd part of the Line Objects name (aka S020 which is part of the 6X S010-S050 Line Object or S010, S020, S030, S040, and S050). The Station Object is the "Child' under Line object.
When naming the Station Object, there can be more than 1, to try to keep it around 10 characters.



Station - WTM A _ Bodyshop _ 6X_S010_050 _ **S020** _ S020FX1 _ ADV PIN 1 _ PIN 1 ADVANCED

The STATIONS are the Child objects located in each LINE Object. Within the 6X S010-S050, there would typically be 5 (S010, S020, S030) stations in each LINE Object:

- S010
- S020
- S030
- S040

ASSET

The Asset Objects are Customer Designated Asset Name and a description of the type. It consists of Main Stations, Robot Stations, and Fixture Stations. Main Stations are Customer Designated Station Number. Robots are Numbers, Robot Number, and description. A Fixture is a station number. The Asset Object is the "Child' under Station object.

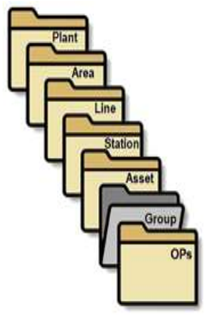
When naming the Asset Objects, they can be more than 1 - same punctuation rules as plant.

Asset - WTM A _ Bodyshop _ 6X_S010_050 _ S020 _ ***S020FX1*** _ ADV PIN 1 _ PIN 1 ADVANCED

The *ASSET* Object naming is a combination of the *Station Name + Type of station it is (Main, Fixture, and Robot)*. You would name as follows:

S020FX1 **(Station Name (*S020*)+ Fixture(*FX*) + Number(*1*)**

Group



WTM A _ Bodyshop _ 6X_S010_050 _ S020 _ S020FX1 _ ***ADV PIN 1*** *_ PIN 1 ADVANCED*

The Group Objects are Tooling Group – [Unit Type] [Unit Type Number#][Unit Type Motion] Model Abbreviation. The Group Object is the "Child' under Asset object. There can be several Group objects, so use no more than 20 characters.

Group Objects naming is typically made up from 2 group types (Tooling and Robot Motions) and 3 descriptors (Unit Type Motion, Unit Type, and Unit Type Number).
Tooling Group (Example - ADV PIN 1

[Unit Type Motion] + [Unit Type] + [Unit Type Number#]

Unit Type Motions:
ADVANCE RETRACT EXTEND
RETURN ENGAGE RAISE
CLOSE DISENGAGE RETRACT
OPEN LOWER

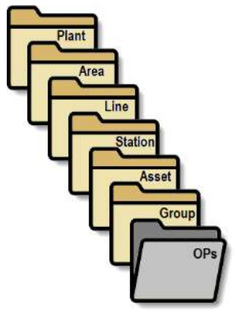
Unit Types:
PIN BACKUP
CLAMP VACUUM
DUMP PIVOT
SLIDE

Unit Type Numbers:
1, 2, 3, etc., dependent on how many of the type that are present in the group.

Robot Motion Group:	
"GO TO" Work Type Position:	"MOVE" Work Type Position
POUNCE	CLEAR OF PICK
PICK	CLEAR OF DROP
DROP	CLEAR OF PED
1ST RIVET/FDS 2ND, LAST	CLEAR OF FIXTURE
PEDESTAL	HOME

"GO TO" Work Type Position:
POUNCE
PICK
DROP
1ST RIVET/FDS 2ND, LAST
PEDESTAL

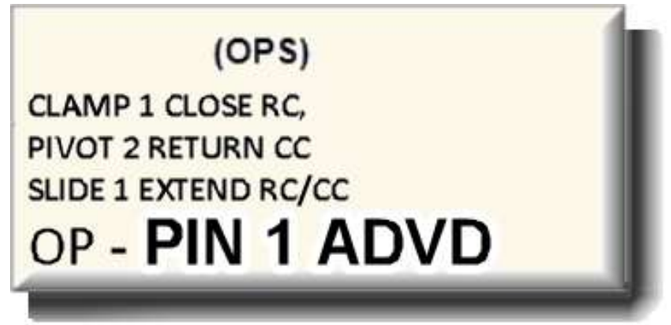
"MOVE" Work Type Position
CLEAR OF PICK
CLEAR OF DROP
CLEAR OF PED
CLEAR OF FIXTURE
HOME



OPS

The OPS or Operations objects are the "Child" objects of the Group Object. There may be at least 1 but no more than 16 for any one Group –use no more than 29 characters when naming the OPS. The naming of a Tooling Group OP typically consists of a Unit Type Abbreviation, a Unit Number, and a Unit Type Position Abbreviation.

OPS- WTM A _ Bodyshop _ 6X_S010_050 _ S020_ S020FX1 _ ADV PIN 1 _***PIN 1 ADVANCED***



Tooling Group OP

The naming of a Tooling Group OP typically consists of a Unit Type Abbreviation, a Unit Number, and a Unit Type Position Abbreviation. The full spelling can be used, however, if the OP has a long descriptor, it may be advisable, to use an abbreviation.

Unit Type Abbreviation:	Unit Type Number:	PIN 1 ADVD Unit Type Position Abbreviation:
PIN (Pinned) CLP (Clamp) DMP (Dumped) SLD (Slide) BKUP (Back Up) VAC (Vacuum) PVT (Pivot)	1, 2, 3, etc. Depending on the amount of the same Ops that a present.	Advanced = Advd Returned = Retd Closed = Clsd Opened = Opnd Extended = Extd Retracted = Rtcd Engaged = Engd Disengage = Dsng Lowered = Lwrd Raised = Rsd

Robot Motion OP

The OP also uses Robot Motions stated as Work Type Position in the naming. These are "AT" and "CLEAR OF".

AT consists of:	**CLEAR OF consists of:**
POUNCE PICK DROP 1ST RIVET/FDS 2nd LAST PEDESTAL HOME AT POUNCE	PICK DROP PED FIXTURE CLEAR OF FXT

Home Screen

When first opening the ePVS module, the first screen you'll see is named the Home screen. On this screen, it will display the notes that were posted earlier on. The latest note will be atop of the others. On the upper right-hand side of the Home page is a menu that will allow you to change to Dark Mode, and Full-Screen mode.

- Current Shift (Date Menu)
- Select a single day
- Select Multiple Days
- Home Screen Views
- Bubble View
- Hovering over an Object
- Selecting an Object
- Summary View
- Line Balance
- Statistics
- Offload

Home Window Demonstration

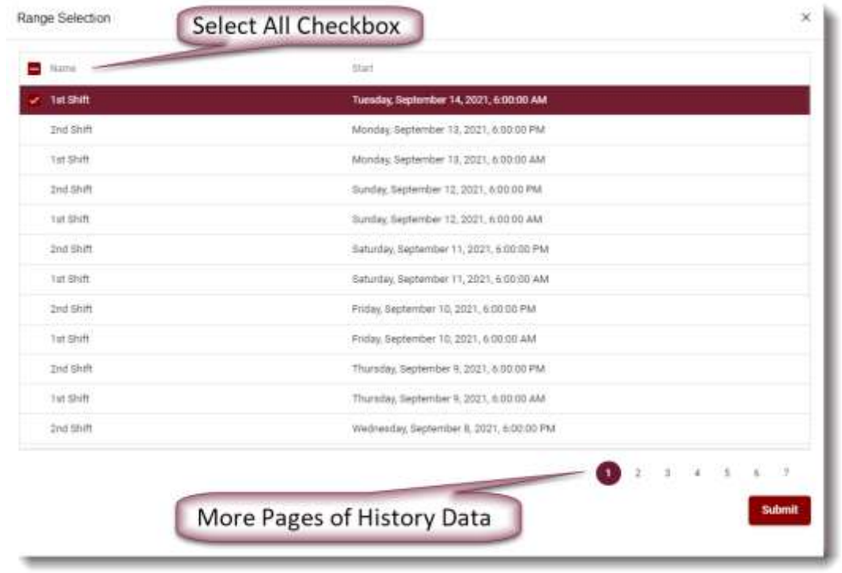
Current Shift (Date Menu)

The Current Shift date menu is in the upper left-hand side of the viewing window. Clicking on it will open the Range Selection window. It is here where the user can select multiple days or a day.

The date column will contain the last several days with the option to select a single day, multiple days, or a Select all feature.

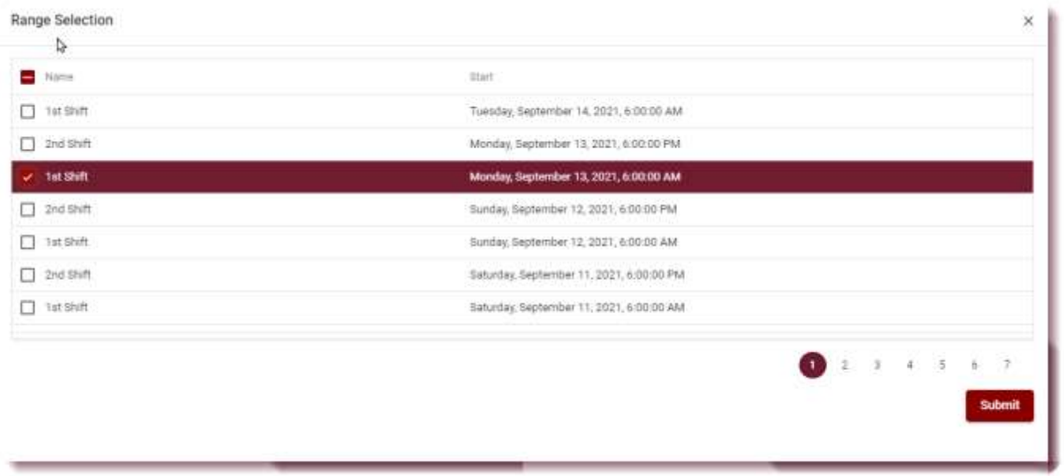
On the lower right-hand side will be more pages for a further reach into the historical data.

Make your selection then click the ***Submit*** button.



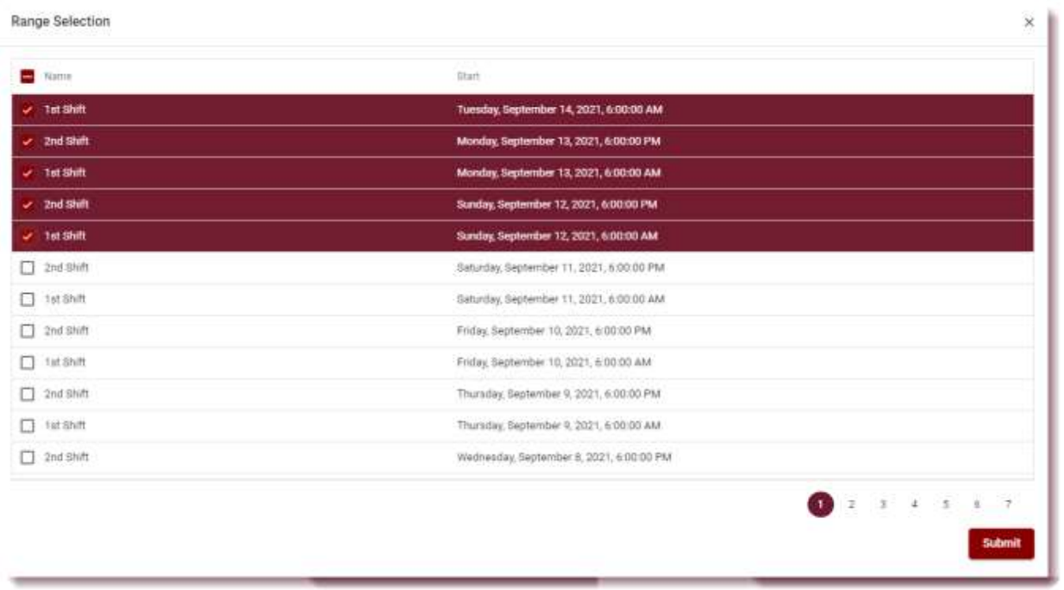
Select a single day

Select any day from the list.



Select Multiple Days

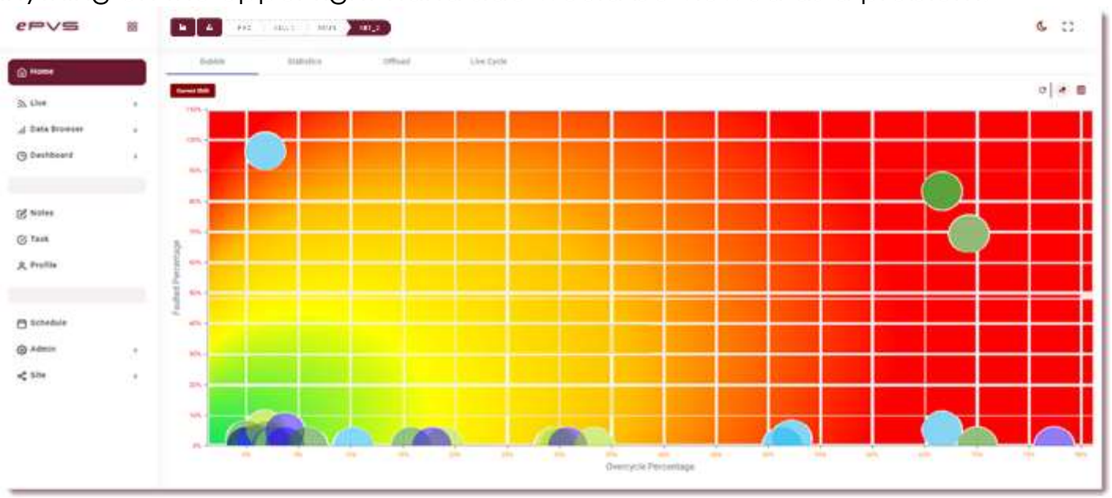
The user can also select multiple days by simply selecting different days on the list.

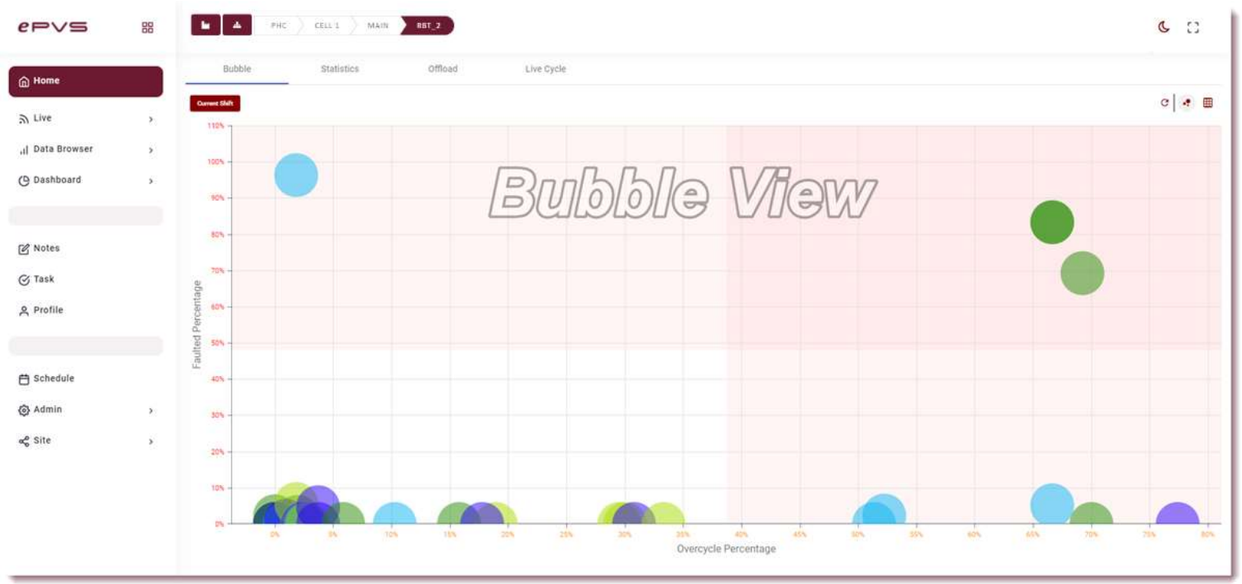


Home Screen Views

Bubble View

In this bubble chart, any object (colored dot) that is moving upward or to the right will be represented as a problem. Like going in the red. So, immediately, anything on the upper right-hand side would be viewed as a problem.





1Bubble View

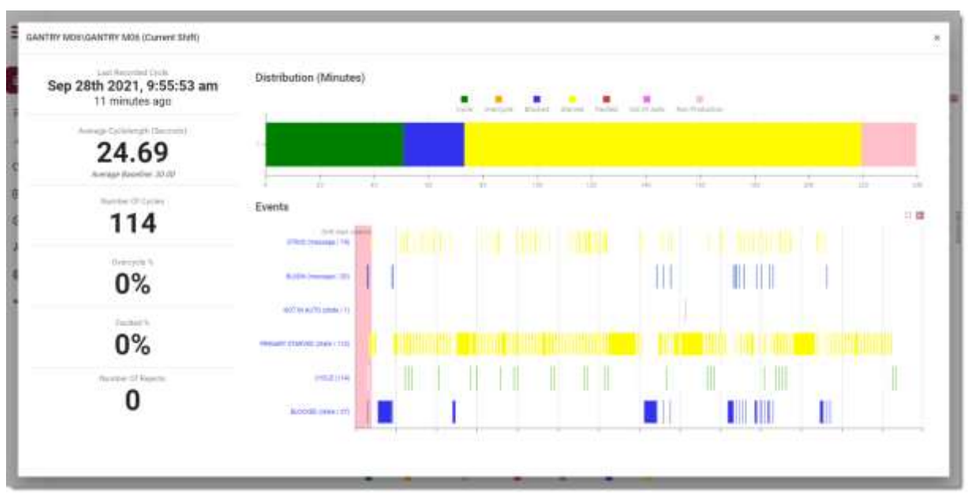
The Area in the green is in good standing, where moving out in the red would be representative of a cycle going bad.

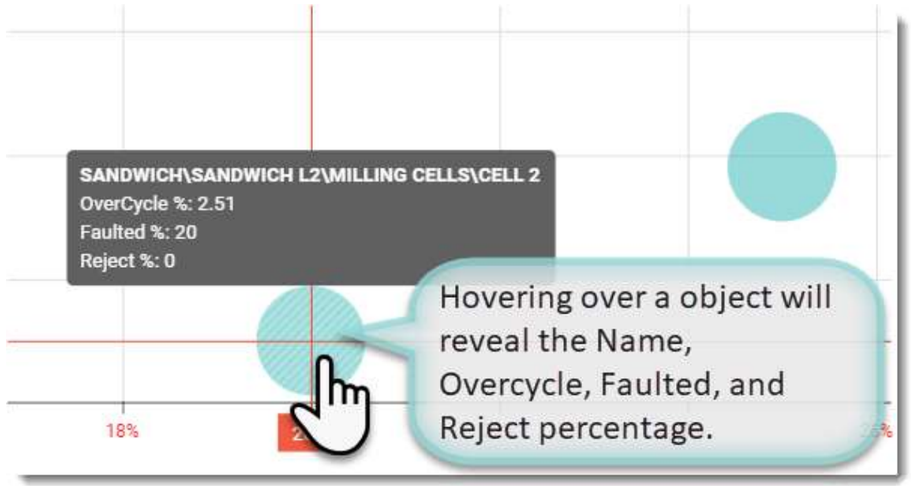
Hovering over an Object

In the bubble view, hovering over an object will reveal the Name, Over Cycle, Faulted, and Reject percentage.

Selecting an Object

When clicking on an object in the Bubble View, a new Summary window will appear with all the relevant data about the selected object.





Summary View

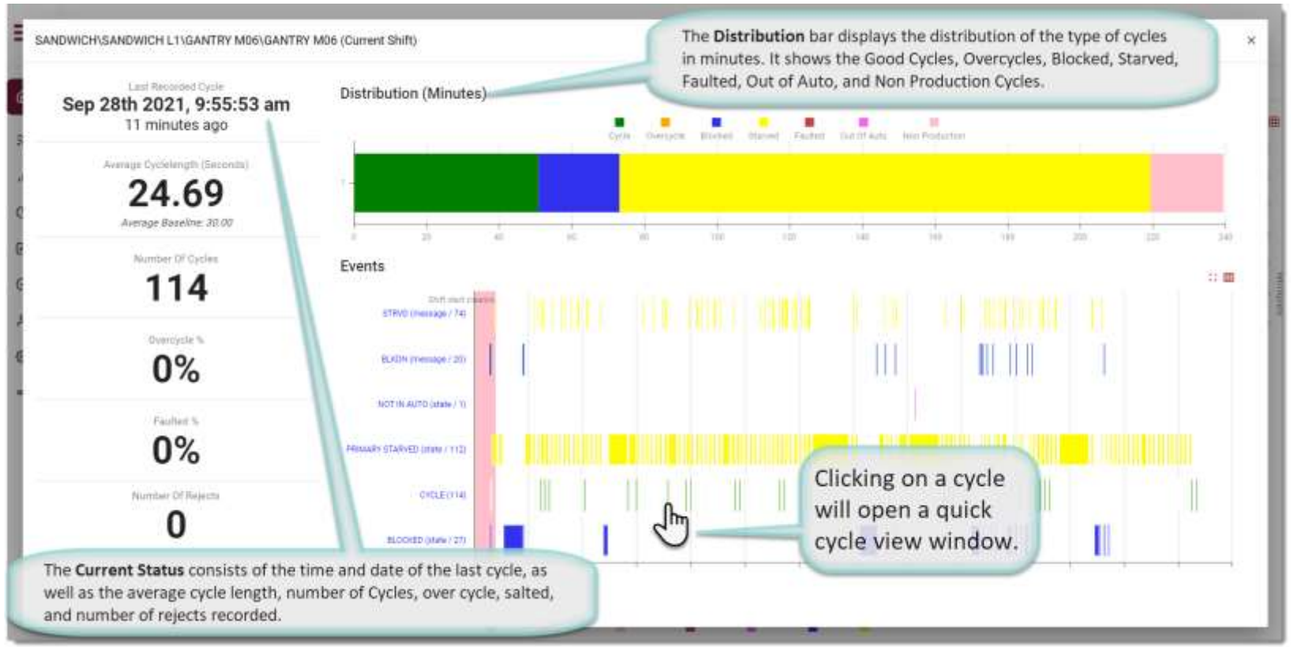
The summary review window will contain all the information on the selected cycle.

It displays the information in three parts, the Current Status, the distribution, and the timeline of the events.

The **Current Status** consists of the time and date of the last cycle, as well as the average cycle length, number of Cycles, Over Cycle, Faulted, and the rejects recorded.

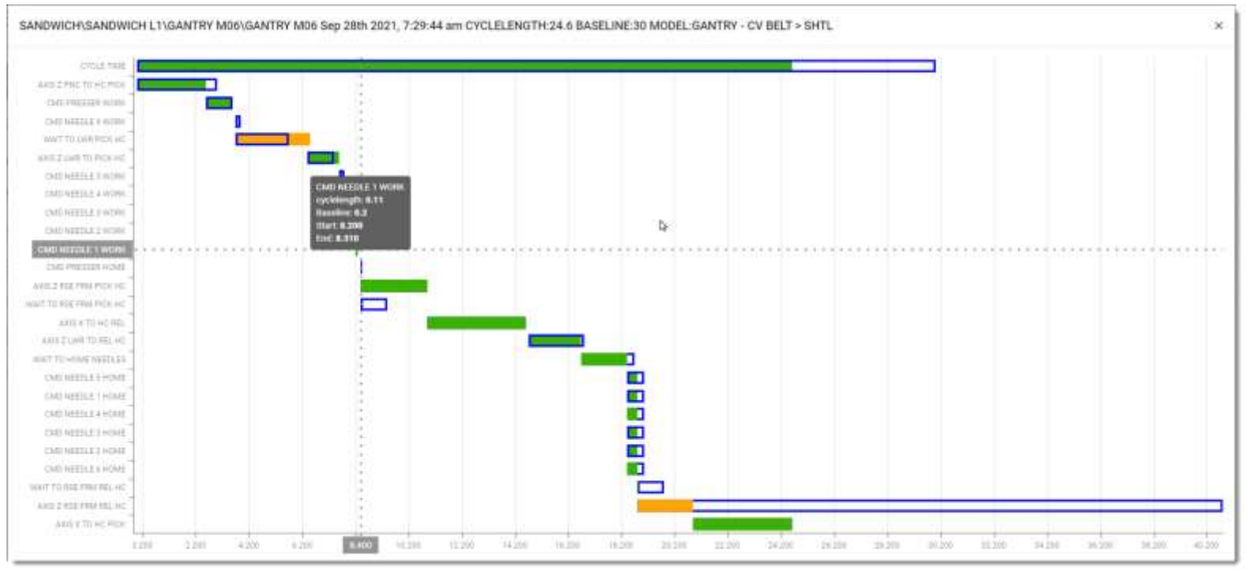
The **Distribution bar** displays the distribution of the type of cycles in minutes. It shows the Good Cycles, Over cycles, Blocked, Starved, Faulted, Out of Auto, and Non-Production Cycles.

The **Event Time View** graph displays the timeline of the selected object, breaking it down by the type of cycle that occurred over a period. The user can hover over any of the cycle bars to see detailed information about the selected cycle.



Summary View

The user can also select an object from the cycle line to view the actual cycle.

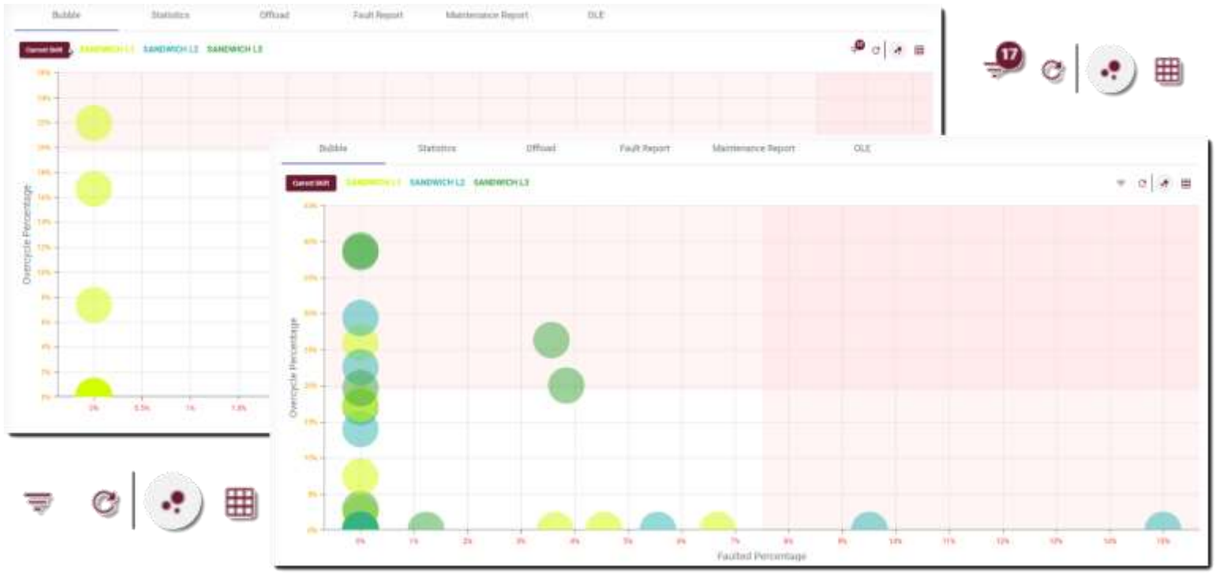


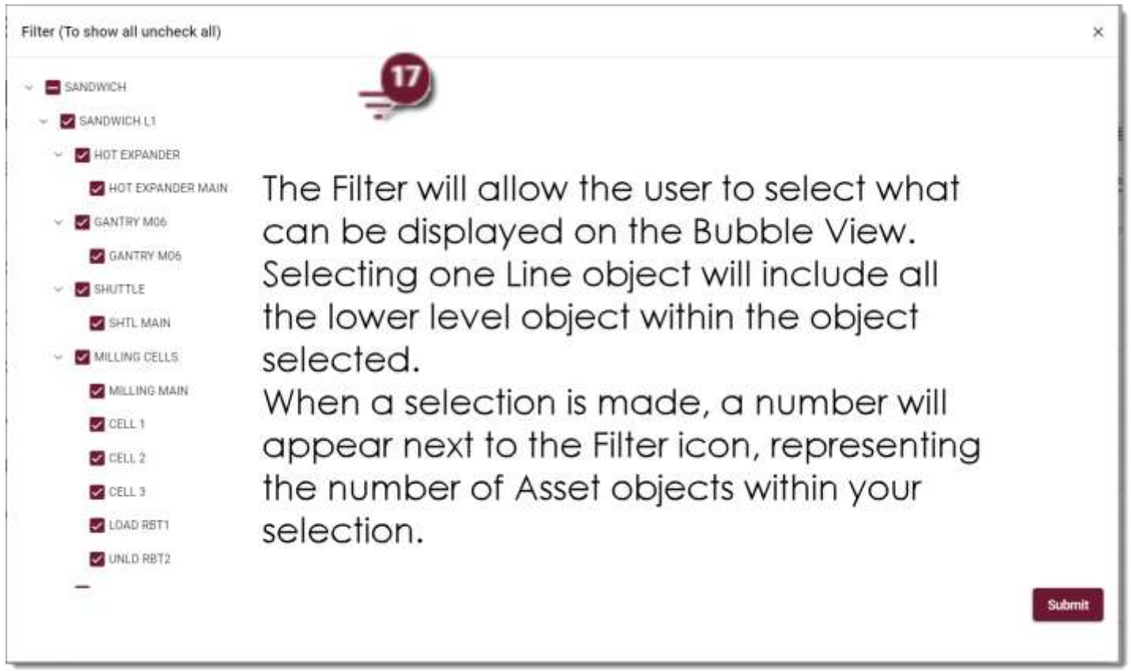
Quick Cycle

Filter Feature

The Filter will allow the user to select what can be displayed on the Bubble View. Selecting one Line object will include all the lower-level object within the object selected.

When a selection is made, a number will appear next to the Filter icon, representing the number of Asset objects within your selection.



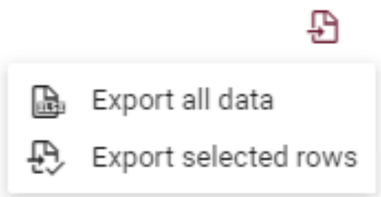


Refresh Browser

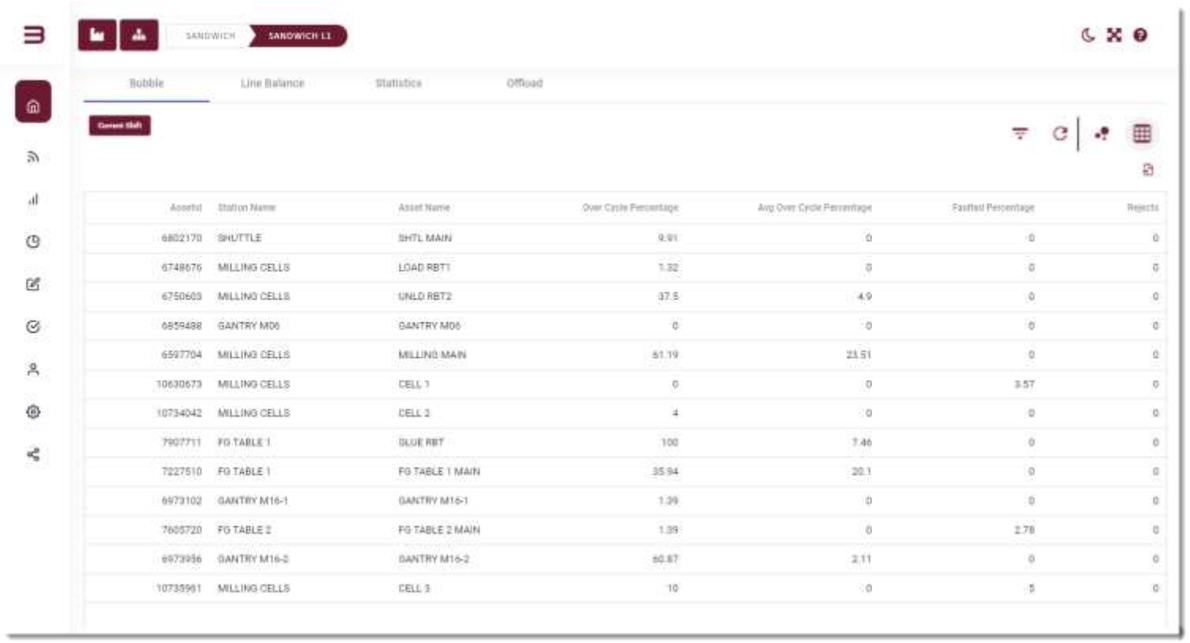
To refresh or reload the Bubble Chart, click the Refresh Icon.

Chart View

The Chart view will all the objects that will show up on the bubble chart in a table form. It will list the station name, asset name, hovercycle percentage, average hovercycle percentage, faulted percentage, and rejects. To switch back to Bubble View, select the Bubble Icon in the upper right-hand side.



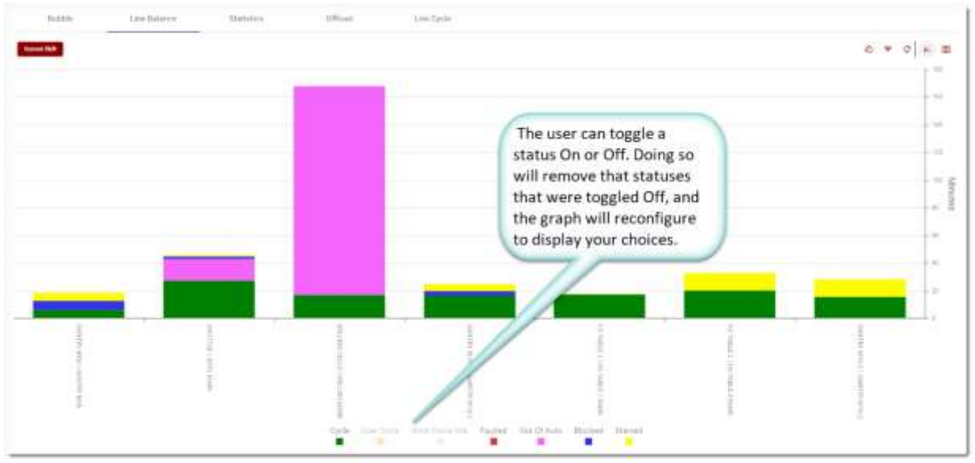
This information can also be exported to excel file. Just select the export all data or the export selected rows.

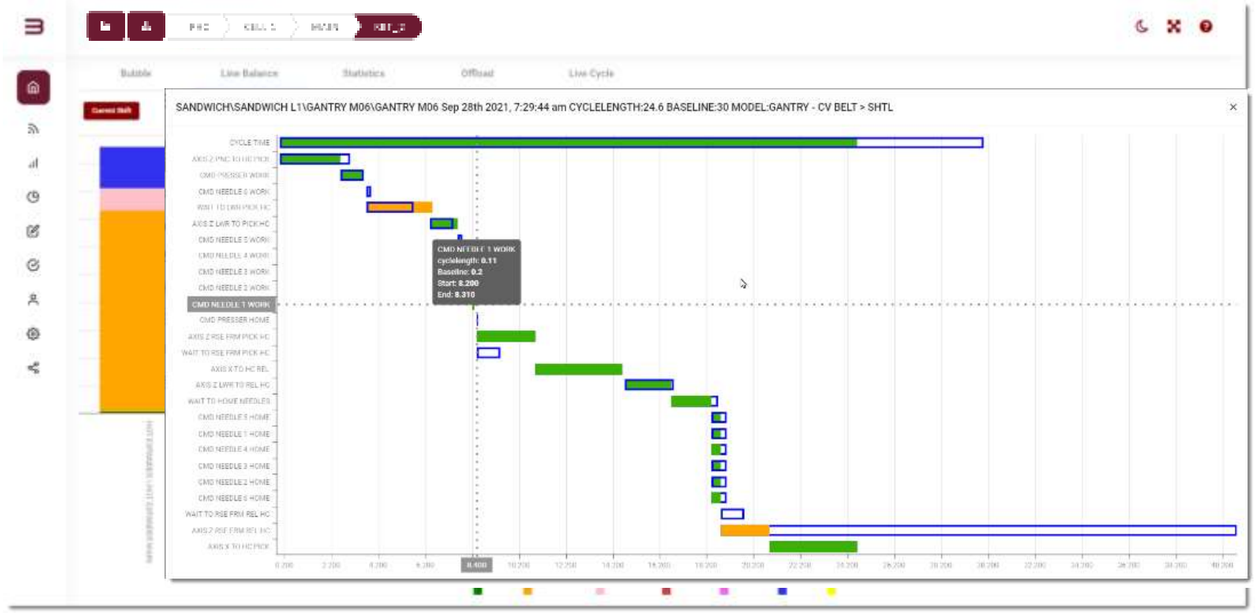


Line Balance

The Line Balance View displays all the objects within a selected line. In each object bar, the status types are stacked one upon another, displaying a distribution of the statuses for each station.

In the Status Legend below, the user can toggle a status On or Off. Doing so will remove the statuses that were toggled Off, and the graph will reconfigure to display your choices.





The Summary displays the information in three parts, the Current Status, the distribution, and the timeline of the events.

The Current Status consists of the time and date of the last cycle, as well as the average cycle length, number of Cycles, Over Cycle, Faulted, and the rejects recorded.

The Distribution bar displays the distribution of the type of cycles in minutes. It shows the Good Cycles, Over cycles, Blocked, Starved, Faulted, Out of Auto, and Non-Production Cycles.

The Event Time View graph displays the timeline of the selected object, breaking it down by the type of cycle that occurred over a period. The user can hover over any of the cycle bars to see detailed information about the selected cycle. The user can also select an object from the cycle line to view the actual cycle.

Clicking on any of the Cycle bars will open a Summary window with detailed information, including the Current Cycle Status, Distribution, and a Cycle Event section.

Clicking on any of the Cycles in the Cycle Event section will open a Quick Cycle View.

Line Balance Views

The user can change the view of the line balanced from a vertical bar graph to a horizontal graph. The legend at the bottom of the graph can be used to toggle on an off the different states. Simply click on one of them and that state will disappear, and the graph will adjust to the omitted states that were removed.

To go back to the original view just click on the vertical bar icon in the upper right-hand side of the browser.

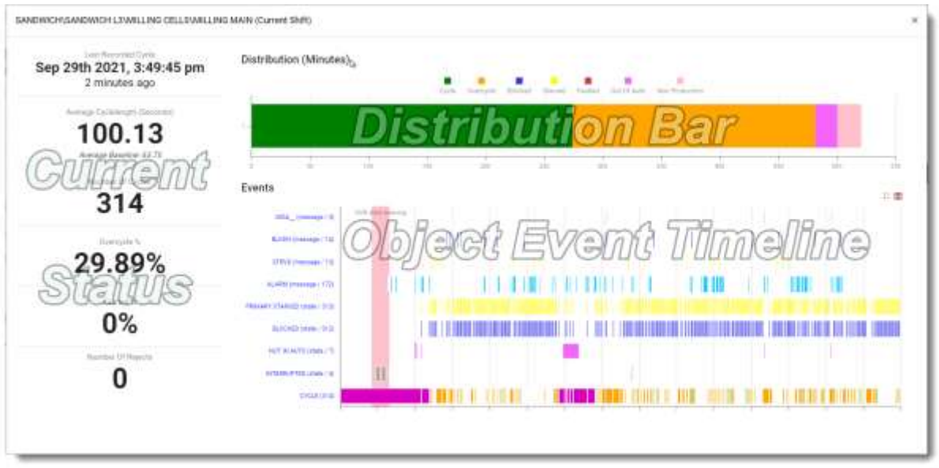
Statistics

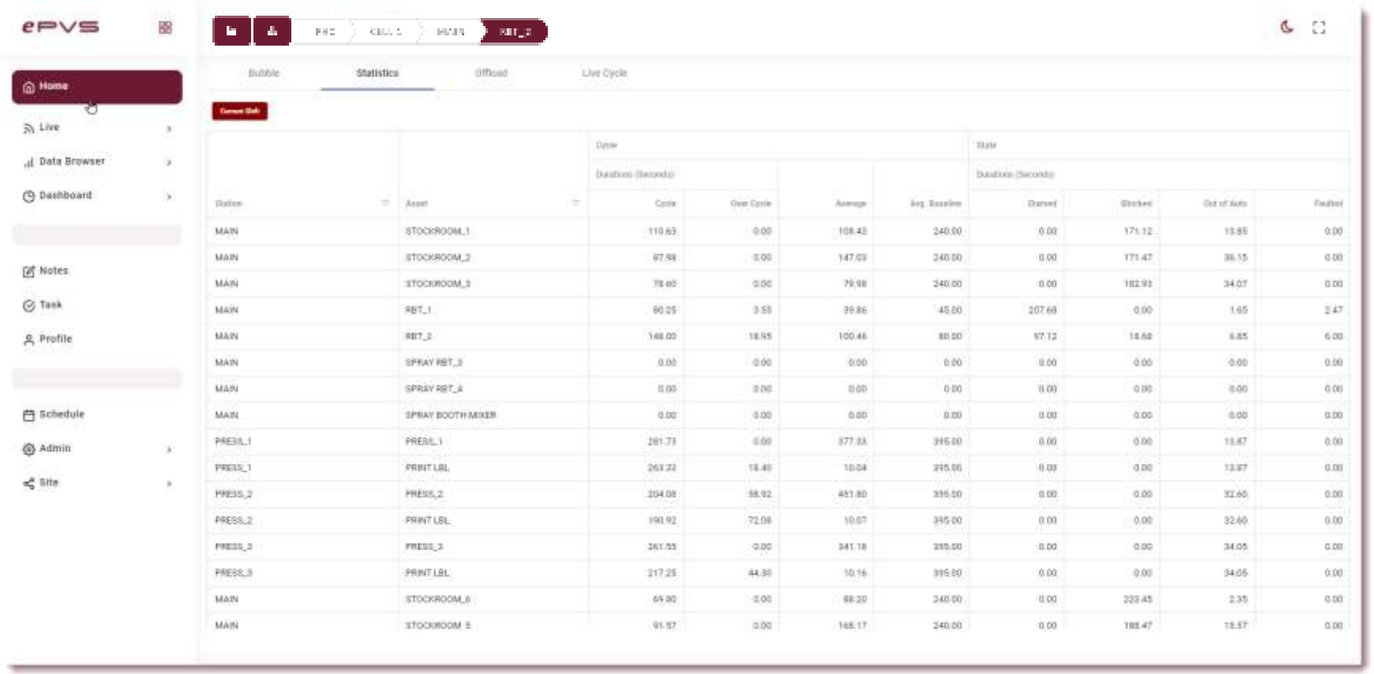
The Statistics view will display a table chart of the Station and Asset information for Cycles and States.

The Cycle information is broken down, into Duration information for Cycles (last cycle), Over Cycle, Average, and Average Baseline.

The States information shows the accumulation of each state broken down to Starved, Blocked, Out of Auto, and the Faulted States.

Clicking on any of the rows will open the Summary Display





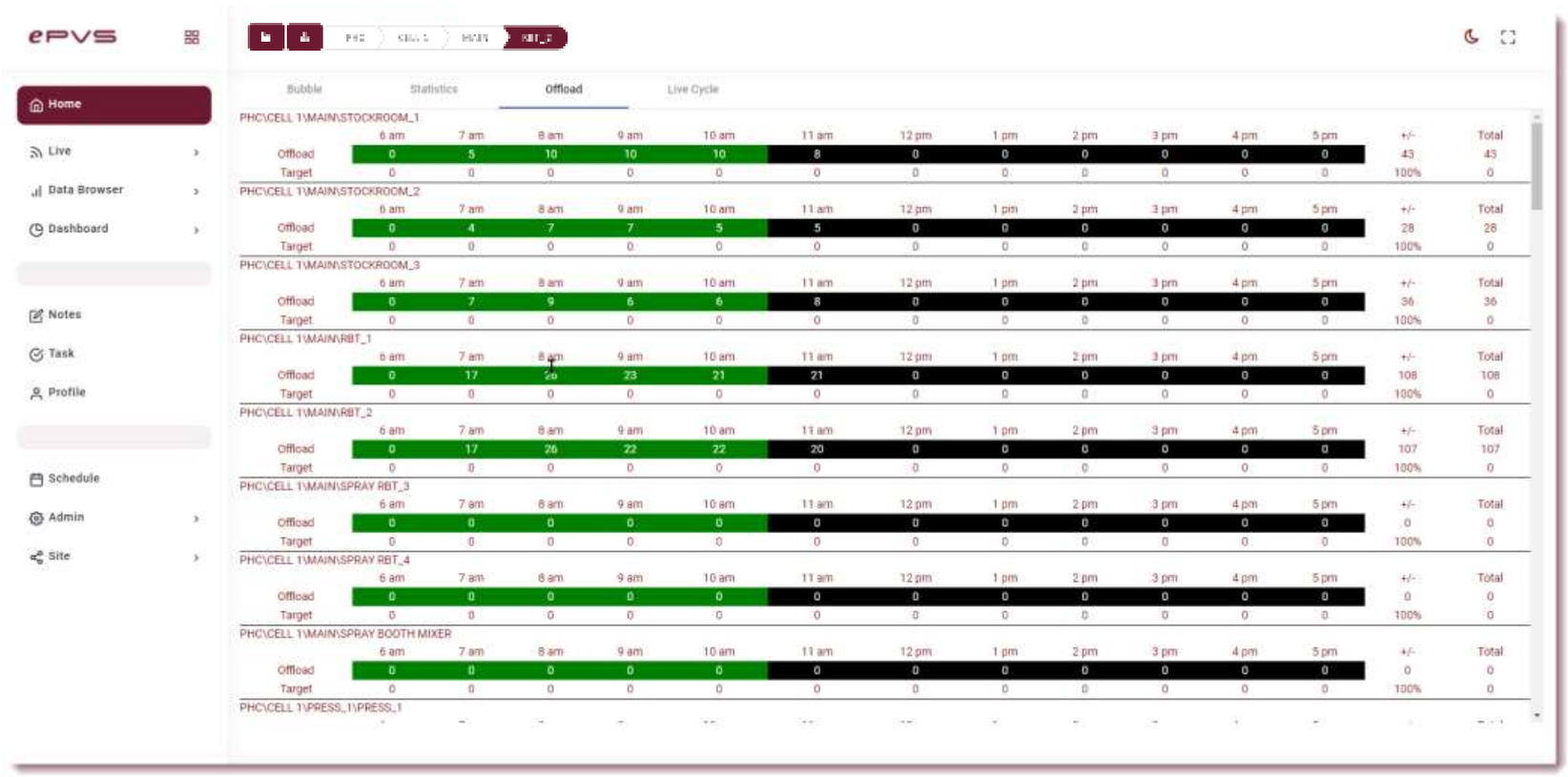
Offload

The offload tab contains a table chart of an asset by the hour. Based upon your selection in the object tree, this chart view will display all the assets within your selection.

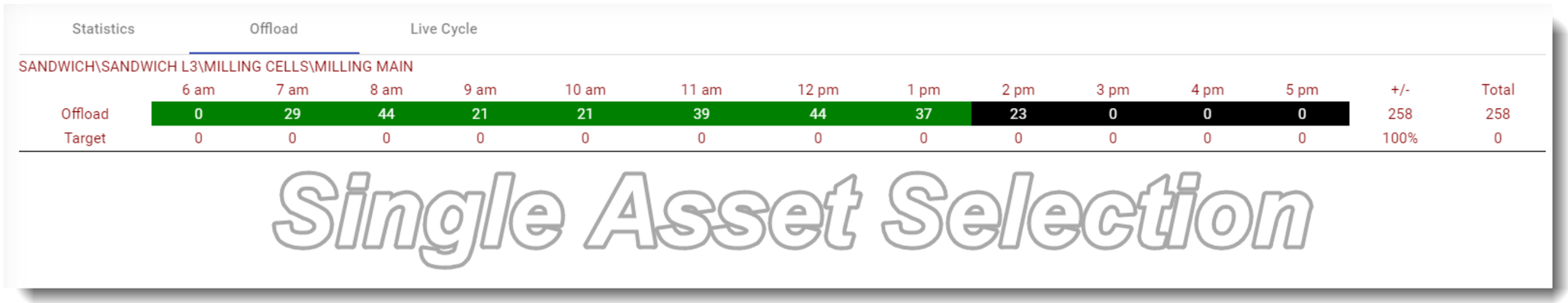
Below each offload is a target. The target can be set dynamically or statically in the administration section. This selection to the right represents a Line level object selection.

MAIN

	6 am	7 am	8 am	5 pm	+/-	Total
Offload	23	28	0	0	51	51
Target	25	26	0	0	100%	51



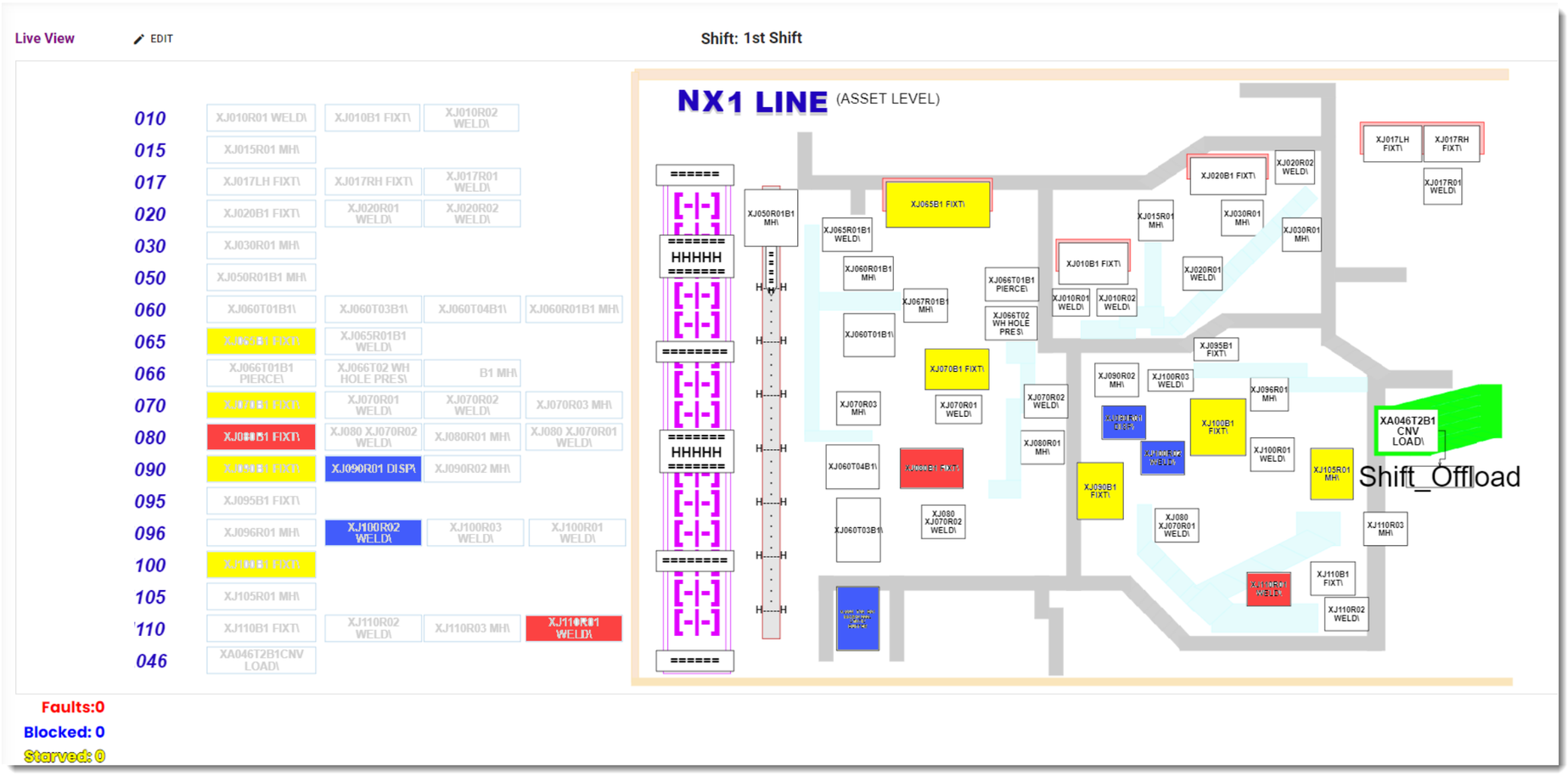
The user can drill down to an asset in which only that Asset will be displayed.



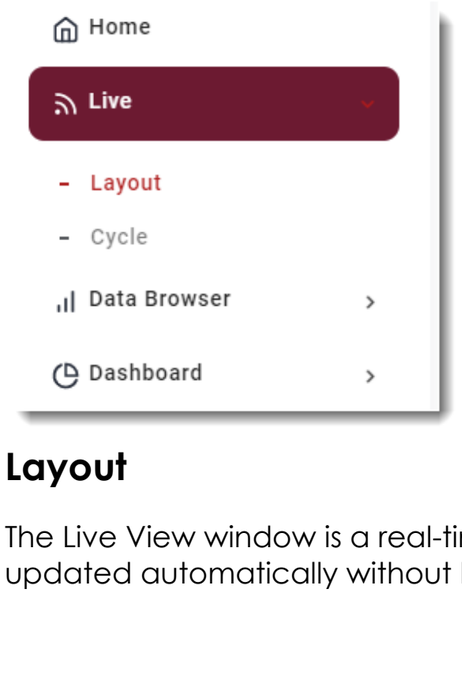
Live View 4.2

The Live View window is a real-time representation of the plant floor. With this view, you see the Current Status of every Station/Asset in the plant in real-time. Stations are updated automatically without having to refresh the window. ***Click here for an animated Live view*.**

- Opening Live View
- Layout
- Selecting an Object
- Main Display
- Object Details
- Cycles
- Building and Editing a Layout
- Editing Toolbox



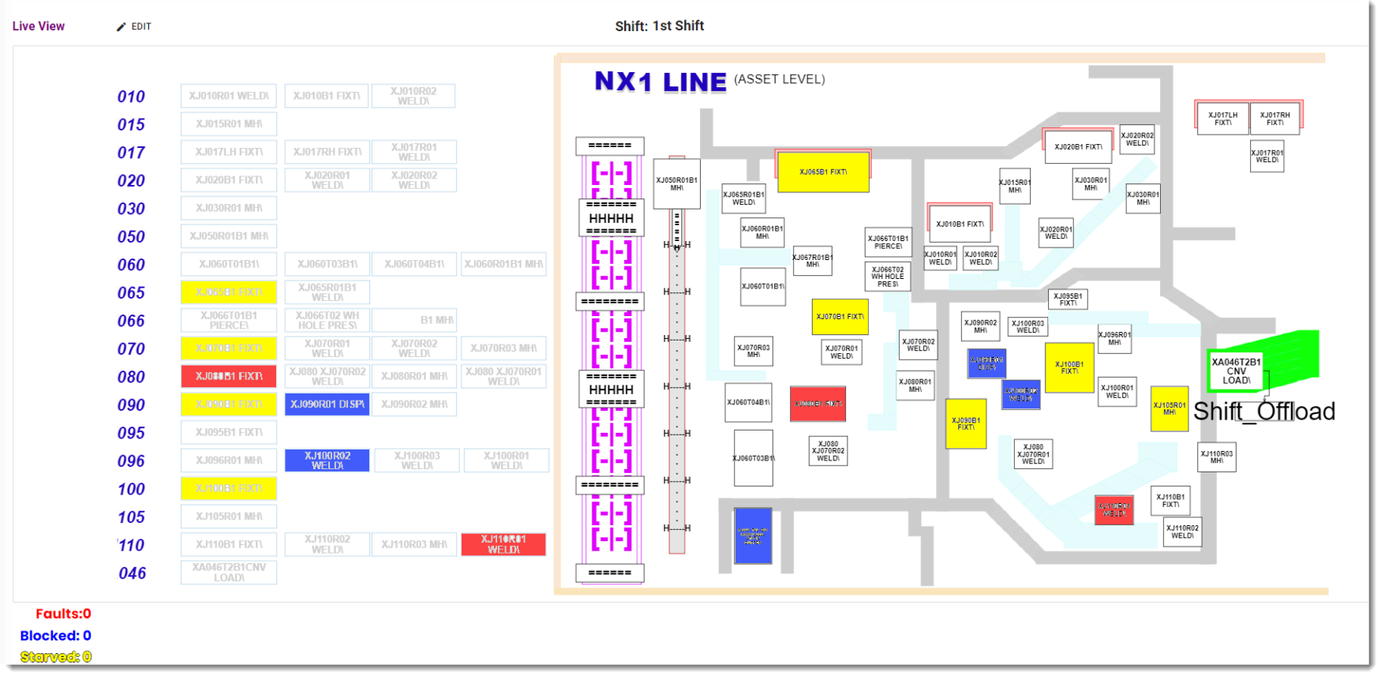
Opening Live View



To open the Live Layout, simply click the Live button in the Main Menu, on the left-hand side of the browser just below the Home icon. There will be two tabs revealed for Layout and Cycles.

Layout

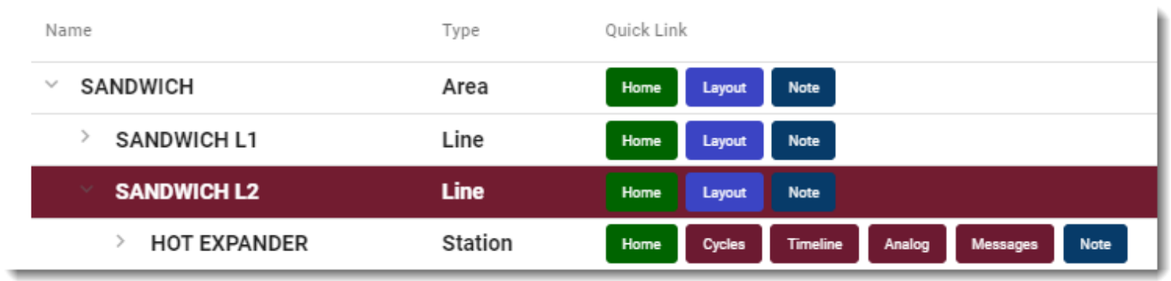
The Live View window is a real-time representation of the plant floor. With this view, you see the Current Status of every Station/Asset in the plant in real-time. Stations are updated automatically without having to refresh the window.



Selecting an Object

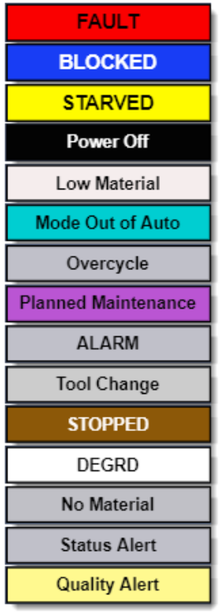
It is a set practice by BEET Personnel to place the live view layouts at a higher-level object such as the area or line.

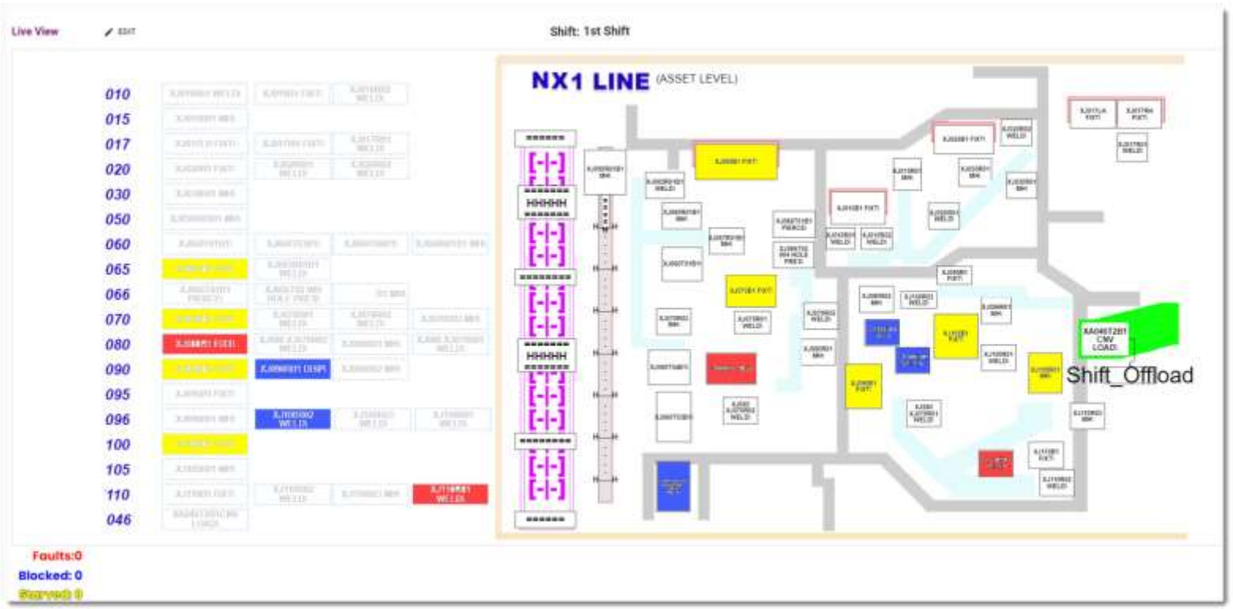
Open the object tree and search for a higher level of object with a Layout button in the Quick Links column. This signifies that it has the layout.



Main Display

The Main display initially shows the Full Plant Floor grid. The objects will be displayed in a color-coded display based upon the Current Status of the object.





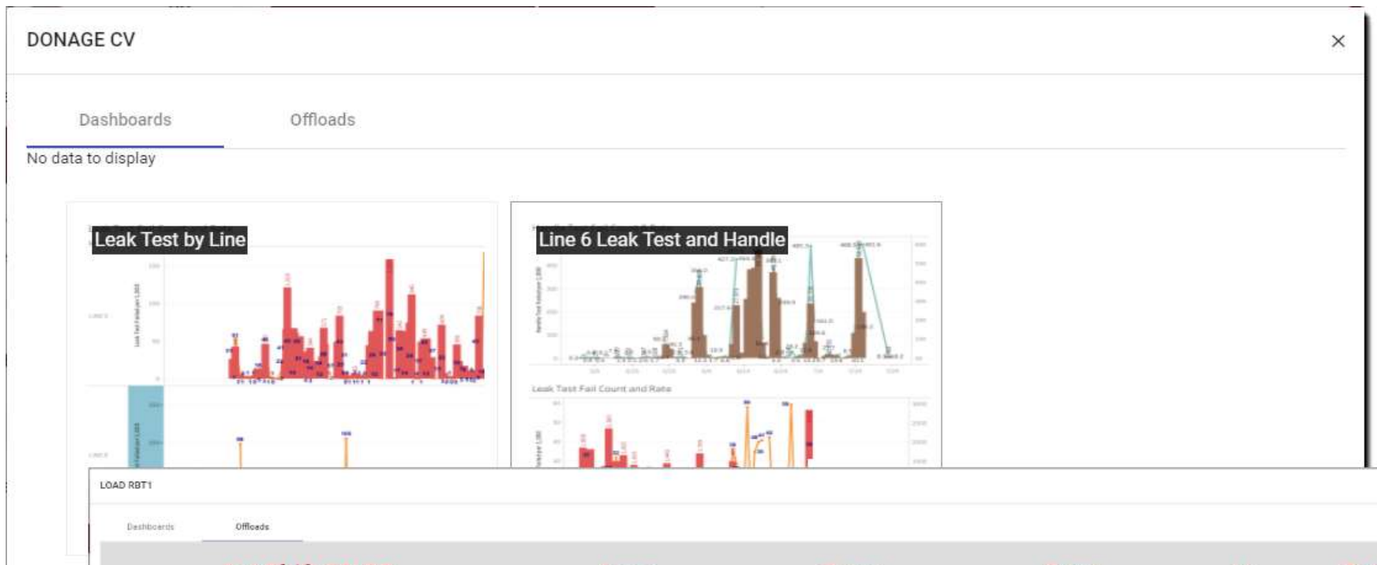
The color coding is based on message type, and not internal States. Messages are set up in the administration section. The user will have to have Administration rights to make changes to the message statuses.

Object Details

The Connected Objects on the layout browser have an accessible window with dashboards in off loads available. On dashboard creation, the dashboard is tag with a system tagged which will make it available the view in the Live Layout.

Once the user clicks on the object, a window will appear where the available Dashboard can be placed.

This window contains two tabs, a tab for the dashboards, and a tab for the offloads.



The Offload tab will contain a 3-shift hourly offload table chart. This displays each shift with an hourly offload count for each hour. Below each offload, will be a Target. If the offload is less than the target, the offload background will display in red. If the offload meets or exceeds the target, then it will display a green background.

LOAD RBT1

Dashboards | Offloads

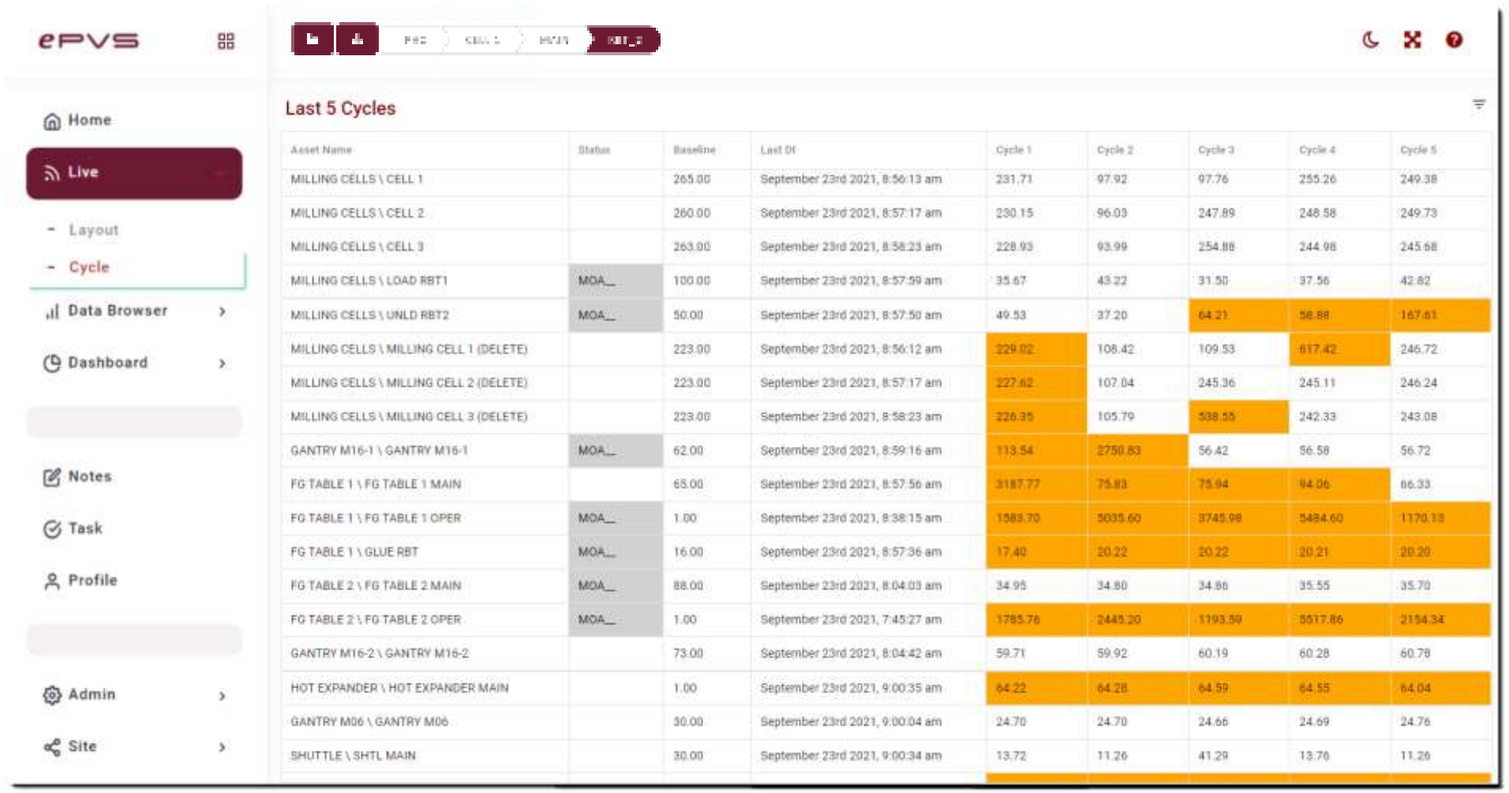
1st Shift 09-23	6 am	7 am	8 am	+/-	Total
Offload	19	33	4	-19	56
Target	20	30	25	75%	75

2nd Shift 09-22	6 pm	7 pm	8 pm	9 pm	10 pm	11 pm	12 am	1 am	2 am	3 am	4 am	5 am	+/-	Total
Offload	6	9	21	27	31	23	9	7	24	39	39	19	-91	254
Target	30	30	30	30	30	30	30	30	30	30	30	15	74%	345

1st Shift 09-22	6 am	7 am	8 am	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	+/-	Total
Offload	17	47	38	42	50	31	37	44	21	12	39	339
Target	30	30	30	30	30	30	30	30	30	30	113%	300

Cycles

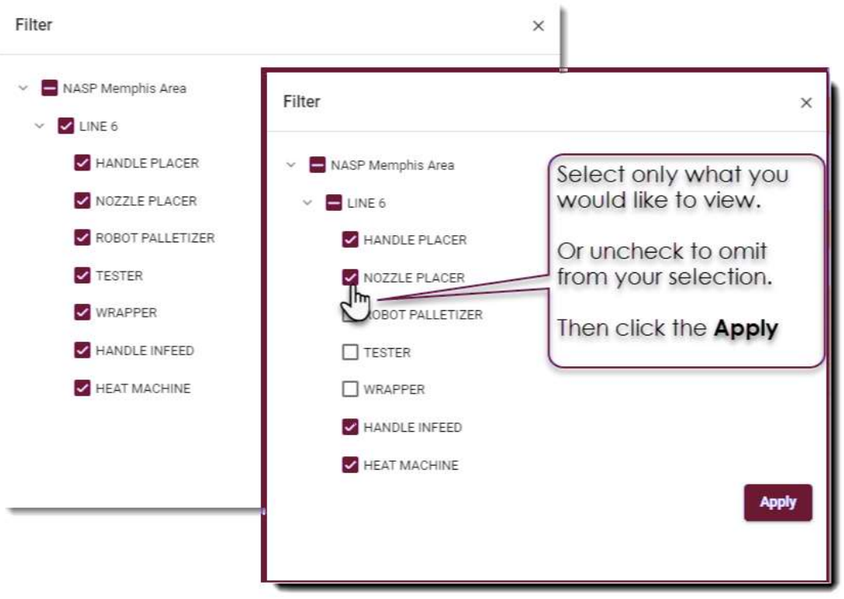
In Live Layout module, there is the Cycle section. The Cycle section is a table list that contains the last five cycles of every station. It will display the Station Name, Current Status, the Designed Baseline, the last cycle time, and the last five cycles recorded.



Filter

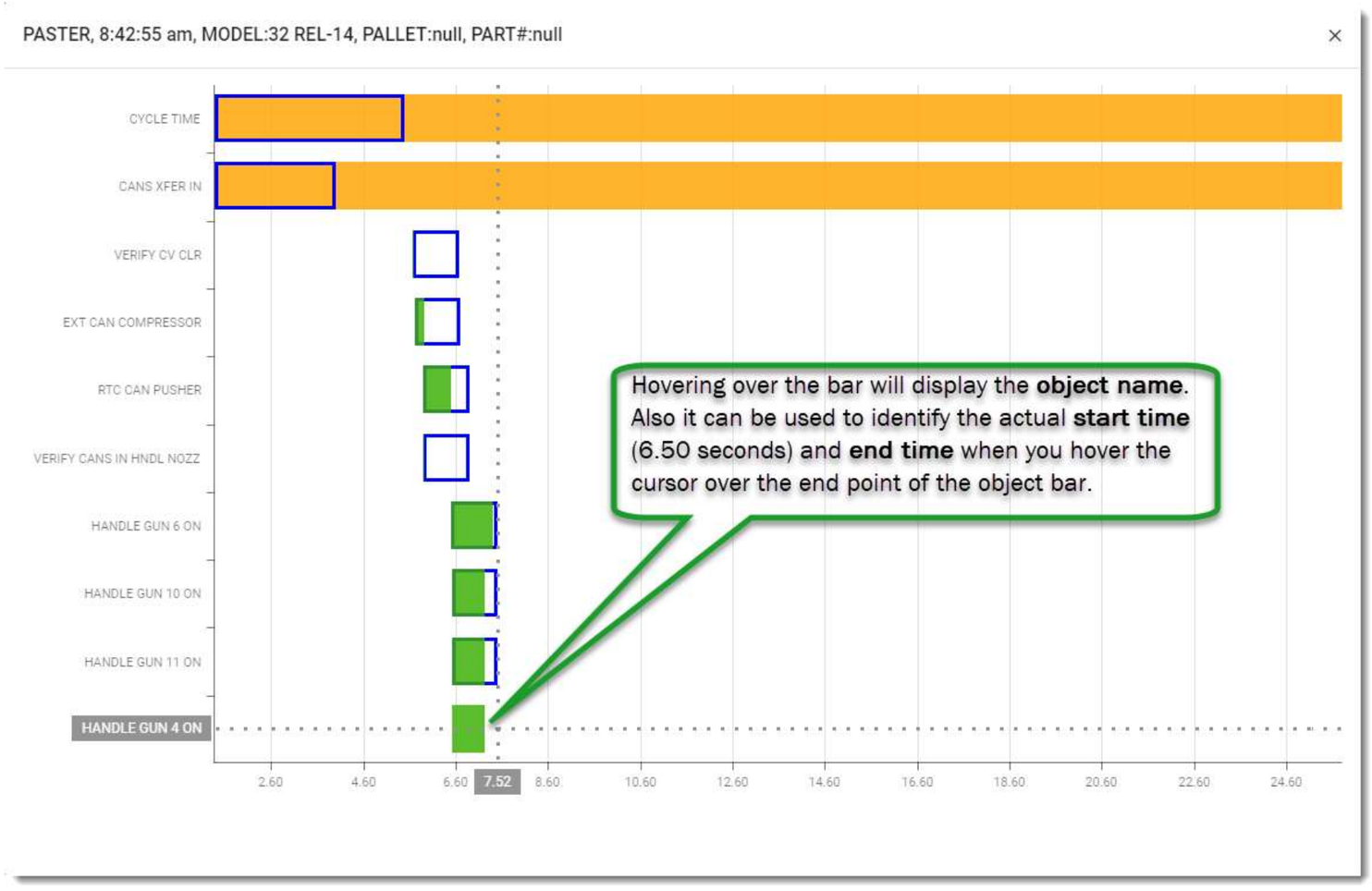
The user can use the filter feature by selecting the icon in the upper right-hand side the Last Five Cycles window. This will open the Object Tree where you can select the object you would like to view.

Simply drill down to the objects you would like to view and ensure that they are selected. Then click Apply. This will display all your selections. Click the X in the selection window to close it. It will remain open until you do.

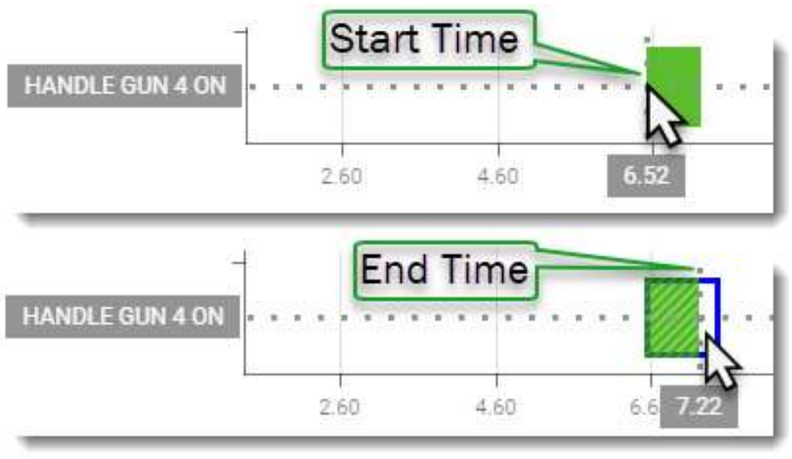


Hover Features

Clicking on any of the **Cycles 1 - 5 on the Table**, will open a window displaying the Cycle View window.



You can hover over the object bar to view the **Title, Start Time, and End Time** of the object you are hovering over.

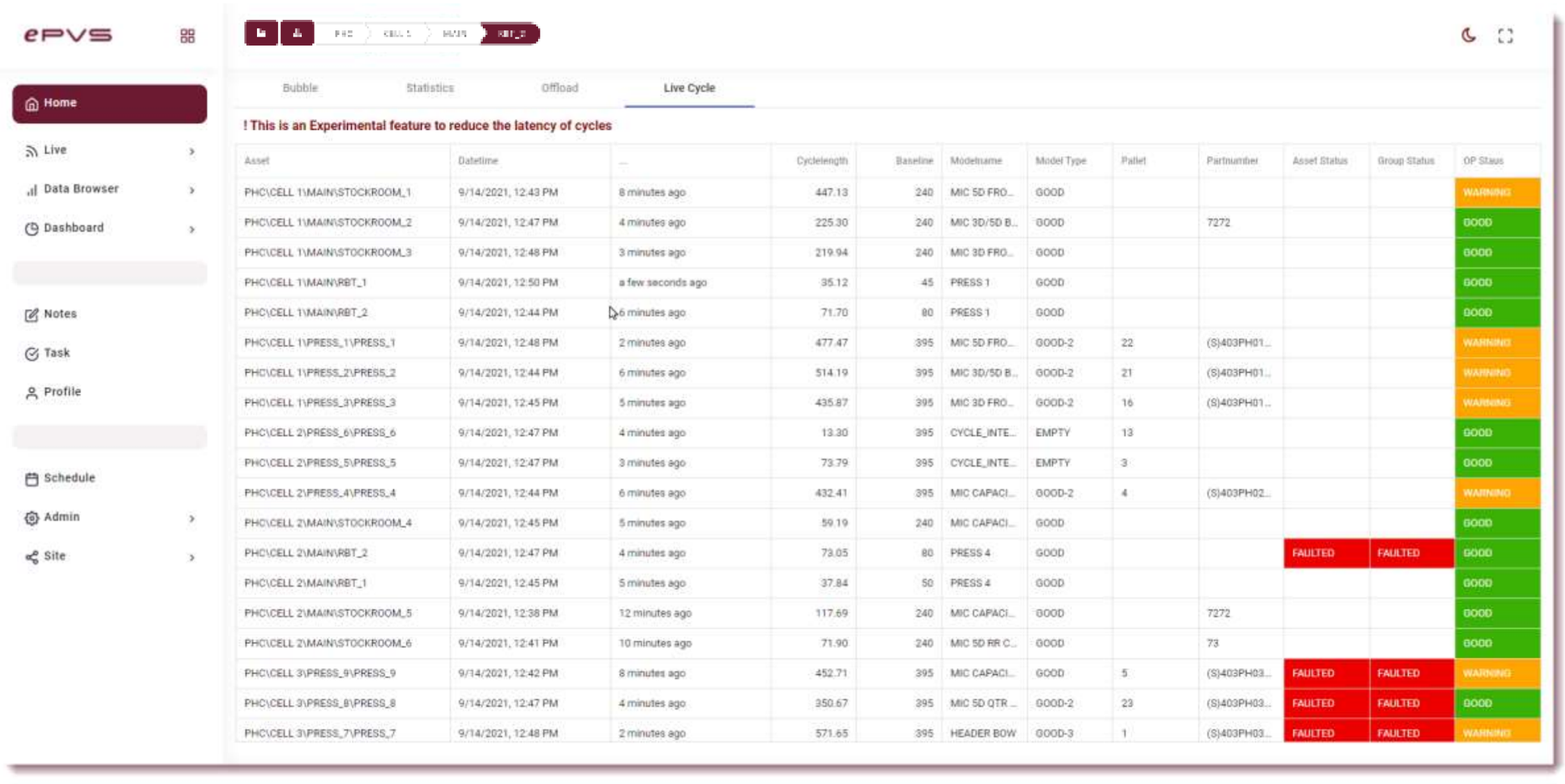


Live Cycle

The Live Cycle status displays the list of the Assets of the Last cycle that occurred, with detailed information based on your object selection.

The Chart displays the Asset, the Date and Time with the Last Cycle Timer (to the right), the Cycle Length, Baseline, Model Name, Model Type, Pallet, Part Number, Asset, Group, and OP Statuses.

This is a live table chart, that is updated in real-time.

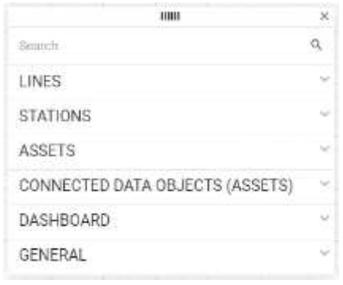


Asset	Datetime	...	Cyclelength	Baseline	Modelname	Model Type	Pallet	Partnumber	Asset Status	Group Status	OP Staus
PHC\CELL 1\MAIN\STOCKROOM_1	9/14/2021, 12:43 PM	8 minutes ago	447.13	240	MIC 5D FRO...	GOOD					WARNING
PHC\CELL 1\MAIN\STOCKROOM_2	9/14/2021, 12:47 PM	4 minutes ago	225.30	240	MIC 3D/5D B...	GOOD		7272			GOOD
PHC\CELL 1\MAIN\STOCKROOM_3	9/14/2021, 12:48 PM	3 minutes ago	219.94	240	MIC 3D FRO...	GOOD					GOOD
PHC\CELL 1\MAIN\RBT_1	9/14/2021, 12:50 PM	a few seconds ago	35.12	45	PRESS 1	GOOD					GOOD
PHC\CELL 1\MAIN\RBT_2	9/14/2021, 12:44 PM	6 minutes ago	71.70	80	PRESS 1	GOOD					GOOD
PHC\CELL 1\PRESS_1\PRESS_1	9/14/2021, 12:48 PM	2 minutes ago	477.47	395	MIC 5D FRO...	GOOD-2	22	(S)403PH01...			WARNING
PHC\CELL 1\PRESS_2\PRESS_2	9/14/2021, 12:44 PM	6 minutes ago	514.19	395	MIC 3D/5D B...	GOOD-2	21	(S)403PH01...			WARNING
PHC\CELL 1\PRESS_3\PRESS_3	9/14/2021, 12:45 PM	5 minutes ago	435.87	395	MIC 3D FRO...	GOOD-2	16	(S)403PH01...			WARNING
PHC\CELL 2\PRESS_6\PRESS_6	9/14/2021, 12:47 PM	4 minutes ago	13.30	395	CYCLE_INTE...	EMPTY	13				GOOD
PHC\CELL 2\PRESS_5\PRESS_5	9/14/2021, 12:47 PM	3 minutes ago	73.79	395	CYCLE_INTE...	EMPTY	3				GOOD
PHC\CELL 2\PRESS_4\PRESS_4	9/14/2021, 12:44 PM	6 minutes ago	432.41	395	MIC CAPACI...	GOOD-2	4	(S)403PH02...			WARNING
PHC\CELL 2\MAIN\STOCKROOM_4	9/14/2021, 12:45 PM	5 minutes ago	59.19	240	MIC CAPACI...	GOOD					GOOD
PHC\CELL 2\MAIN\RBT_2	9/14/2021, 12:47 PM	4 minutes ago	73.05	80	PRESS 4	GOOD			FAULTED	FAULTED	GOOD
PHC\CELL 2\MAIN\RBT_1	9/14/2021, 12:45 PM	5 minutes ago	37.84	50	PRESS 4	GOOD					GOOD
PHC\CELL 2\MAIN\STOCKROOM_5	9/14/2021, 12:38 PM	12 minutes ago	117.69	240	MIC CAPACI...	GOOD		7272			GOOD
PHC\CELL 2\MAIN\STOCKROOM_6	9/14/2021, 12:41 PM	10 minutes ago	71.90	240	MIC 5D RR C...	GOOD		73			GOOD
PHC\CELL 3\PRESS_9\PRESS_9	9/14/2021, 12:42 PM	8 minutes ago	452.71	395	MIC CAPACI...	GOOD	5	(S)403PH03...	FAULTED	FAULTED	WARNING
PHC\CELL 3\PRESS_8\PRESS_8	9/14/2021, 12:47 PM	4 minutes ago	350.67	395	MIC 5D QTR ...	GOOD-2	23	(S)403PH03...	FAULTED	FAULTED	GOOD
PHC\CELL 3\PRESS_7\PRESS_7	9/14/2021, 12:48 PM	2 minutes ago	571.65	395	HEADER BOW	GOOD-3	1	(S)403PH03...	FAULTED	FAULTED	WARNING

Building and Editing a Layout

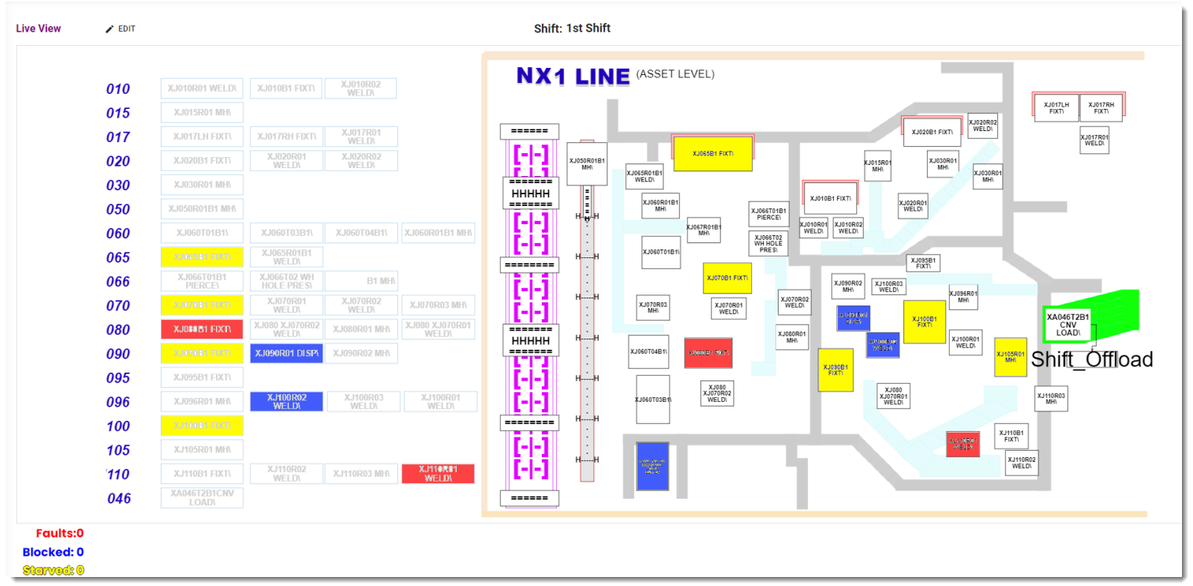
Editing Toolbox

The editing toolbox will contain all the parameters in elements of the live layout.



To start, click the edit button in the upper left-hand side of the live layout window. This will open an editing screen layout. On the left-hand side of this editing window, will be the editing toolbox. This contains parameter sections for lines, stations, assets, connect to data objects, dashboards, and general items. All these items can be used to make a simple layout of the factory.

This palette can be moved anywhere on the editing window, by simply clicking and holding the top of the toolbox and dragging it to where you would like to place it.



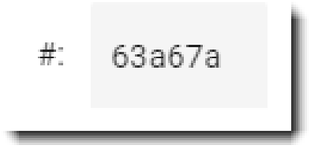
Top Editing Ribbon

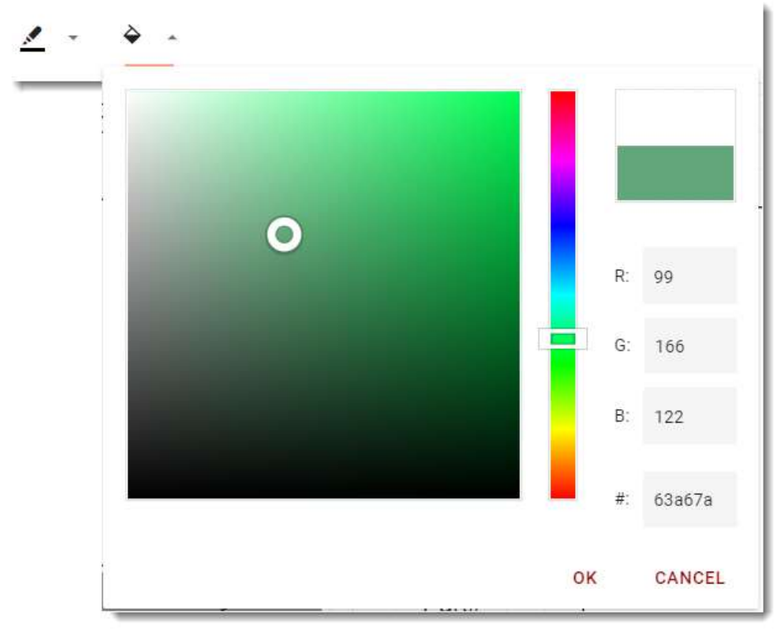
This menu contains the tools to color and configure the items that are placed on the layout. It starts with and redo option.

To the right is a font and font size selection.

Further to the right is the parameter color palette. With these palettes, you can choose the color of the fonts, the line color around the object you place, and the color fill color of the object selected.

If you know the color code number it can be simply copied and pasted in the number section, then click okay.



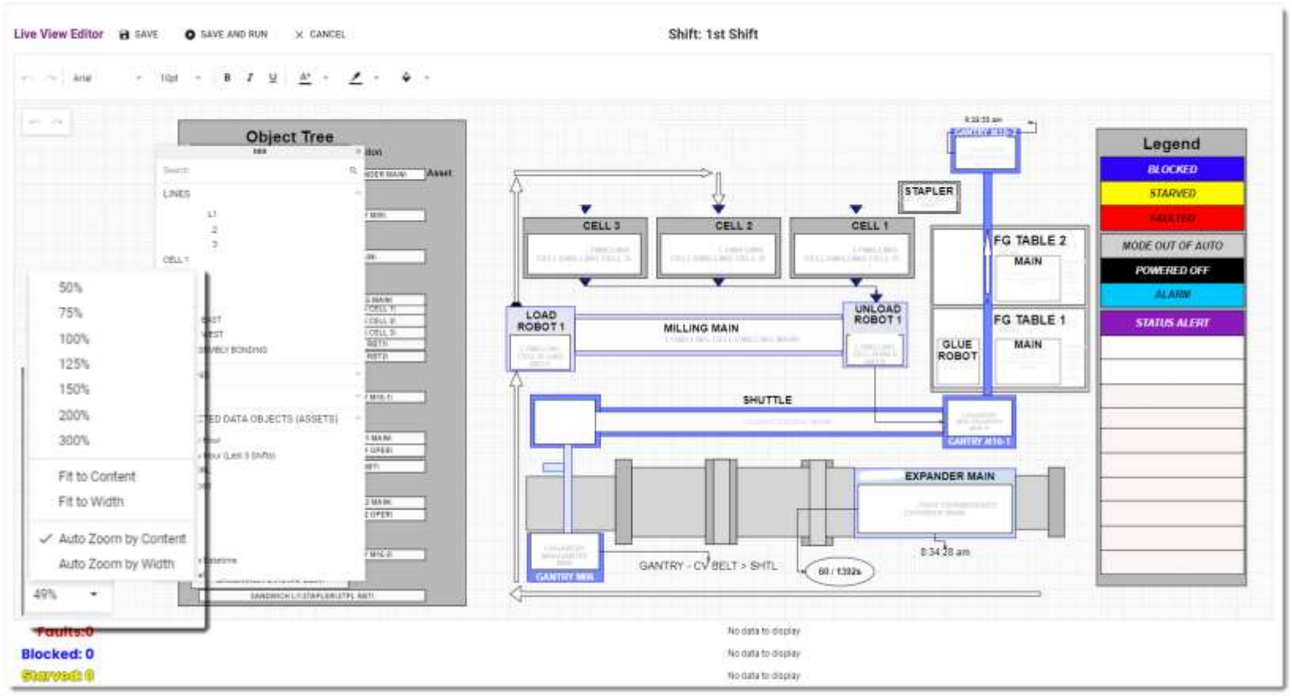


Zoom/View Setting

When the layout is first open in the editing mode, the scale of the layout is auto zoomed to fit all the content of the rendered layout.

When building a layout, the user can zoom in to layout which can make it easier in building the layout.

The layout is default to the Auto Zoom by Content. With every added object, the layout will auto center to the content of the layout.



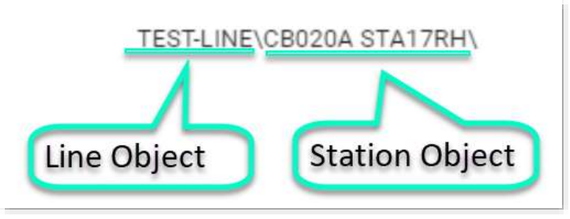
LINES

In the lines tab, will be all the line objects that are available in ePVS for your selected Plant or Area. These objects are automatically configured and connected to the objects of the line.

All the Line, Station, and Asset level objects are active objects, which means based upon the message being produced an enSight, the color of the object changes to match the current message status. If multiple messages are present them it will color itself based upon priority, example a fault will display over a block or starved message status.

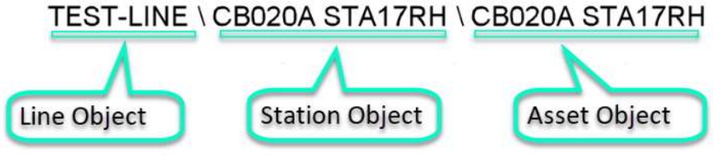
STATIONS

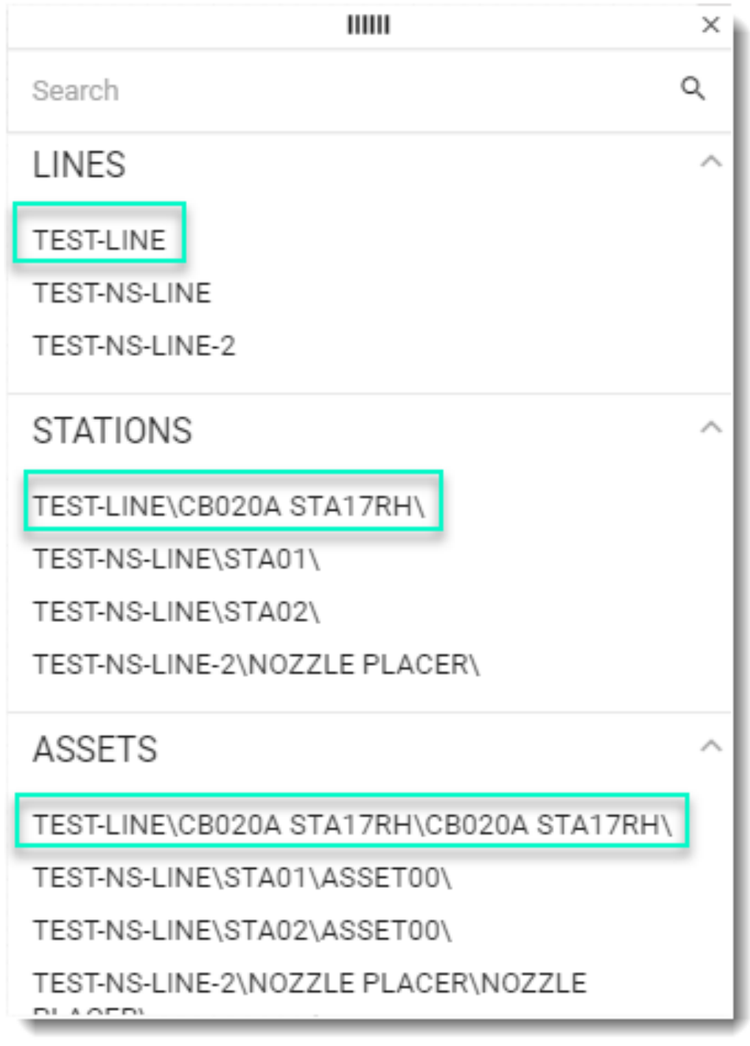
In the station tab, will be a list of all the stations of every line available. If there are three lines, then all the station within the three lines will be available there. They will be listed with the line designation before the station designation. This will help in clarifying the objects title.



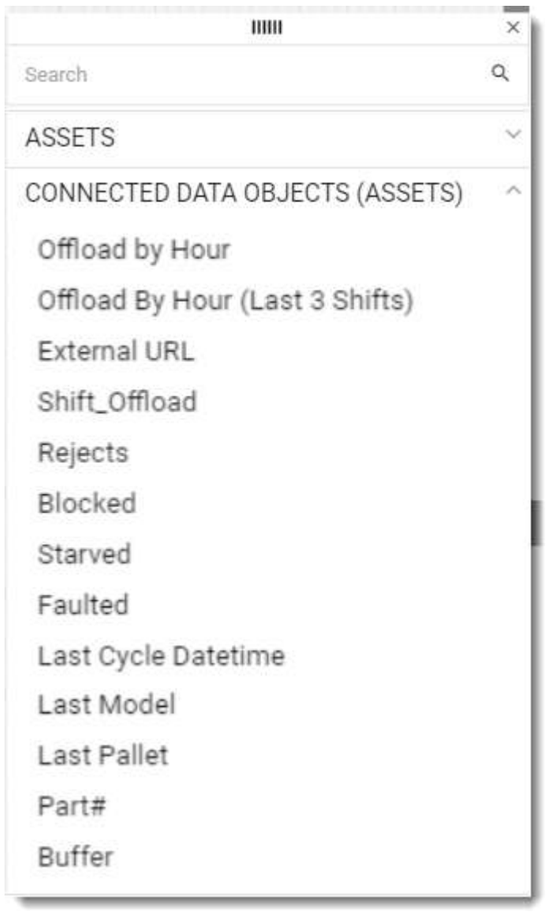
ASSETS

In the station tab, will be a list of all the stations of every line available. If there are three lines, then all the station within the three lines will be available there. They will be listed with the line designation before the station designation. This will help in clarifying the objects title.



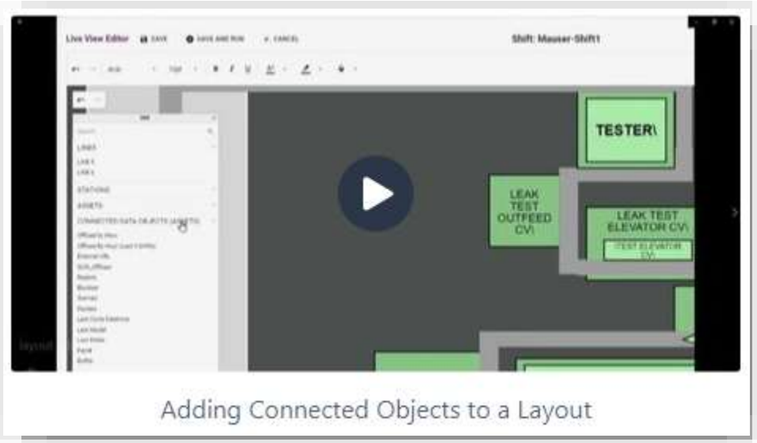


CONNECTED DATA OBJECTS



They Connected Data are a collection of tables, parameters, informational placards, and the ability to link to an external URL.

The Connected Data Objects are a collection of graphing platforms, utilizing Table Charts, single parameters, and other informational information placards.



Adding Connected Objects to a Layout

Offload by Hour and (Last 3 Shifts)

These table charts are prebuilt to be placed at a Pay Point and will show the Offload at the Pay Point.

This table chart shows the Offloads by Hour and with an option for the last 3 shifts. Below the offload is the Target. The Target is set in the Administration section.

External URL

The user can insert an external URL that can link to dashboard or an article on the web.

Shift Offload

The shift offload parameter can be placed next to an asset object, then connected from the asset to the shift offload parameter. With the parameters connected, click the Save and Run button. A few moments later, the shift offload placard will display the shift offload for the asset you are connected to.

Shift1 09-27	6 am	7 am	8 am	9 am	10 am	11 am	12 pm	1 pm	+/-	Total
Offload	0	0	0	0	0	0	0	0	0	0
Target	0	0	0	0	0	0	0	0	100%	0

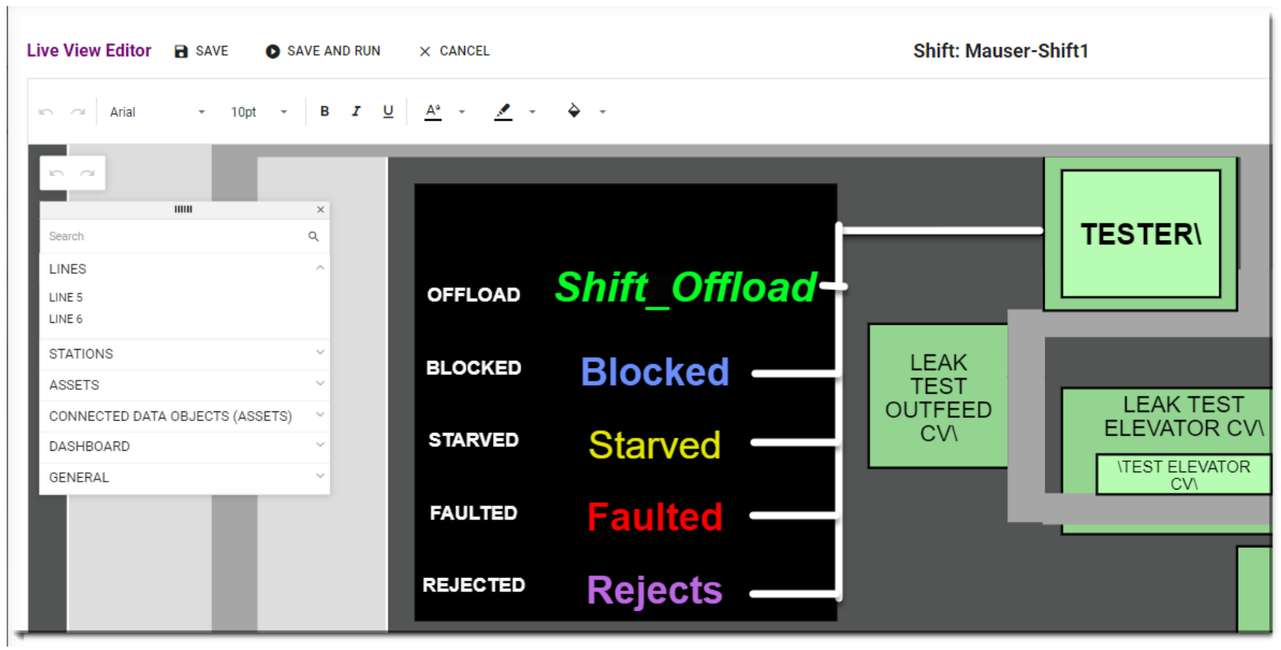
Shift2 09-27	6 am	7 am	8 am	9 am	10 am	11 am	12 pm	1 pm	+/-	Total
Offload	0	0	0	0	0	0	0	0	0	0
Target	0	0	0	0	0	0	0	0	100%	0

Shift3 09-27	6 am	7 am	8 am	9 am	10 am	11 am	12 pm	1 pm	+/-	Total
Offload	0	0	0	0	0	0	0	0	0	0
Target	0	0	0	0	0	0	0	0	100%	0

Rejects, Blocked, Starved, and Faulted

These parameters can be place near the asset and then connected to by the asset.

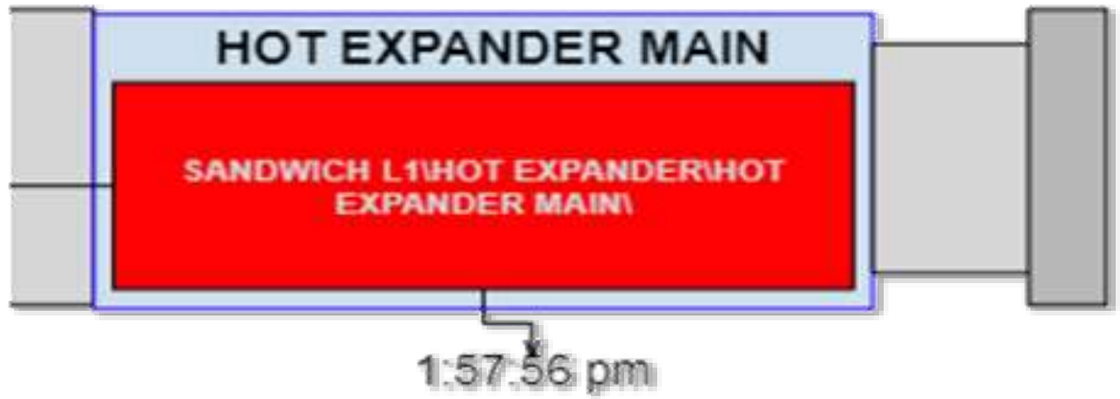
When ran, the parameter will display the number of occurrences, and the total amount of time that the asset accumulated.



Last Cycle Datetime

This parameter can be placed at any asset object. Good practice would be to place the last cycle date time parameter at the beginning and the end and various places within the factory line. This could be a good way to tell if problems will start to arise such as blocks and starved situations.

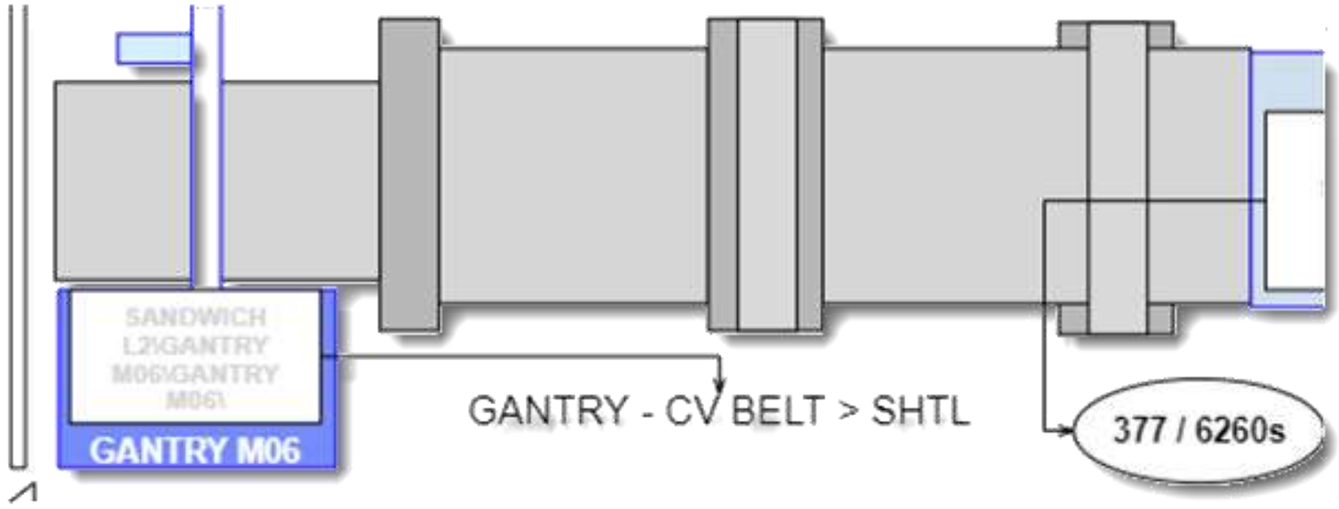
An example would be that you're in time should be later than an upstream time. If the end time is earlier than that object is running behind.



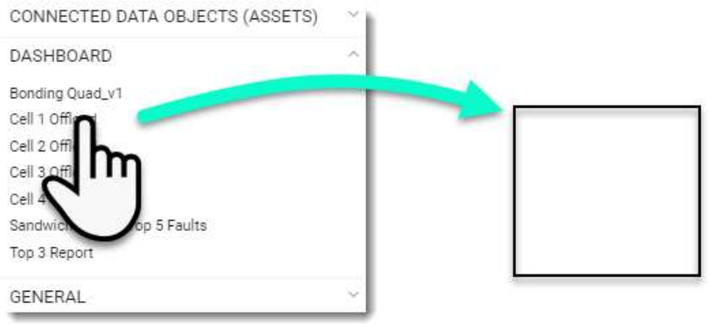
Last Model, Last Pallet, Part # (Number), and Buffer

This parameter can be placed at any asset object. Good practice would be to place this parameter at a problem area where bottlenecks and starved conditions. This could be a good way to tell if a certain model is causing problems such as blocks and starved situations.

An example would be that if an object was in a blocked condition, the user can view which model is in process, and monitor to see if future identical model is causing an issue.



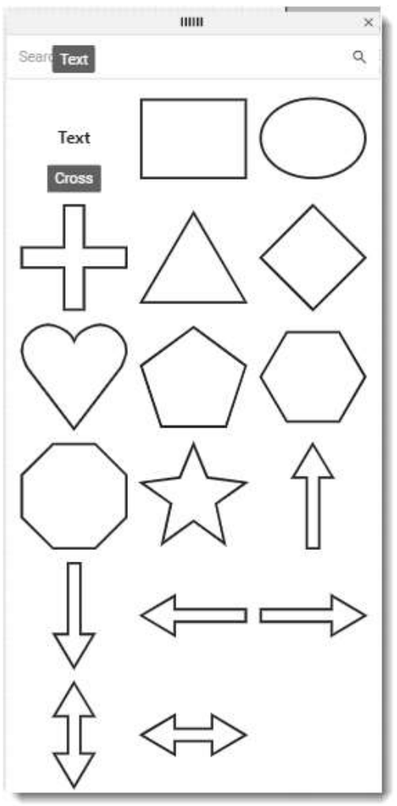
DASHBOARD



The dashboard tablet contains several dashboards that are designated by tag to appear in the live view layout. If a child is not populated, then there has not been any dashboards tag for this layout.

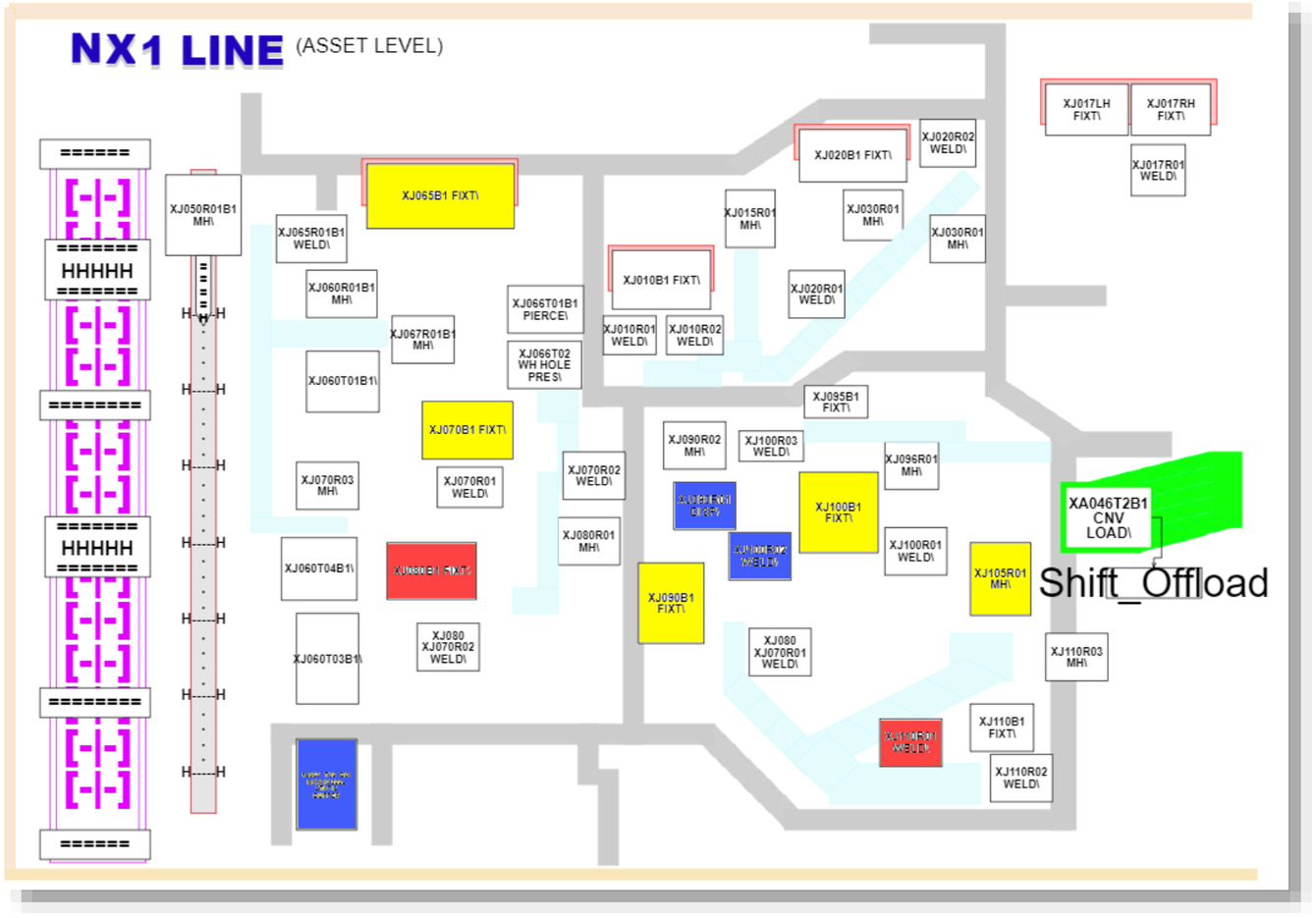
To install a dashboard on screen, simply select a Dashboard from the Collection, then click and hold, then drag it to the editing window. Once there, the user can size it to the scale you would like.

When constructing the dashboard, ensure that the fonts as well as the sizing or scaling are correct for a smaller version.



GENERAL

The generals tab consists of text, shapes, and various other visual symbols. They can be resized and used to make other visual features like a conveyor belt or walkway.

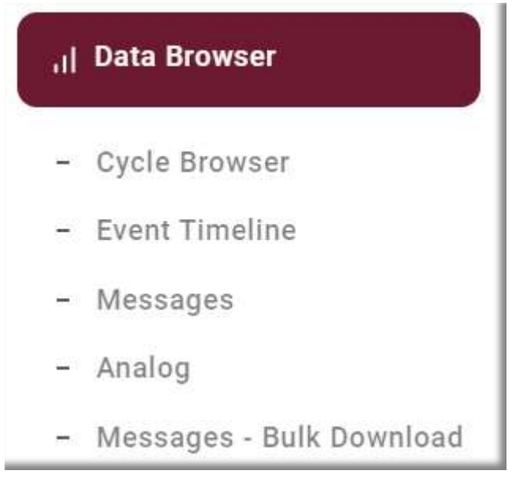


Data Browser

The data browser provides graphical data on your processes cycle status, including the machine heartbeat.

- Opening the Data Browser
- Cycle Browser
- History Display Views
- Messages
- Notes
- Cycle Compare Module
- Messages
- Messages-Bulk Download (if applicable)

Opening the Data Browser



Within the Data Browser section is the Cyclebrowser, Event Timeline, Analog (User data), and the Messages display.

To gain access, simply click the Data Browser icon and the contents will reveal below.

Cycle Browser

- Cycle Browser
- Opening Cycle Browser
- Cycle Browser Asset Statistics Display
- Selecting another cycle

The cycle browser provides graphical data on your processes cycle status, including the machine heartbeat. The Cycle Browser has two main displays, the Cycle View Upper display, and the History Display panel.

The Upper Display consist of a Sequence View, Message Pane, and an Analog View based upon your object selection. Some object may not have analog data present. When there is no analog data present, the analog data graph will be omitted from the display.

The sequence view will display regardless of the lack of analog data.

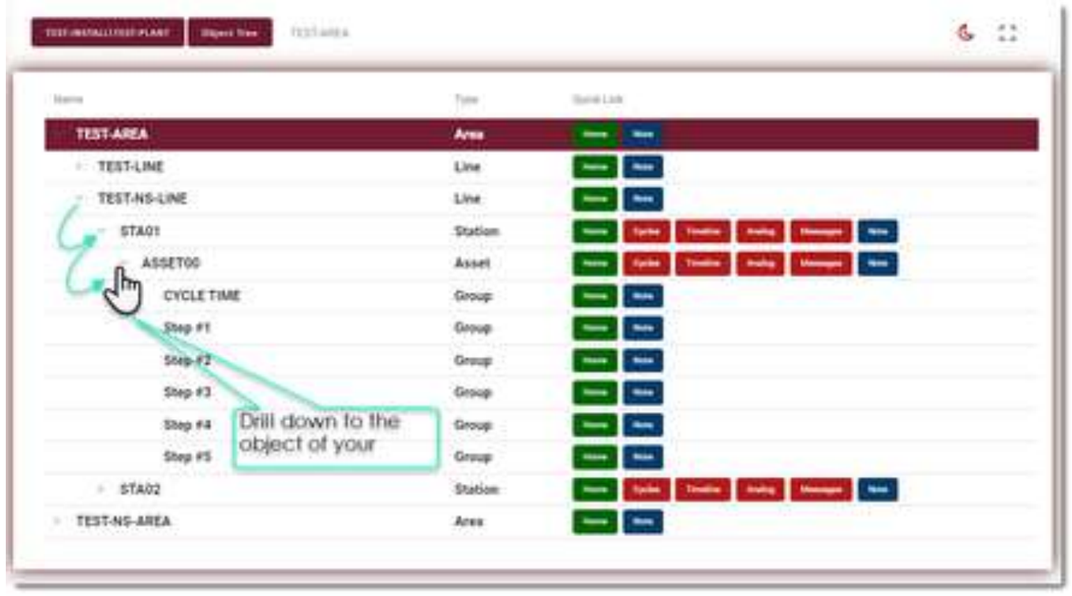
The lower graphing area is the History Display Panel. This will display the last 100 cycles, or an option to view Todays or Yesterday's data.

Opening Cycle Browser

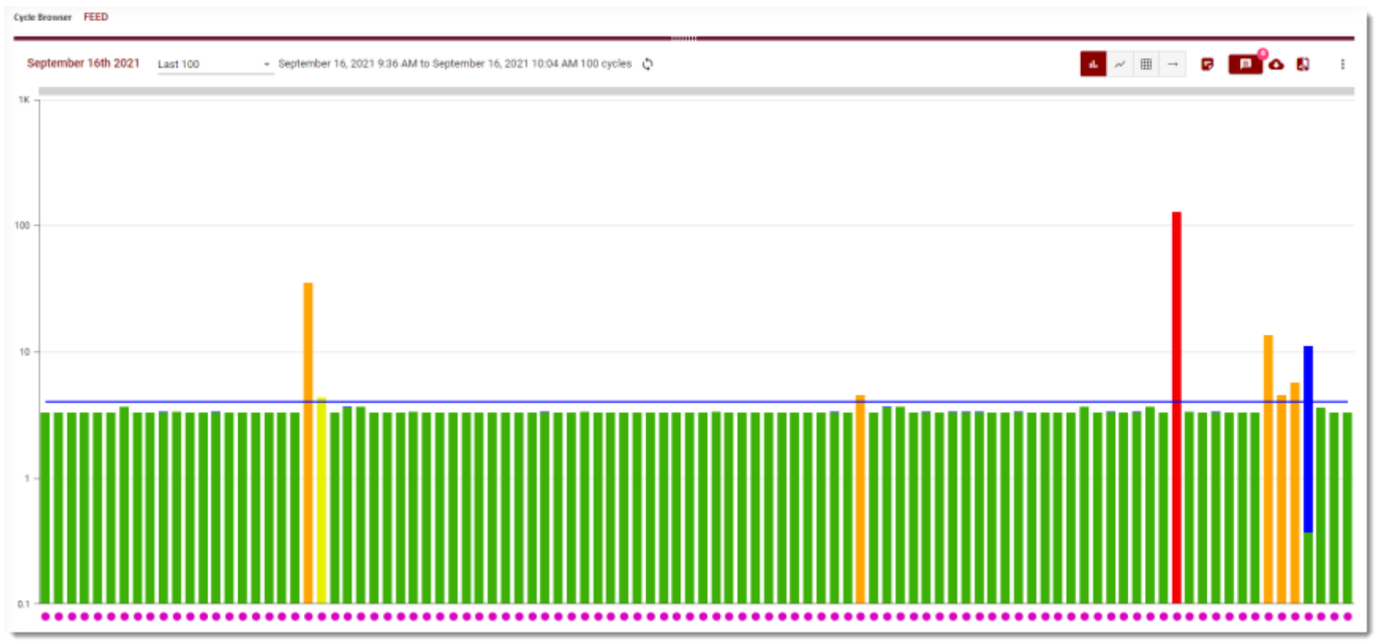
You can then access the cycle browser by using the Object Tree menu to navigate to your desired object. Click on the Object Tree button, and the Object Tree window will reveal.

Click on the drop-down icon beside the object. This will reveal the lower-level objects. Proceed until you reach the object desired. Click on the object and then you can proceed to the select the Cycle Browser. Another way you can go directly to the Cycle Browser is to use the Quick Links to the right of each object.

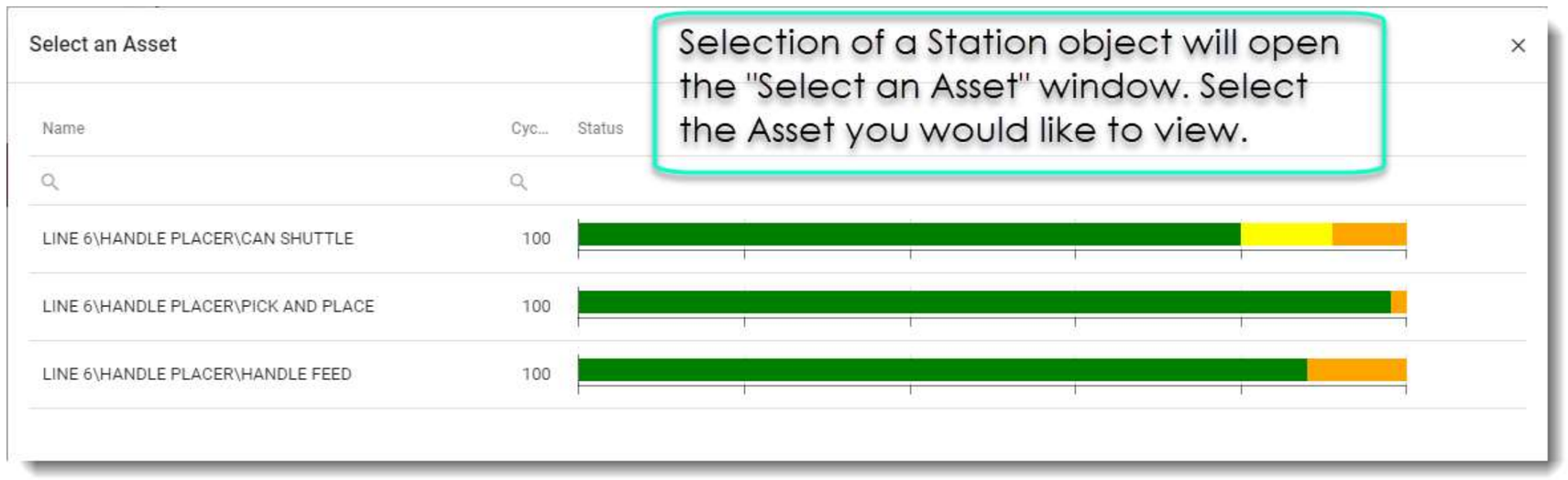
After selecting the desired object, the cycle browser will launch to this browser, if it was already open. If the cycle browser was not open, then go to the data browser icon in the left side Main Menu and open the cycle browser.



Based upon your selection another window will open. If you selected a single asset, then a history display panel will open displaying the last 100 cycles.

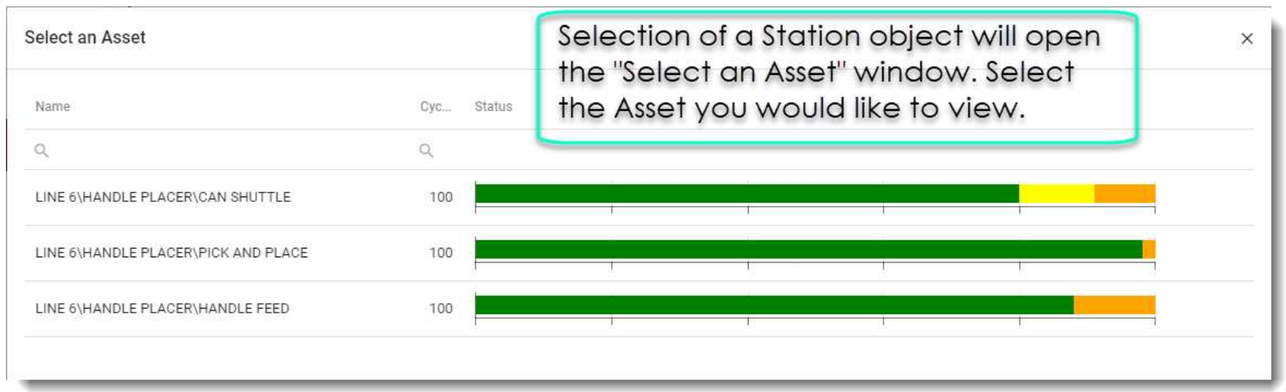


If you selected a Station object or higher-level object that has more than one asset, then an asset window will open containing all the assets within your selection.

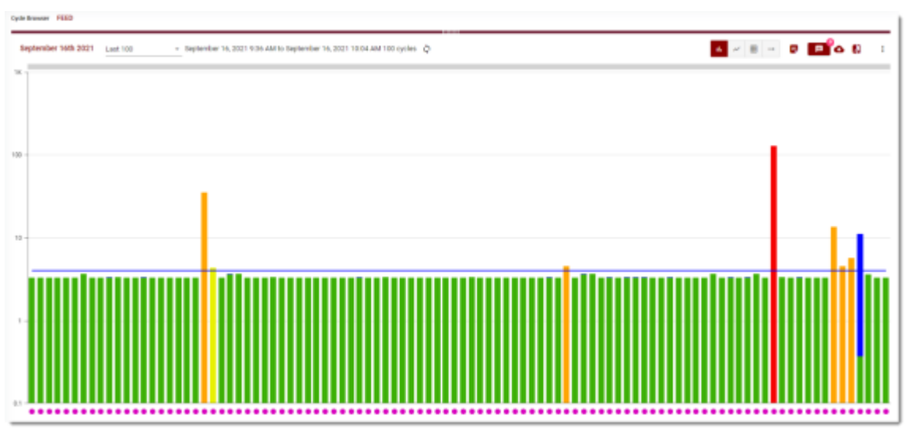


Cycle Browser Asset Statistics Display

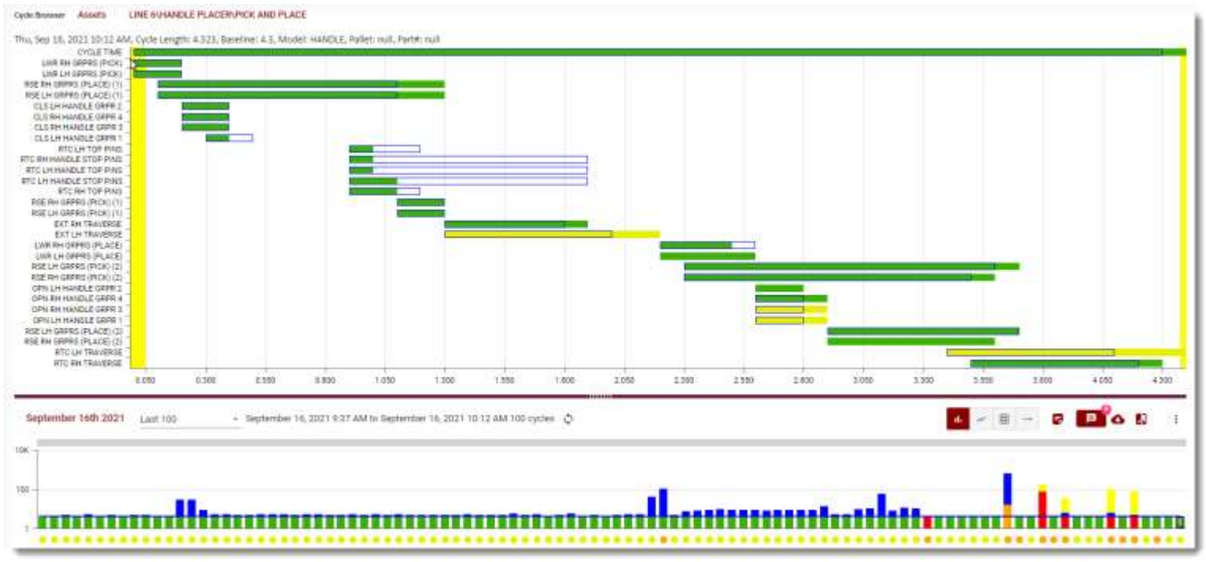
Upon initial selection of an object cycle browser will load the *Select an Asset* window within your station selection, stacked one atop of the other. In this example, all the 3 station assets are displayed.



Select from one of the assets. Once selected, it will open to the History Display for that Asset.



From there you will then have to select an asset to view, the same as selecting a single asset the history display panel will open. From here select a cycle to view. Once selected, the history display panel will reduce to the lower part of the cycle browser window, and the upper main display will display the cycle selected.



Selecting another cycle

To Select another cycle, go to the bottom of the cycle browser, in the History Display Panel. From here you can select a cycle to view in the Upper Graphical area of the cycle browser. While browsing over the History Display Panel, you can hover over a cycle to view the details of that cycle.

Select a cycle by clicking on a cycle on the History Display Panel. After you click on it, a highlight will appear around the selected cycle, and the upper window will update with the selected cycle.

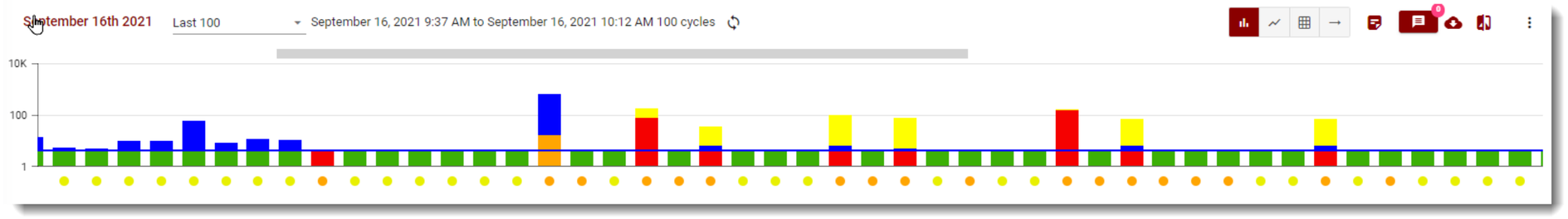
History Display Views

- History Display Views
- Column
- Model
- Grid
- Sequence
- Day/Hour Option
- Object Properties
- History Display Option Buttons
- Messages
- Notes
- Download Cycles
- Showing Messages and Analog in Cycle View

Located on the lower right of the cycle browser, are 4 buttons to change the views to on how to display the History Display Panel. The history display panel defaults to the column view. The other views available are the model view, grid view, and sequence view.

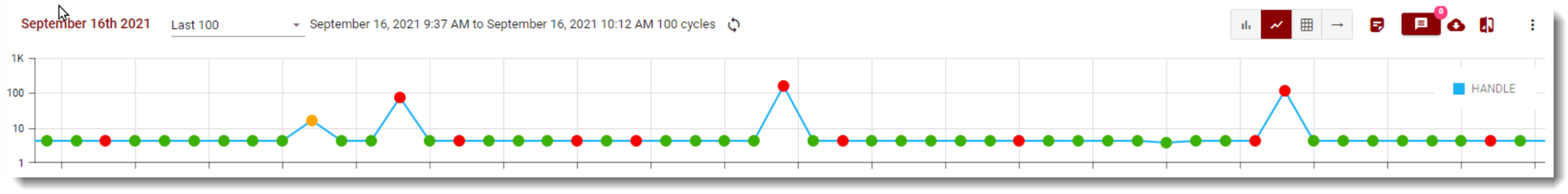
Column

The column view displays a bar graph is color coded. Each bar shows the approximate cycle length. Below the bar is a status dot. the dot will display the occurrence oven on good cycle motion. If there was an hovercycle or a warning within the cycle, then it will appear below the cycle bar. A green bar with an orange dot shows that there was a warning over cycle within that good cycle.



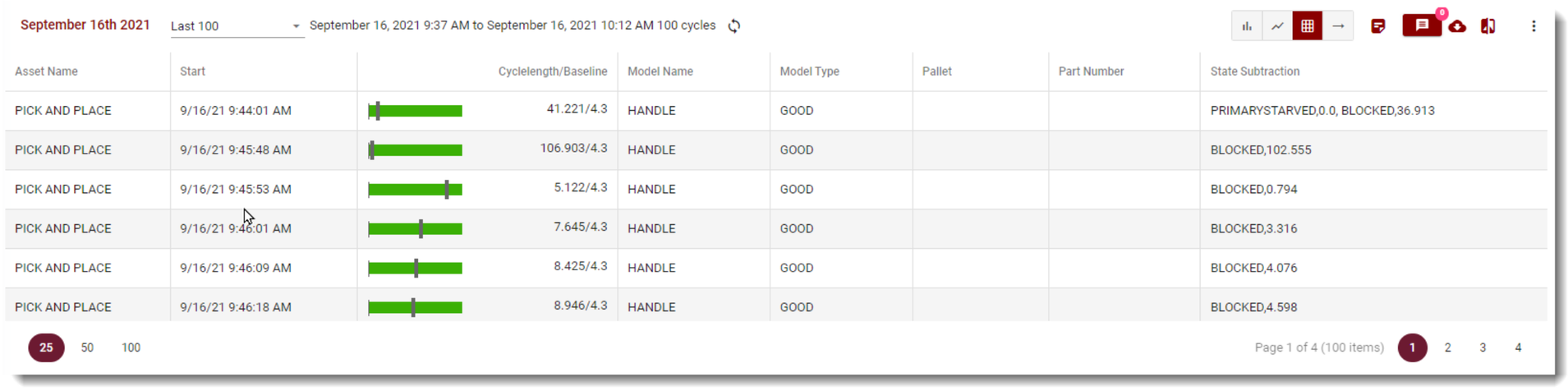
Model

The model view will display all the models of the cycle in a dotted line graph. The different models will be displayed to the far right. The user can click and toggle on and off and he modeled he would like to view.



Grid

The grid view displays the data in a table view.

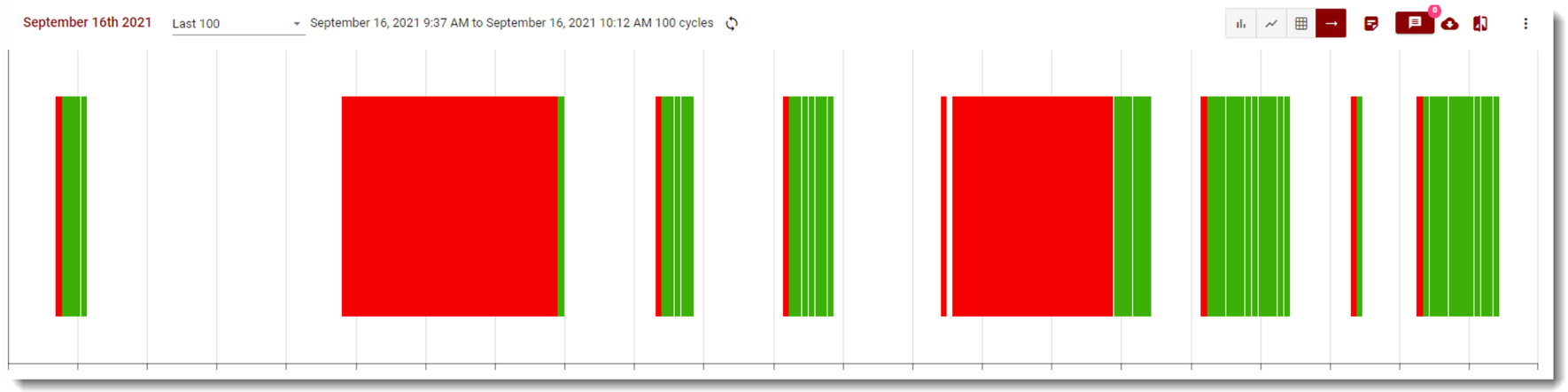


Asset Name	Start	Cyclelength/Baseline	Model Name	Model Type	Pallet	Part Number	State Subtraction
PICK AND PLACE	9/16/21 9:44:01 AM	41.221/4.3	HANDLE	GOOD			PRIMARYSTARVED,0.0, BLOCKED,36.913
PICK AND PLACE	9/16/21 9:45:48 AM	106.903/4.3	HANDLE	GOOD			BLOCKED,102.555
PICK AND PLACE	9/16/21 9:45:53 AM	5.122/4.3	HANDLE	GOOD			BLOCKED,0.794
PICK AND PLACE	9/16/21 9:46:01 AM	7.645/4.3	HANDLE	GOOD			BLOCKED,3.316
PICK AND PLACE	9/16/21 9:46:09 AM	8.425/4.3	HANDLE	GOOD			BLOCKED,4.076
PICK AND PLACE	9/16/21 9:46:18 AM	8.946/4.3	HANDLE	GOOD			BLOCKED,4.598

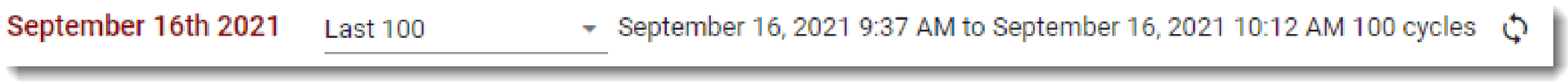
25 50 100 Page 1 of 4 (100 items) 1 2 3 4

Sequence

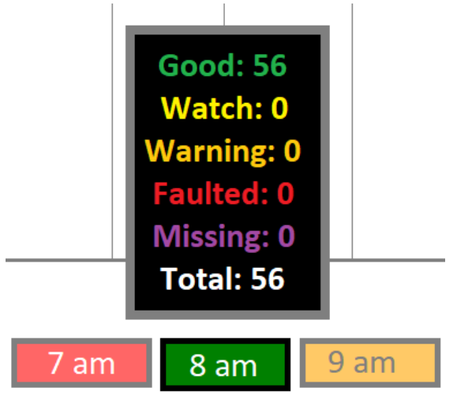
The sequence view displays bars across a title line. this gives a view of the last 100 cycles with the downtime between cycles. (The white area between cycles).



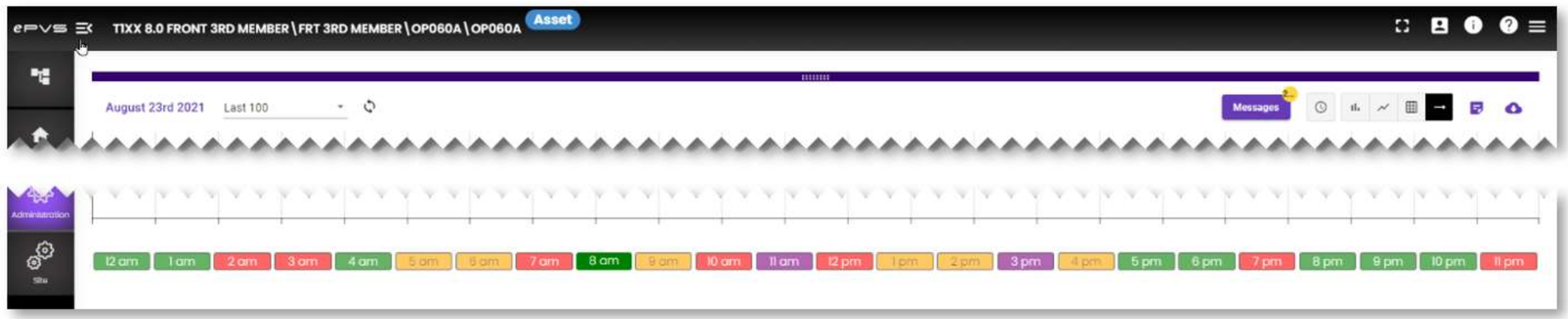
Day/Hour Option



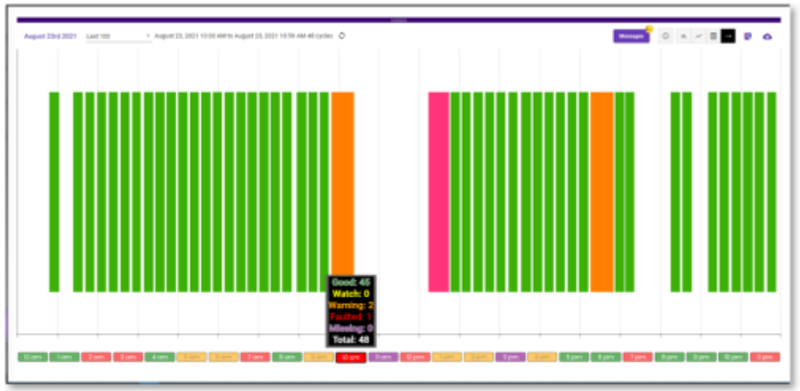
On the far left just above the history display panel, is the current date. This is an actual link to select a different date just click on it. This will open a select date window of the last 20+ days. It will show the date, how many cycles are on that day, and the actual status for that day. This status will be displaying how many good, over cycle, missing, and faulted statuses.



Selecting one of the days in this window will open a day hour range window. This is a history displayed with all 24 hours displayed on the bottom. For that day the highlighted hours will contain ran cycles for that day.



The user can hover over any of these hours to view the detailed information on how many good, watch, warning, faulted, and missing cycles for that hour. It also displays the total cycles for that hour. Selecting an hour will open the history display panel that allow you to select and view a specific cycle.

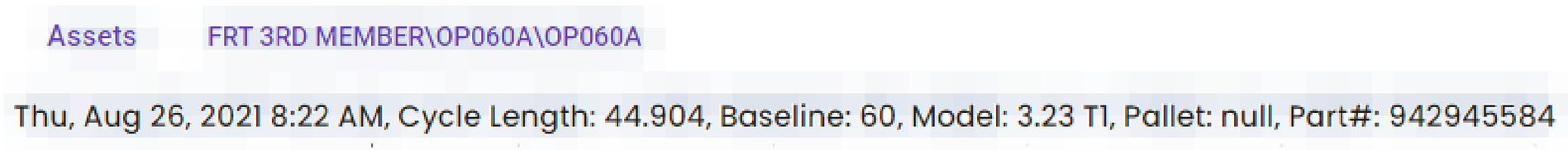


This view would be the same as a normal cycle view, however the hour selection menu will remain on the bottom below the history display panel. From there you can browse any hour for that day.

Next to the date selection is a dropdown menu that will allow you to select from the last 100 cycles, yesterday, or today. Selected last 100 cycles will simply display the last 100 cycles. Selecting yesterday or today it will open a display panel containing an Hour Selection tab below the History Display Panel. This feature works similarly to the date selection option.

Object Properties

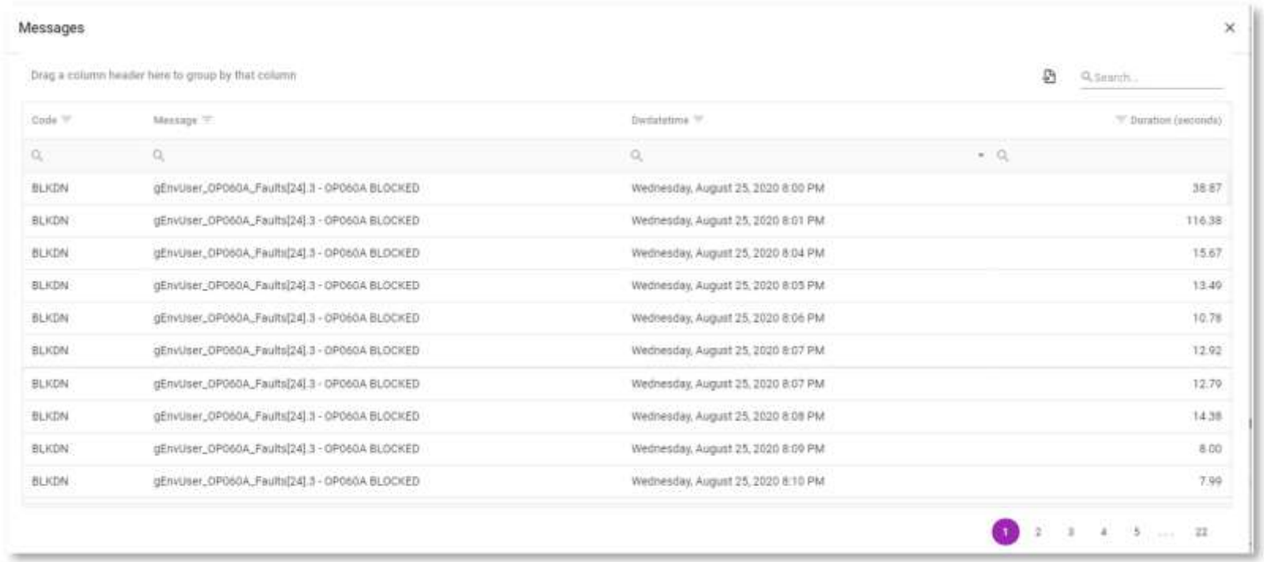
The Object Properties are in the top left of the cycle browser. Model, AGV, Part, Cycle Length, Baseline, and time data can all be located here.



History Display Option Buttons

Messages

In the Cycle View browser, there is the Message module. Selecting this will open a window to view the current messages based upon the cycles in the History Display Panel.



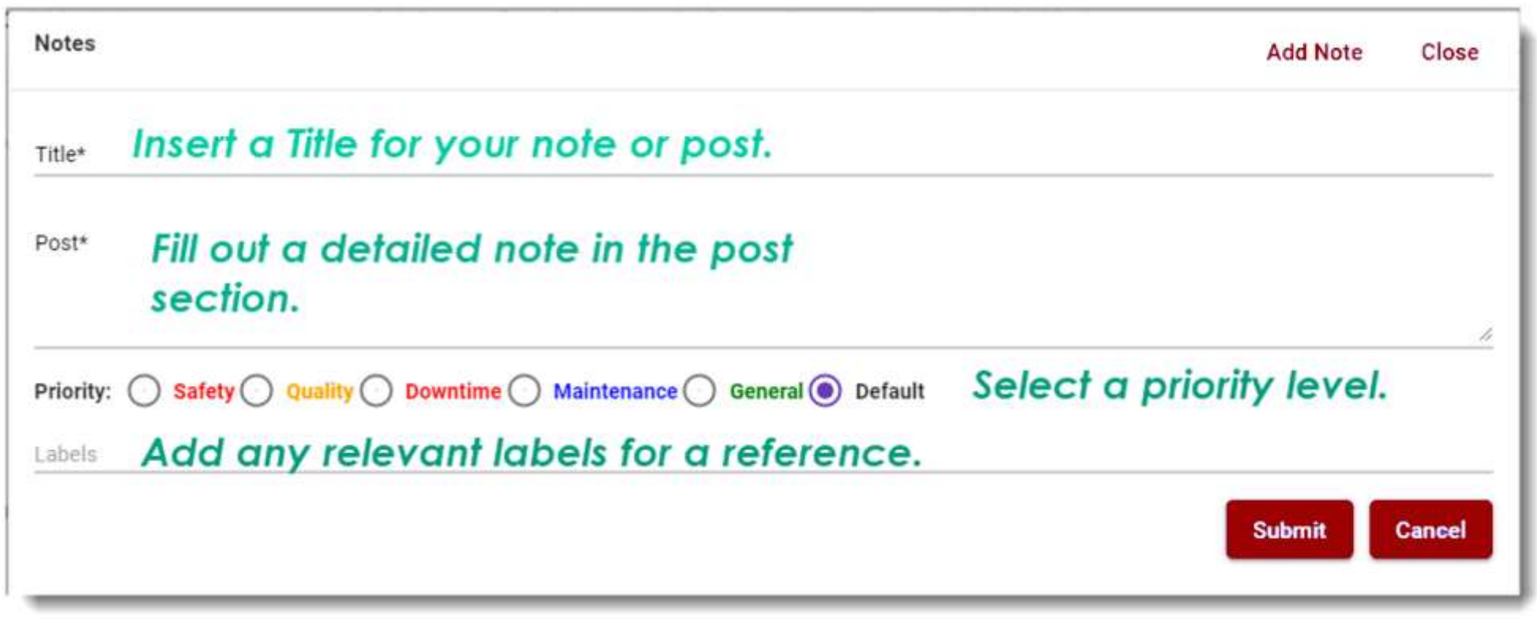
Notes

The notes button will open a window that contains all the posts made in this object. It has the options to view notes made for this object or for all cycle notes.

To add a note simply goes up to the upper right-hand side and click the add note link. This will open a post feature. From there enter a title of the post, then fill out a detailed note in the post section.

Then select the priority level, otherwise it will be set at default. Then add any labels you would like to appear with this note.

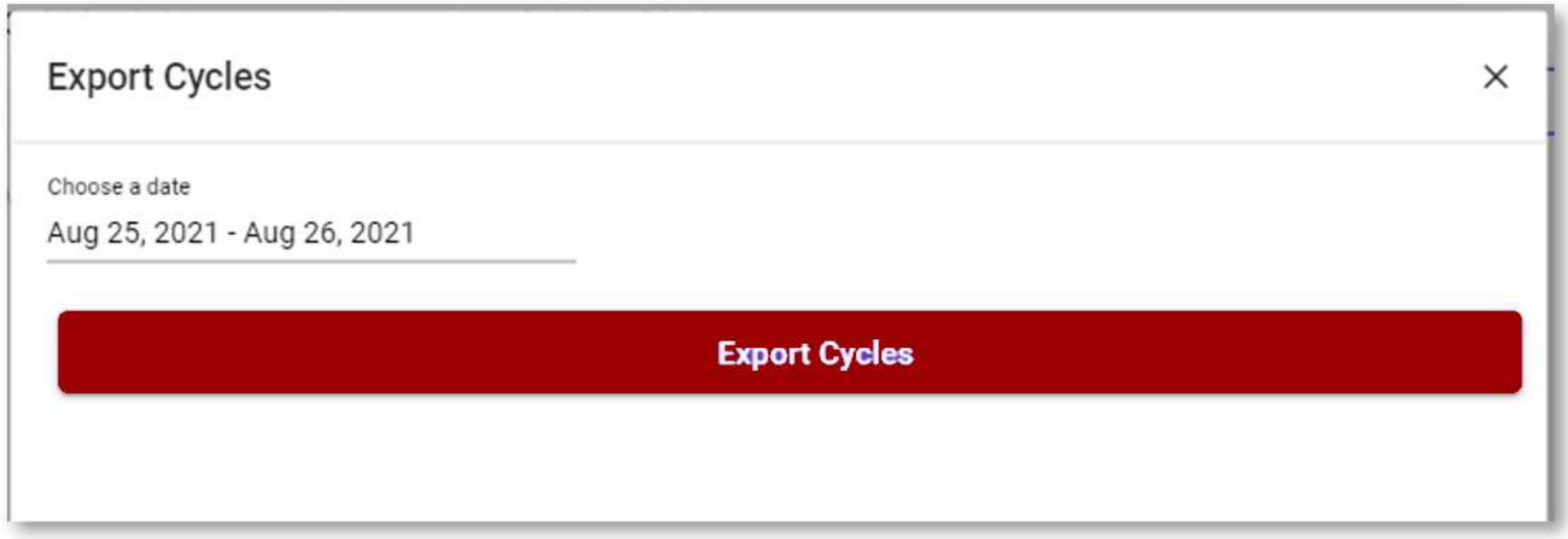
Click submit, and this post will be saved to this object.



Download Cycles

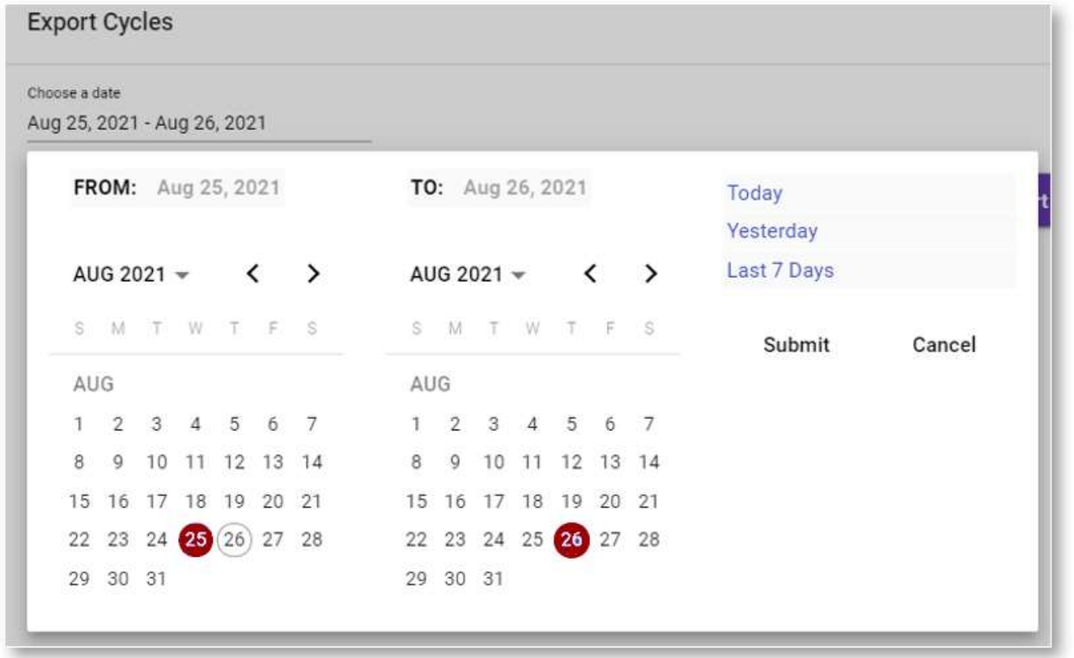
The user has the option to download all cycles to an excel format, by clicking the download icon on the far right.

Next the Export Cycles window will open.



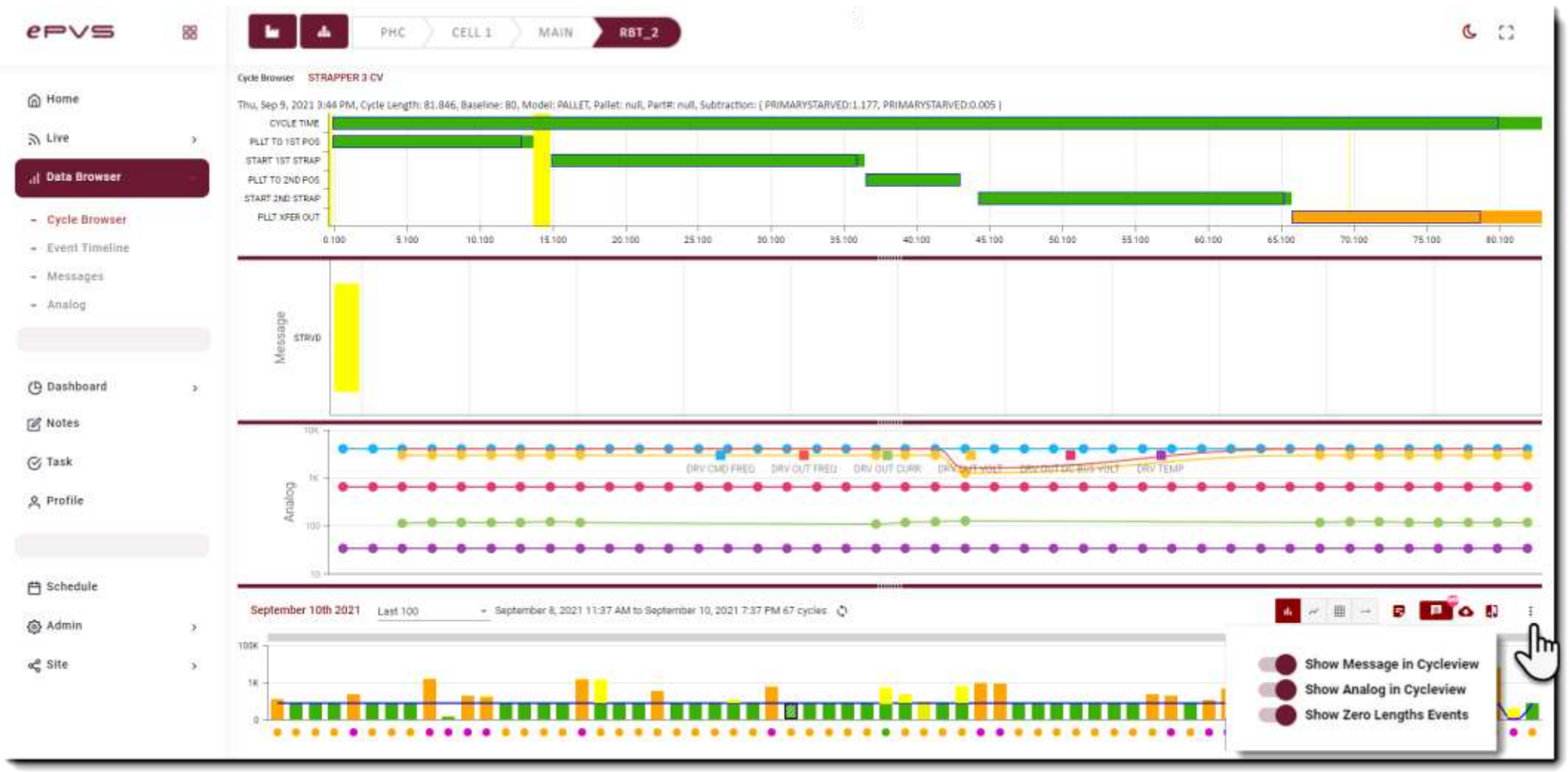
From here you can select the dates you would like to view by clicking on the date range calendar or clicking on the default dates. This will open the date range calendar. Select the start date from the calendar on the left and then the end date on the calendar on the right. You could also choose from today, yesterday, or the last seven days. Once your selection is complete select the submit button.

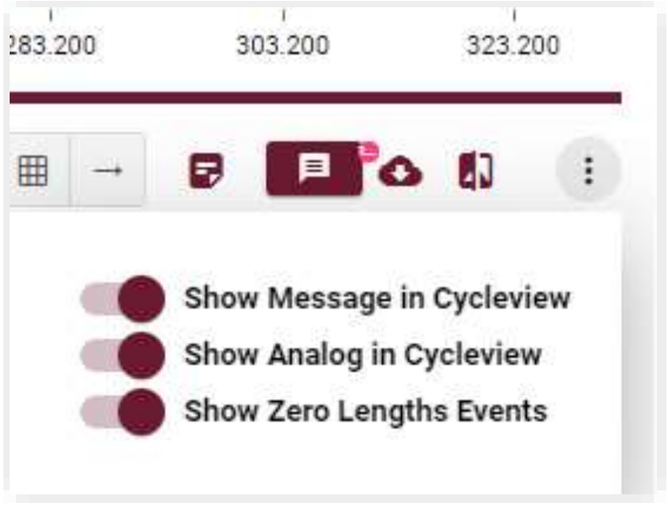
Then click the export cycles bar. The cycles will download, and you will get a notification in the lower left-hand side that it is downloaded to your Download folder.



Showing Messages, Analog in Cycle View, and Zero Lengths Events

The user can choose to hide or display the **Message**, **Analog data**, and **Zero Lengths Events** from displaying in the Cycle Browser. Simply click on the **3-dot menu icon**, then switch either **On** or **Off**.





Zero Length Cycles

The use can toggle On or Off the Zero Length Cycles displayed in the Cycle Browsers. Because of the use of Switches, State Changes, or any that will display a zero-length cycle motion, can be omitted from displaying by toggling off the Show Zero Lengths Events toggle. Turning off this feature will reload the Main graph and display the data without the Zero Length cycles.

When is feature is set, it will not only take effect in the Cycle Browser, but it'll take effect in any browser that displays the data, or a Sequence event, such as the Summary View, quick cycles, and other cycle displays.

Cycle Compare Module

The **Cycle View Evaluation Module** will allow users to view multiple cycles at the Asset and Group object level in the cycle view browser.

- Cycle Compare Module
- Quick Guide
- Open Cycle View
- Selecting Cycles to Compare
- Open Cycle Compare Window
- Configure Cycle Collection
- Adding Cycles
- Cycle Compare View Options
- Auto Compare
- Data Browser Messaging Features
- Messages
- Messages-Bulk Download (if applicable)

It can be utilized with any cycle, regardless of its status (watch, warning, etc.). The three main parts used for this module is the Cycle View Browser, Cycle Compare (Collection) Window, and the Cycle Compare Browser.

Cycle Compare Module

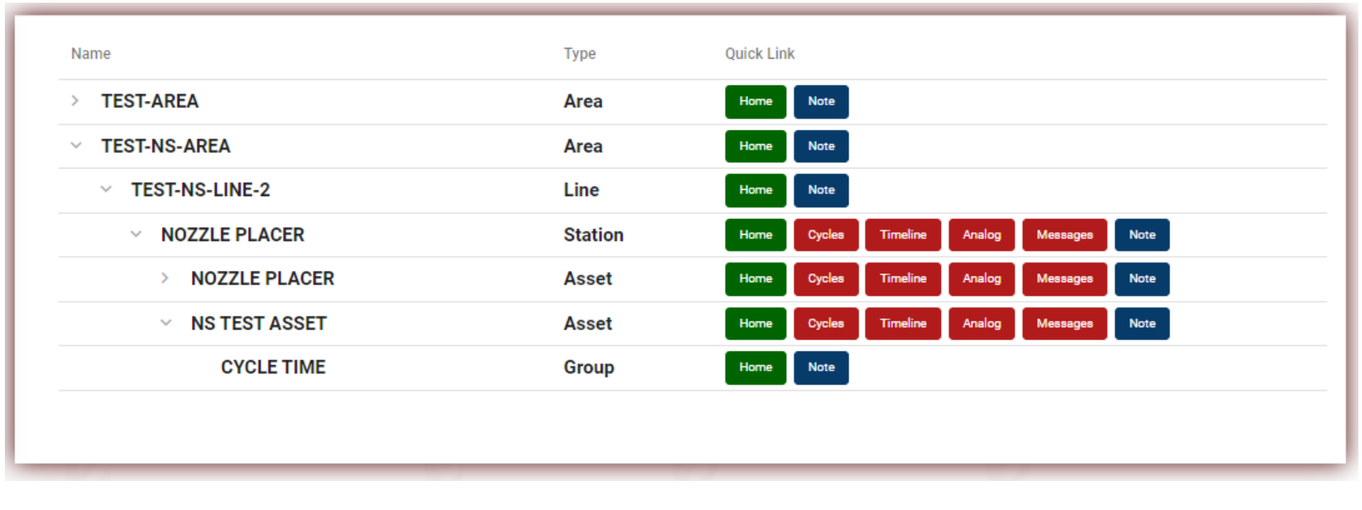
Quick Walkthrough

- Step 1. Open Cycle Browser.
- Step 2. Select a cycle to compare.
- Step 3. Open the Cycle Compare Collection window. Name the collection, by using edit window. Create a new cycle collection.
- Step 4. Click on the Collection folder, then add the cycle.
- Step 5. Go back to the cycle view and select a different cycle, then click the Cycle Compare button again.
- Step 6. Click on the previous cycle saved, then click Add Current Cycle to Collection button.
- Step 7. Repeat steps 5 and 6 until all your selection are made.
- Step 8. Click the Run Compare button to view.

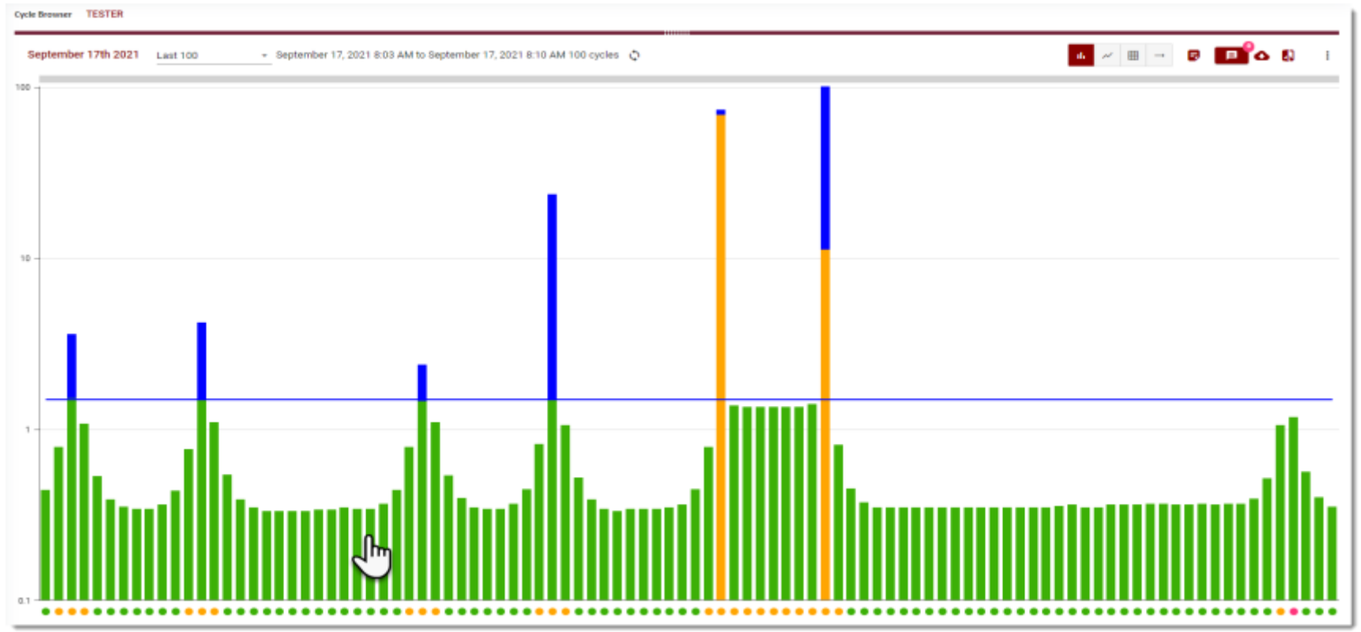
Open Cycle View

First, navigate to get to the Cycle View Browsers, so that the History Display Panel can be accessed.

After opening the ePVS browser, click on the Object Tree icon to open the Main Tree. Navigate the Main Tree to drill down to the Asset or Group level. This module is active at the Asset levels and below.



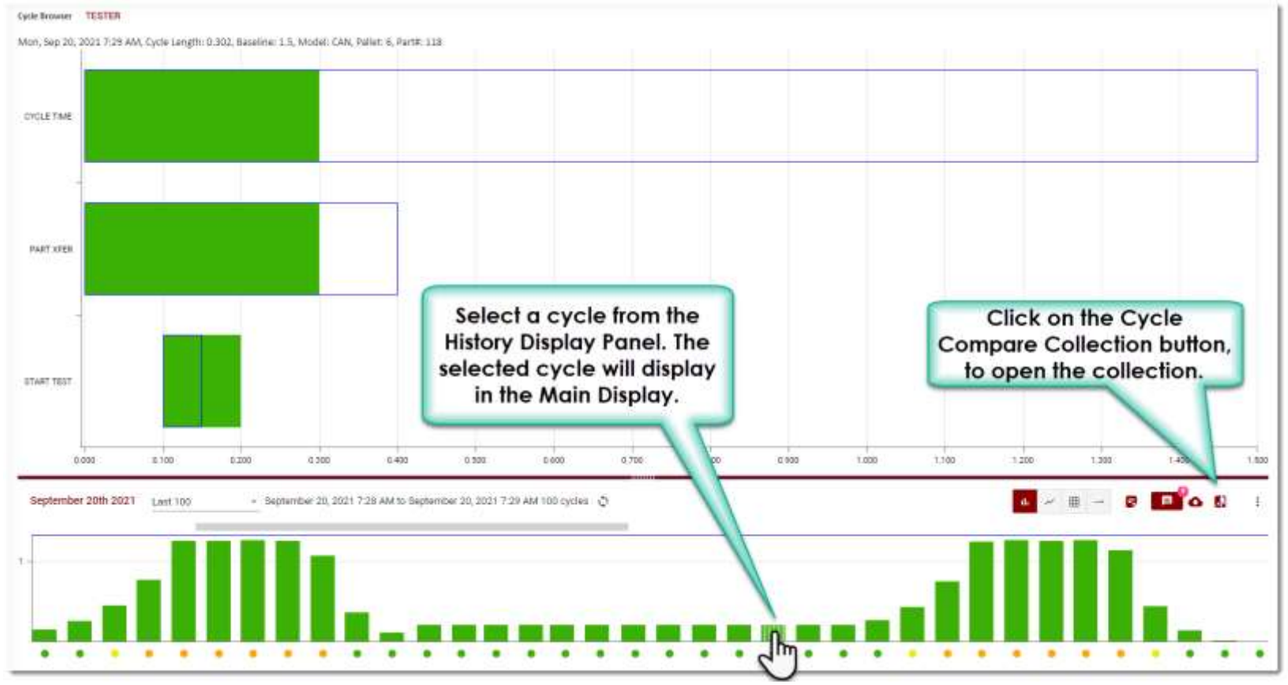
The Cycle View window will update with the last 100 cycles. Select a cycle from the History Display Panel.



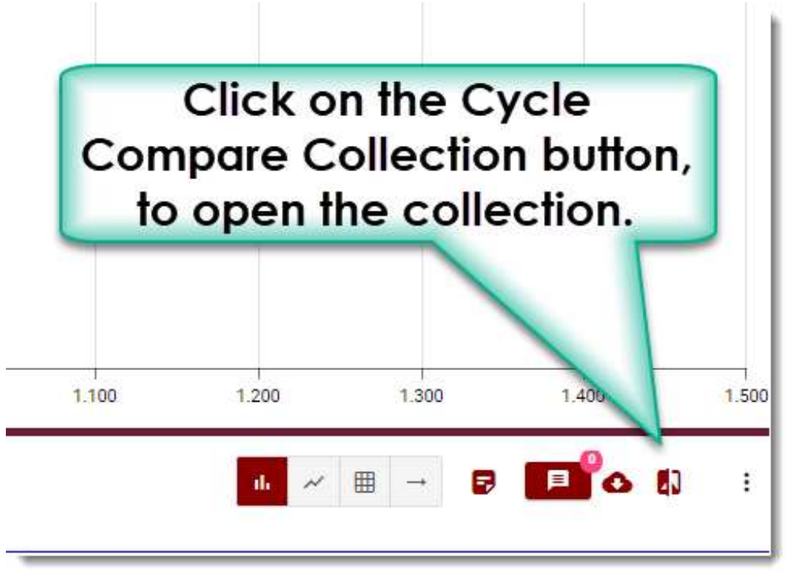
Selecting Cycles to Compare

Once the ***ePVS*** browser is open, select the Cycle view tab from the top menu tab and a new ***Cycle View*** window will reveal with the last 100 cycles in the ***History Display Pane****l* (in the lower browser window).

Select a cycle from the ***History Display Panel.*** Once a cycle is selected, it will be highlighted, showing that it is selected.



Open Cycle Compare Window

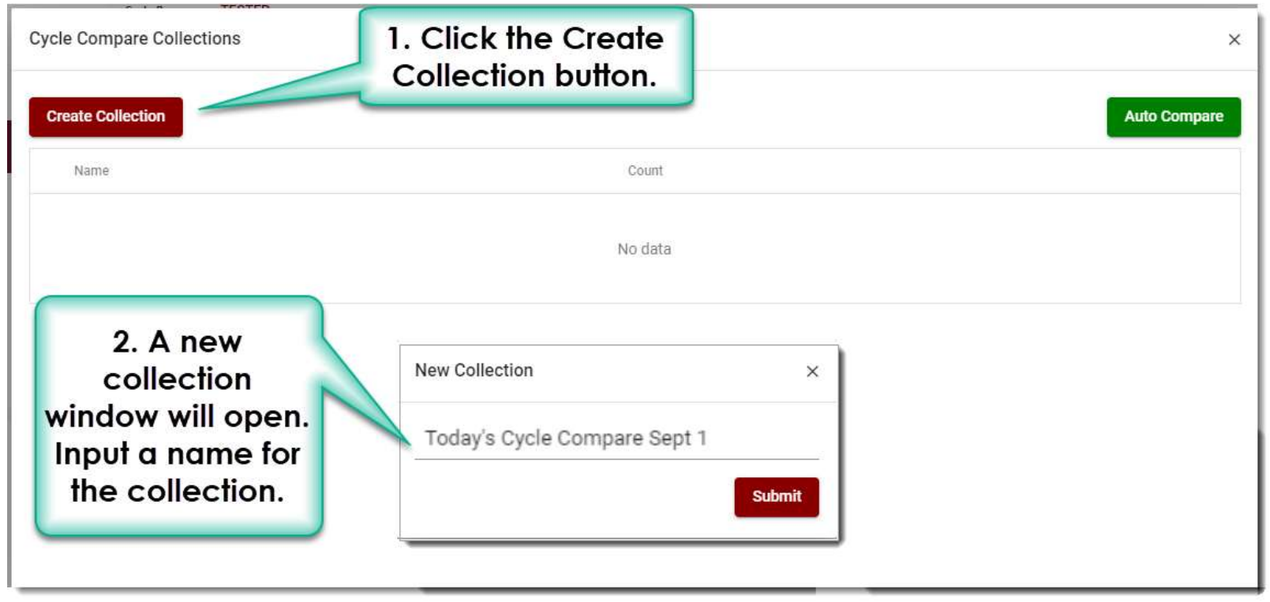


When the cycle is clicked on, the upper display window will show the cycle selected. In the right-hand side above that History Display Panel will be the ***Cycle*** Compare button.

Configure Cycle Collection

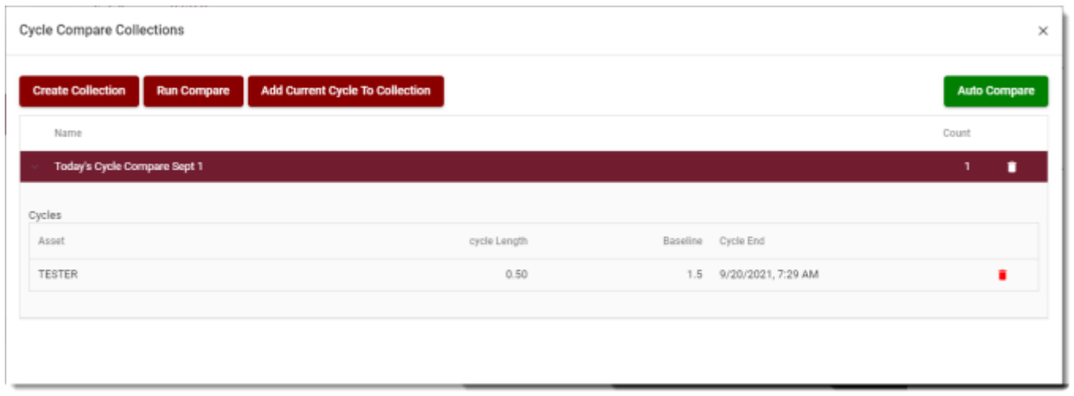
When the ***Cycle Compare Collection*** window opens, click the ***Create Collection*** button, and input a *Name* for the cycle's folder, then select the ***Submit*** button.

This will update the window with a new folder (***Today's Cycle Compare Sept 1***) and the first selected cycle.



Click on the **Name** of the Collection to proceed.

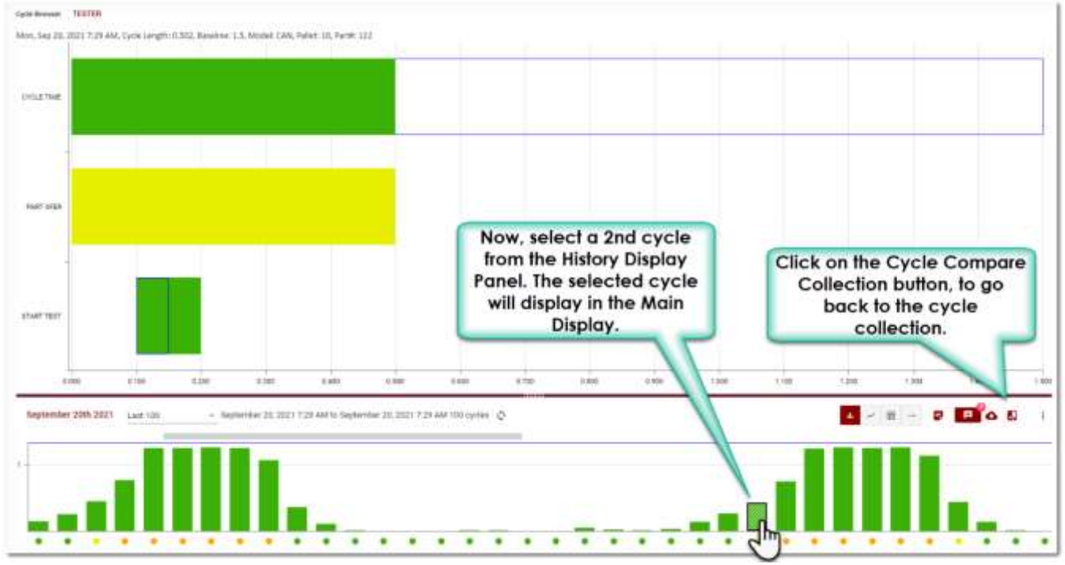
This will open more options to proceed. Click on the Add Current Cycle to Collection, and this will add the current select cycle to the collection.

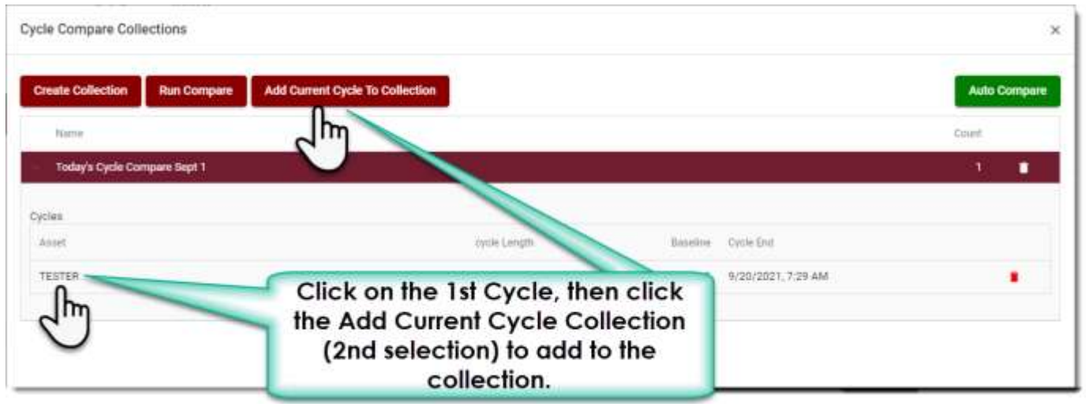


Adding Cycles

To add more cycles, you will have to select another cycle from the History Display Panel. Close the Cycle Compare Collection by clicking on the X in the upper right-hand side of the window.

Select another cycle, review in the upper display, then click the Cycle Compare Collection button.



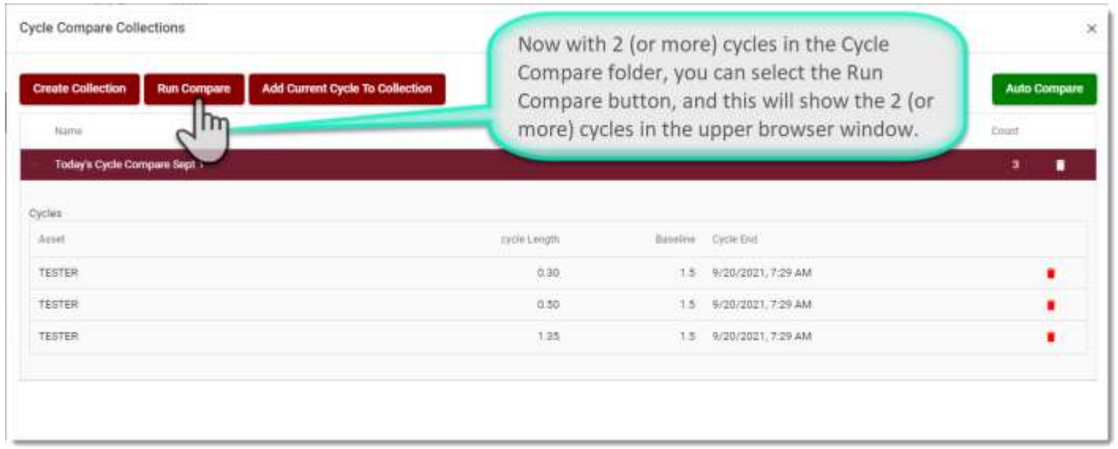


The Cycle Compare Collection window will open. Click on the first cycle that was selected, then select **the Add Current Cycle to Collection** button. This will add it to your selection.

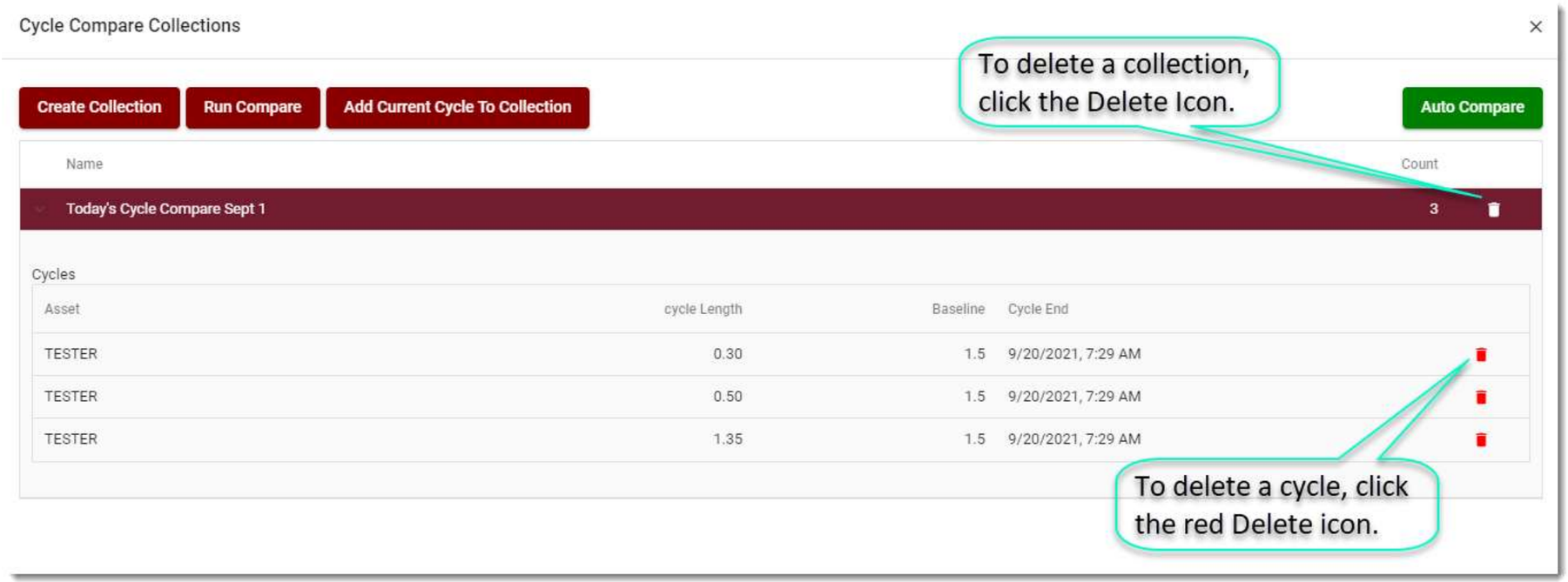
NOTE: Ensure that you select the *correct* Collection you want to compare with. If many Collection folders are already present in the Cycle Compare window, it is possible to add to a different collection, so selecting the wrong cycle will pair your selection to that cycle instead of the intended one.

Now with 2 (or more) cycles in the Cycle Compare folder ***(Today's Cycle Compare Sept 1)*** you can select the ***Run Compare*** button, and this will show the 2 (or more) cycles in the upper browser window.

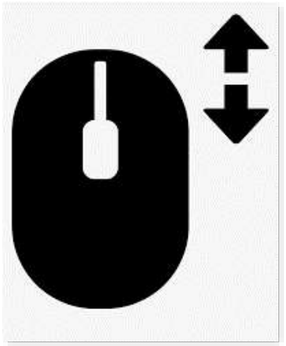
NOTE: To Remove or Delete a cycle, or a Collection, simply click on the Delete icon to right of the cycle.



The cycles will be displayed on top of the other. Hovering over a bar will reveal the details of the cycle. On the top of the display, will be the cycle information of the cycles selected and stored in the Cycle Compare Collection.



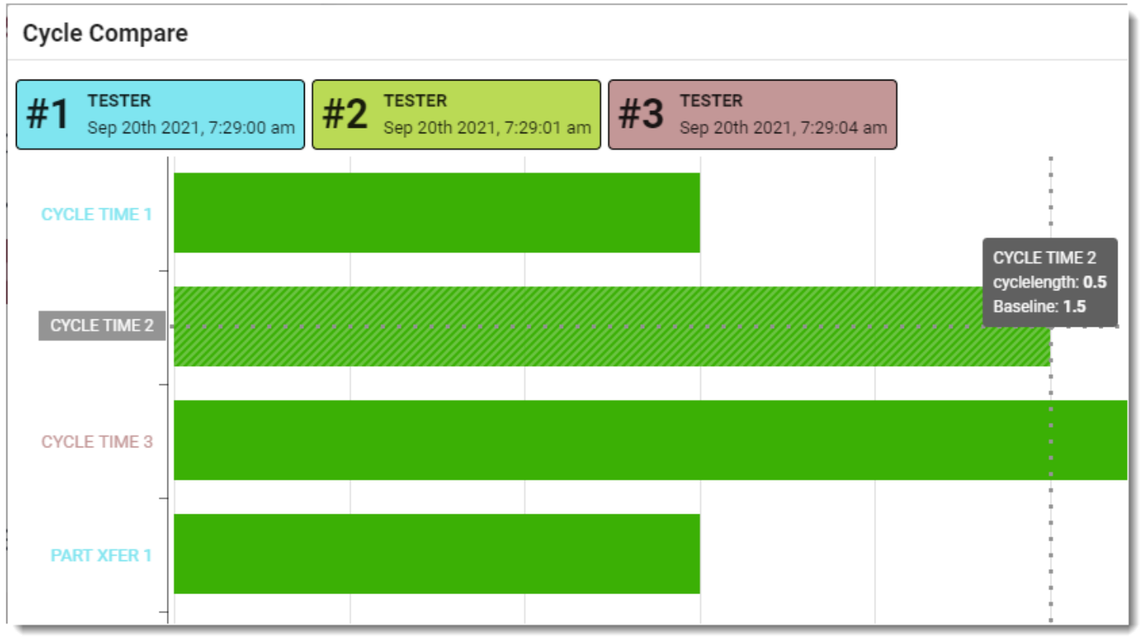
Zoom Feature



While viewing the cycles in this cycle compare window, you can zoom in to a collection by click and holding, then drag the zoom selection area over your intended cycles or using the mouse scroll feature.

The selected area will be highlighted, then Update to a zoomed in view on your selection.

The zoomed area is now reopened to the selected area. To the Reset Zoom, use the scroll roller to reset.



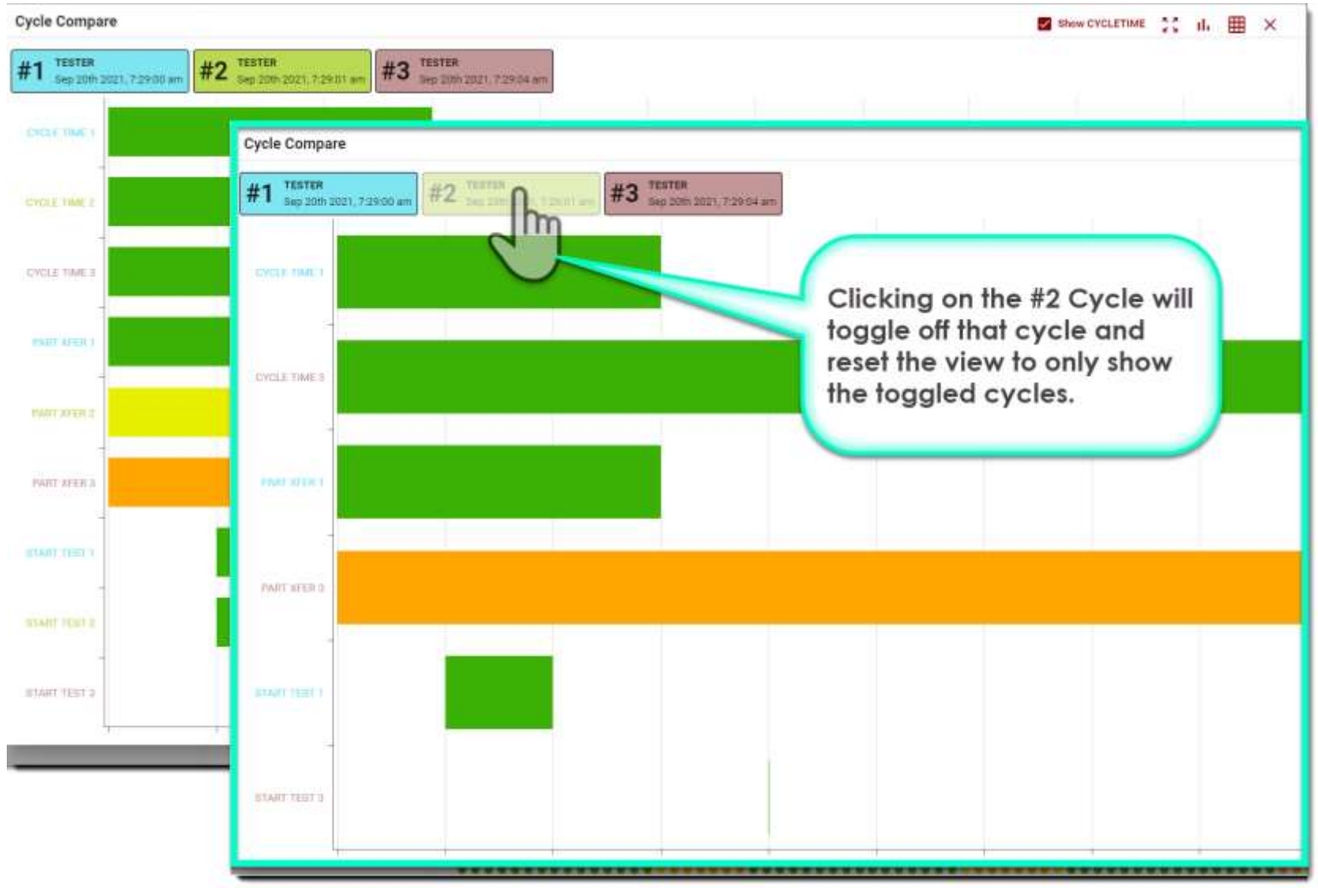
Cycle Toggle Feature

When viewing the Cycle Compare Browser with multiple cycles, it is possible to remove the cycle data from the present Compare window. With two or more cycles displayed, you can click on the Cycle Information Tiles on the top of the window.

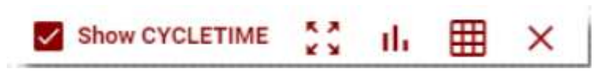
Click on any one or more of the Cycle Information tiles to remove from the Cycle Compare browser area. Click on it again to add it back to the browser.

Clicking on the Cycle Information tile will toggle to deselect or select a cycle.

Note: This is only for the cycles that were selected and saved to the collection. You can add additional cycles if needed.



Cycle Compare View Options



Show Cycle Time

The user can remove the Cycle Time parameter by unchecking the checkbox.

Full Screen

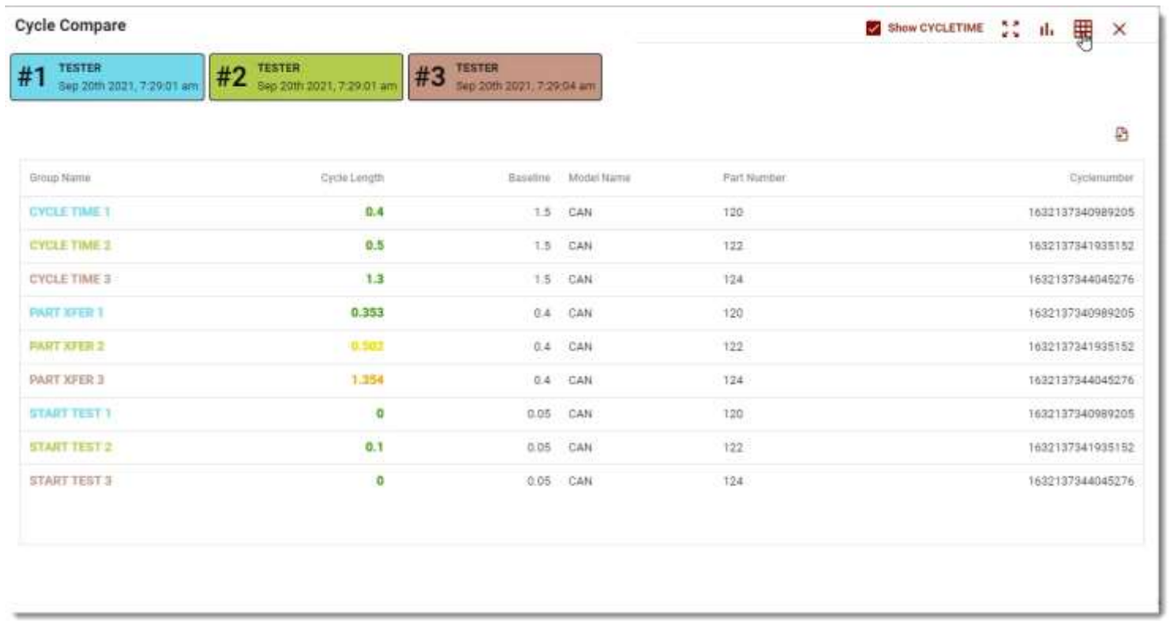
Click to view the browser in full screen mode, like the F11 hot key.

Bar View

Bar View is the default view for the Cycle Compare Module. Use this button to go from the Chart View.

Chart View

The Chart View will allow you to view this graphical display as a Table Chart.



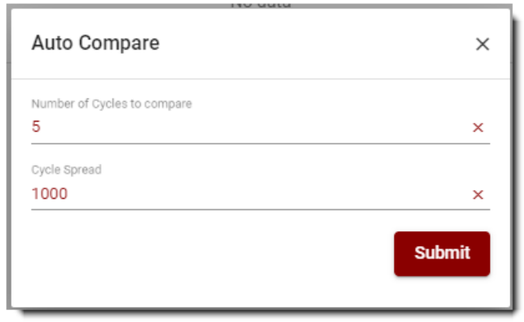
Auto Compare

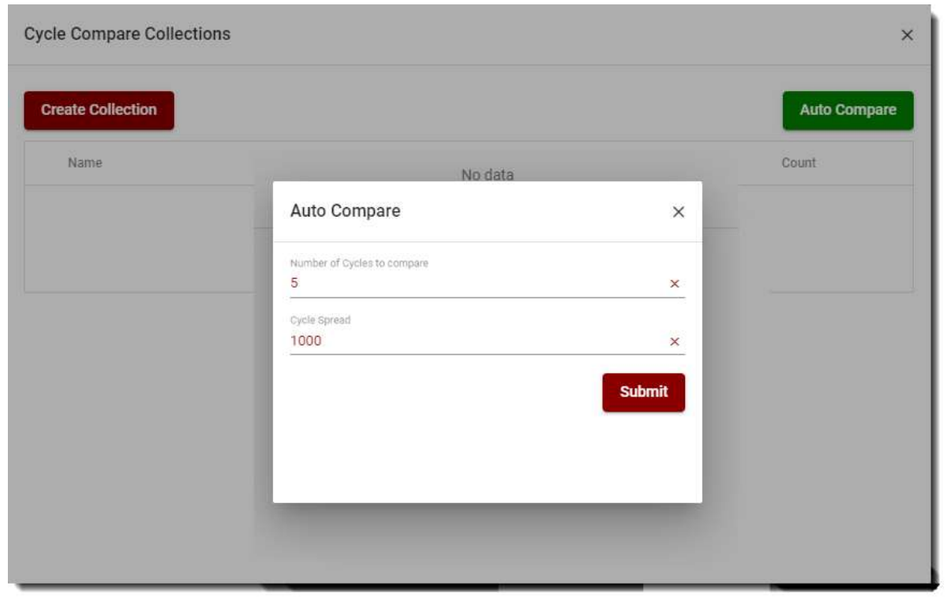
Auto Compare

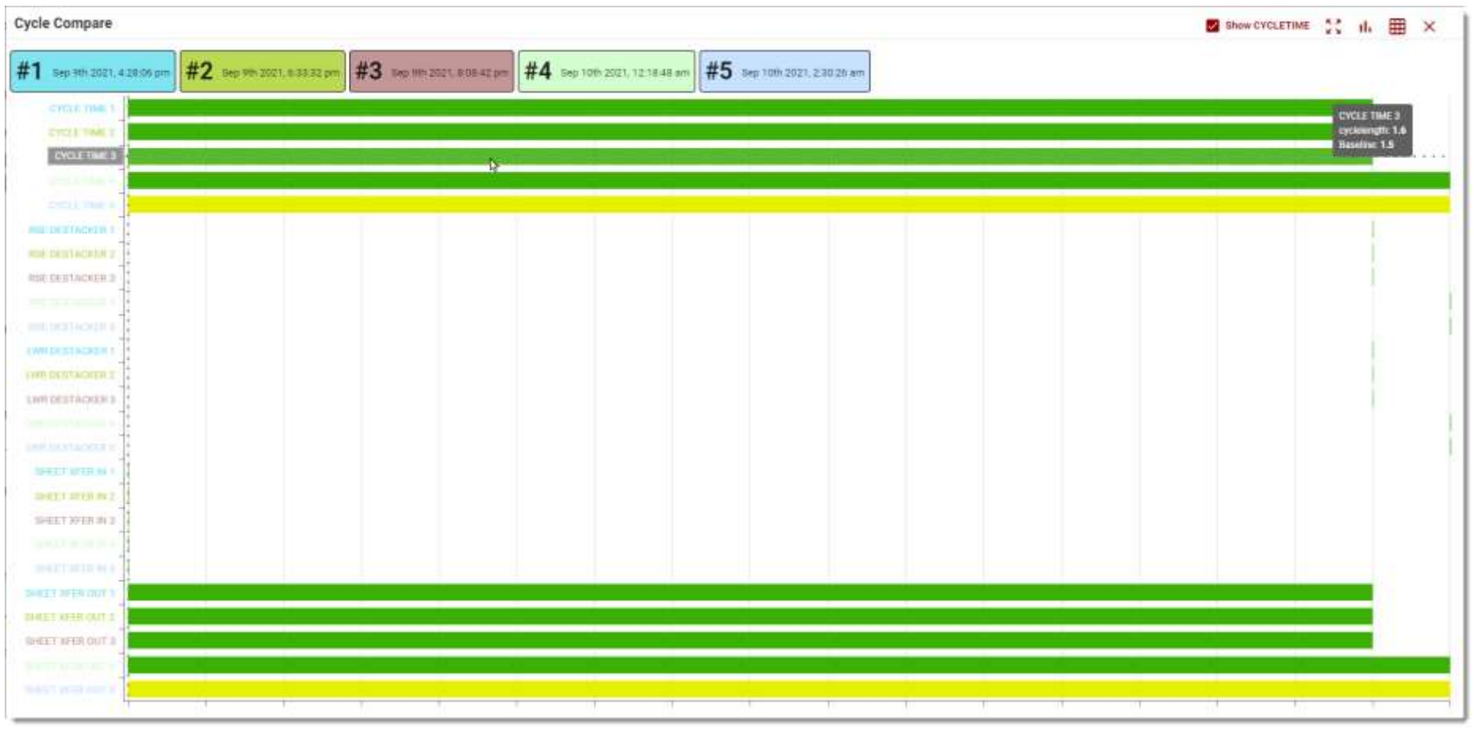
Auto Compare will allow the user to setup an auto comparison based on how many cycles you would like to compare, based upon a selected number of cycles.

Simply click on the Auto Compare button, then the Auto Compare setup window will reveal:

1. Set the number of Cycles to compare.
2. Select the cycle spread you would like to choose from.





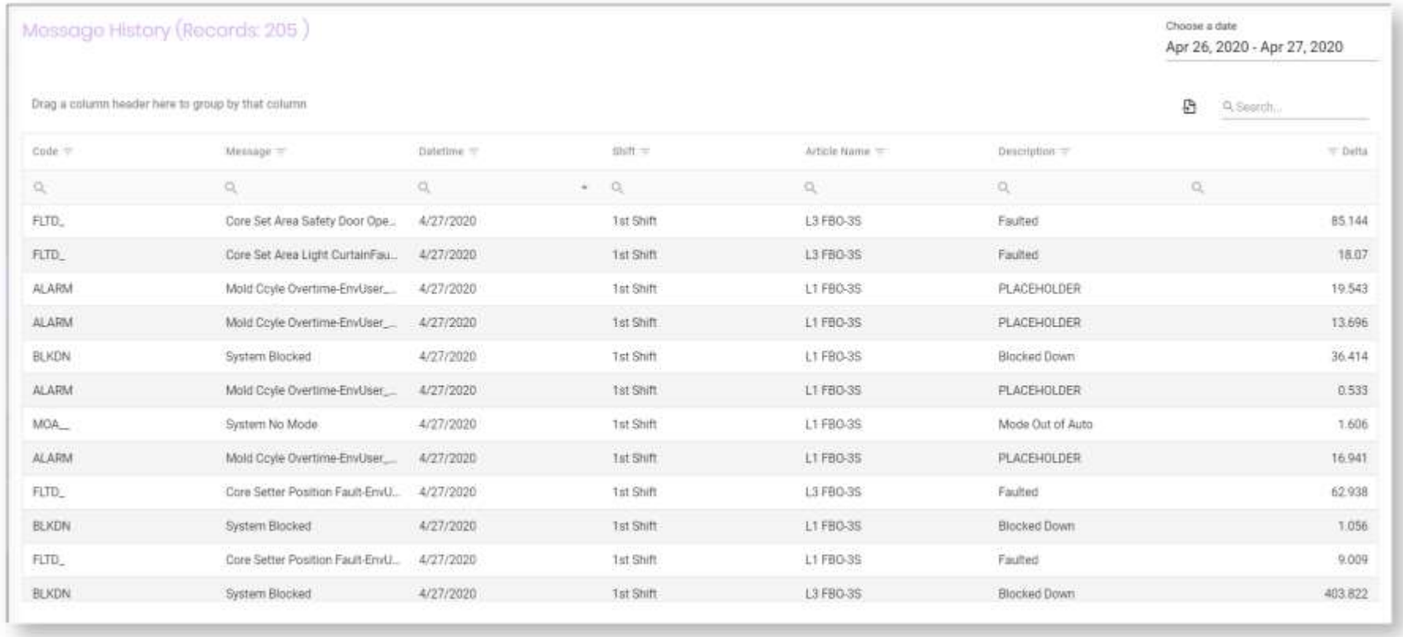


Data Browser Messaging Features

Messages

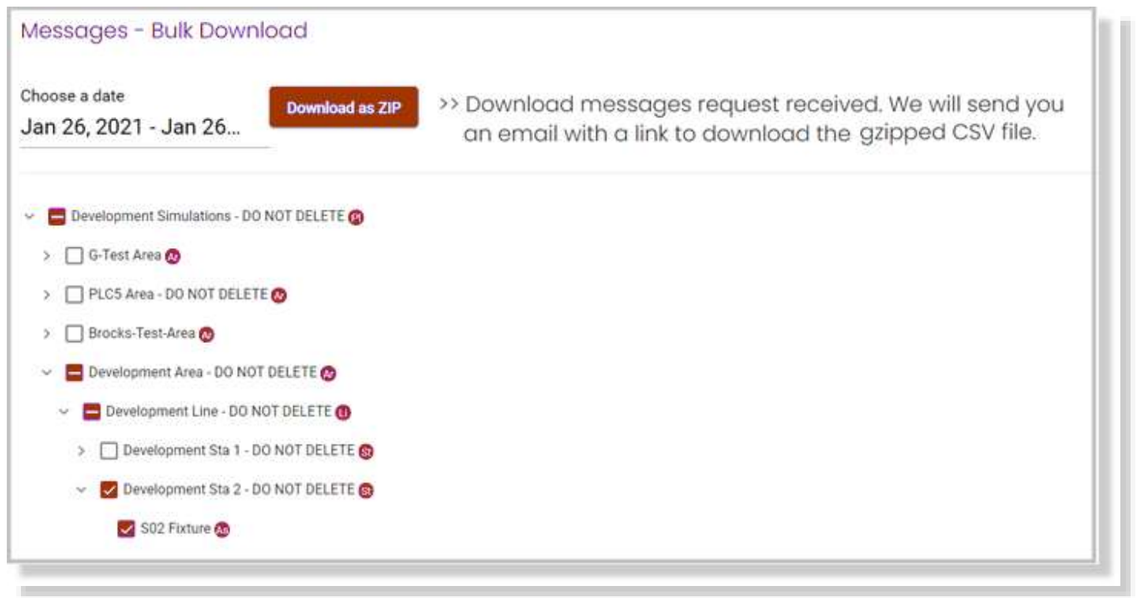
In the messages tab, the messages will display a table of all the message history. The table consists of several columns including Code, Message, Datetime, Shift, Article Name, Description, and the Delta parameter.

All these parameters can be sorted as well as the ability to drag and drop by the header, to group by that column.

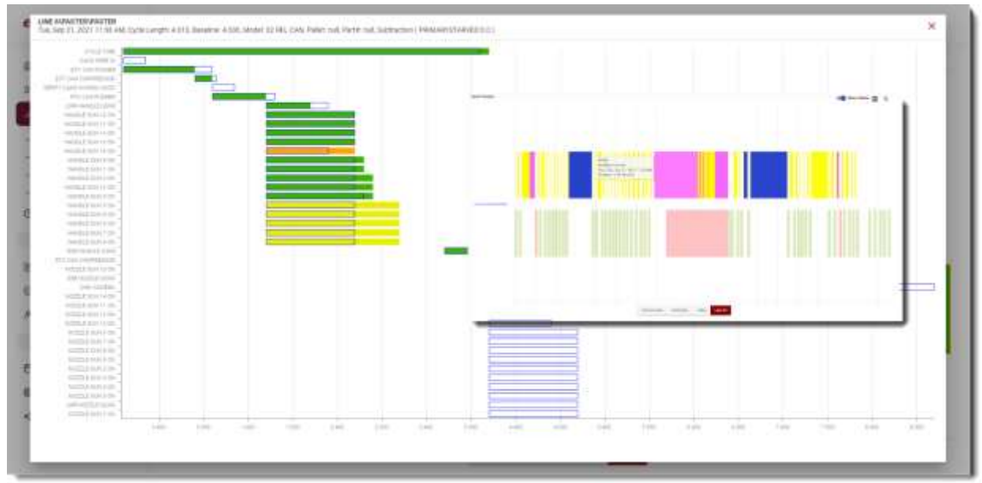


Messages-Bulk Download (if applicable)

In the messages bulk download tab, the user can download a zip file of all those selected messages from any object selected. Just select the date you would like to include, then drill down to the objects you want to add to the zip file. Then click download a zip. When it finishes, it will display a message to the right of the download to zip button.



Event Timeline (Data Browser)

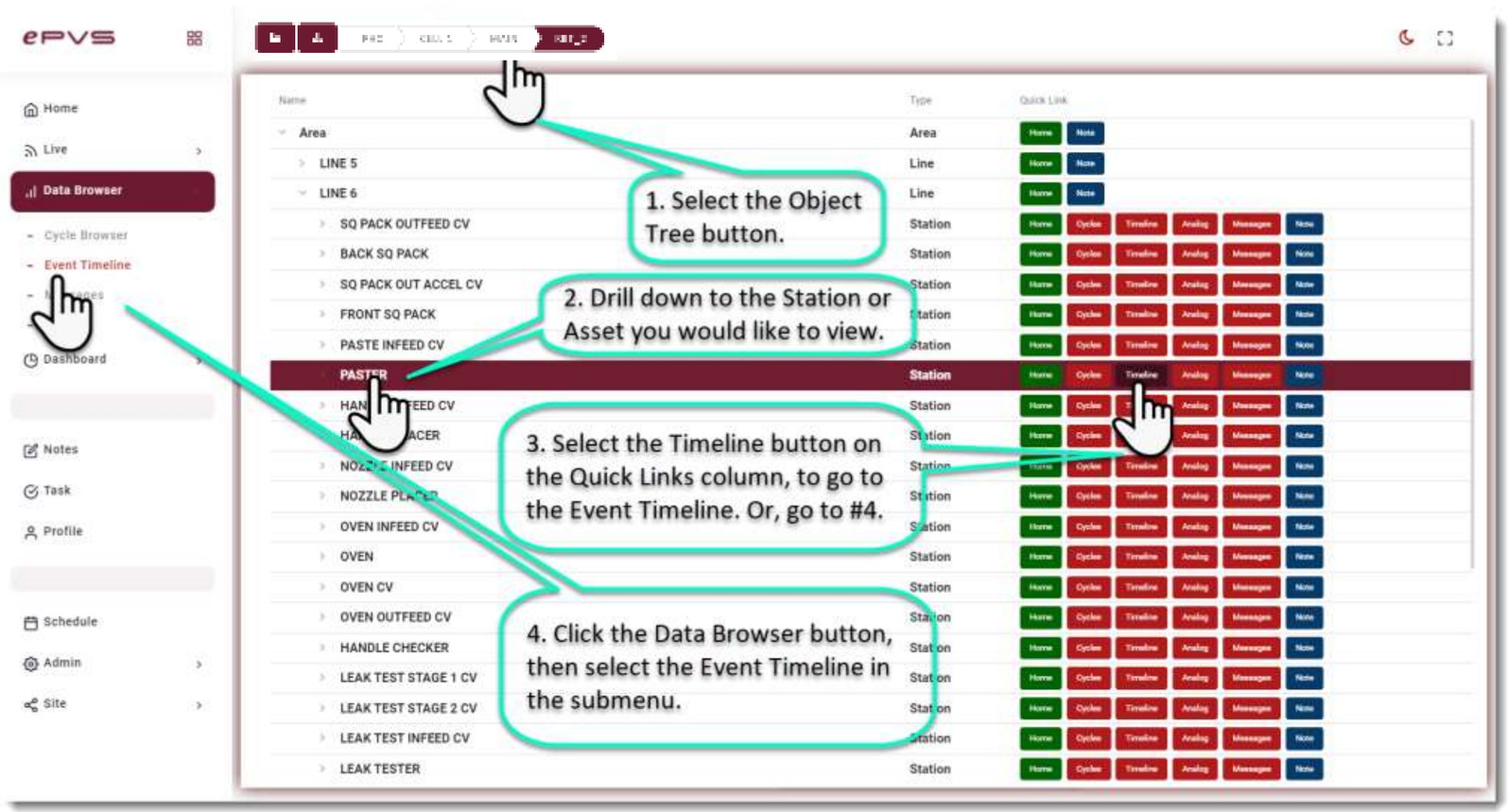


- History Display Window
- Chart View
- Selecting a Cycle
- Zoom Feature
- Event Timeline Browser

The Event Timeline is a simplified version of the Cycle Browser, which limits the viewing only on a timeline, or sequential display.

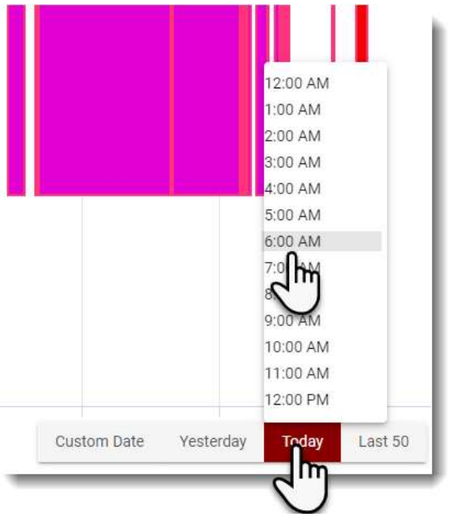
In this browser the user can simply select and view of cycle from a History Display window, then with a selection, it will open an Event Timeline in the sequential view.

Initially after a selection of a Station or Asset from the object tree, the user can select Timeline button from the quick links, or go to the left-hand side Main Menu, and click on the Data Browser button to reveal the submenu containing the Event Timeline selection.

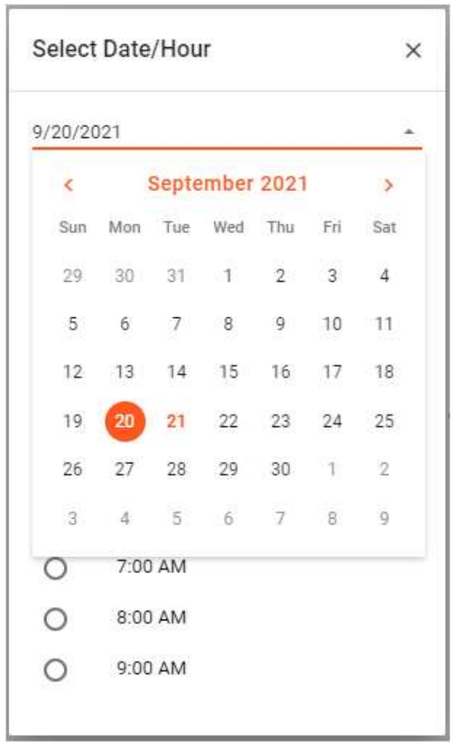


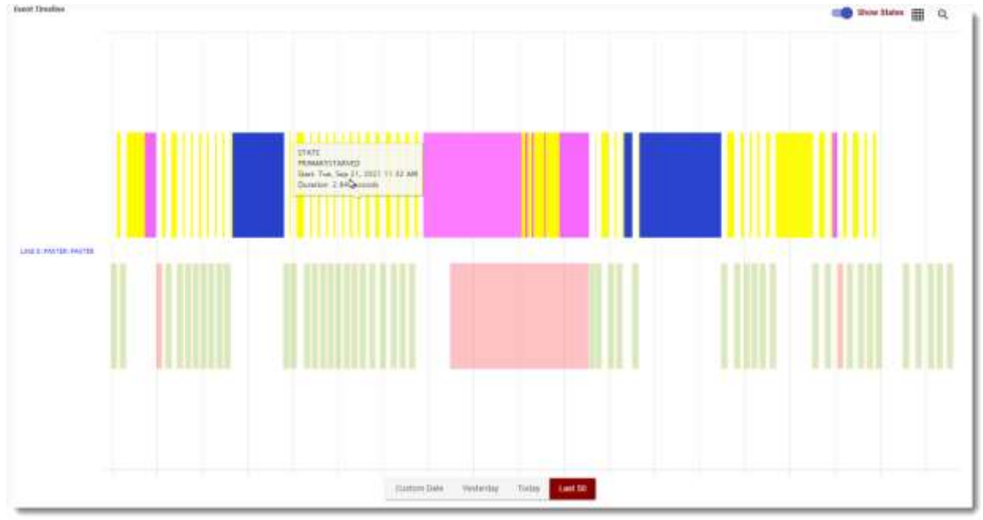
History Display Window

This will take the user to the History Display window. This first window consists of the last 50 Cycles, with an option to look at yesterday's, todays, or a custom date selection option. The last 50 Cycles is the default view.



In the Yesterday, and Today View, clicking on them will allow you to choose an hour of that day to view the data.





The Custom Date, feature we'll open a calendar applet to choose a day. After that you'll have to choose the hour in which to view.

The States can be toggled On or Off. Initially, they are Off. Simply click the Show States switch, and the window will reload with the states above the Cycles.

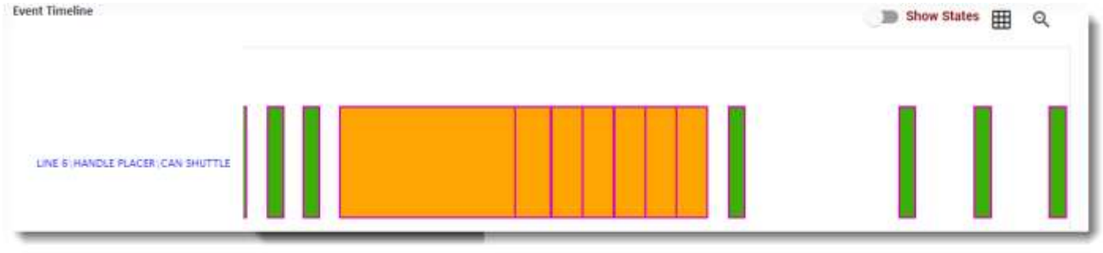


Chart View

The chart View will allow you to look at the last fifty Cycles on a table chart.

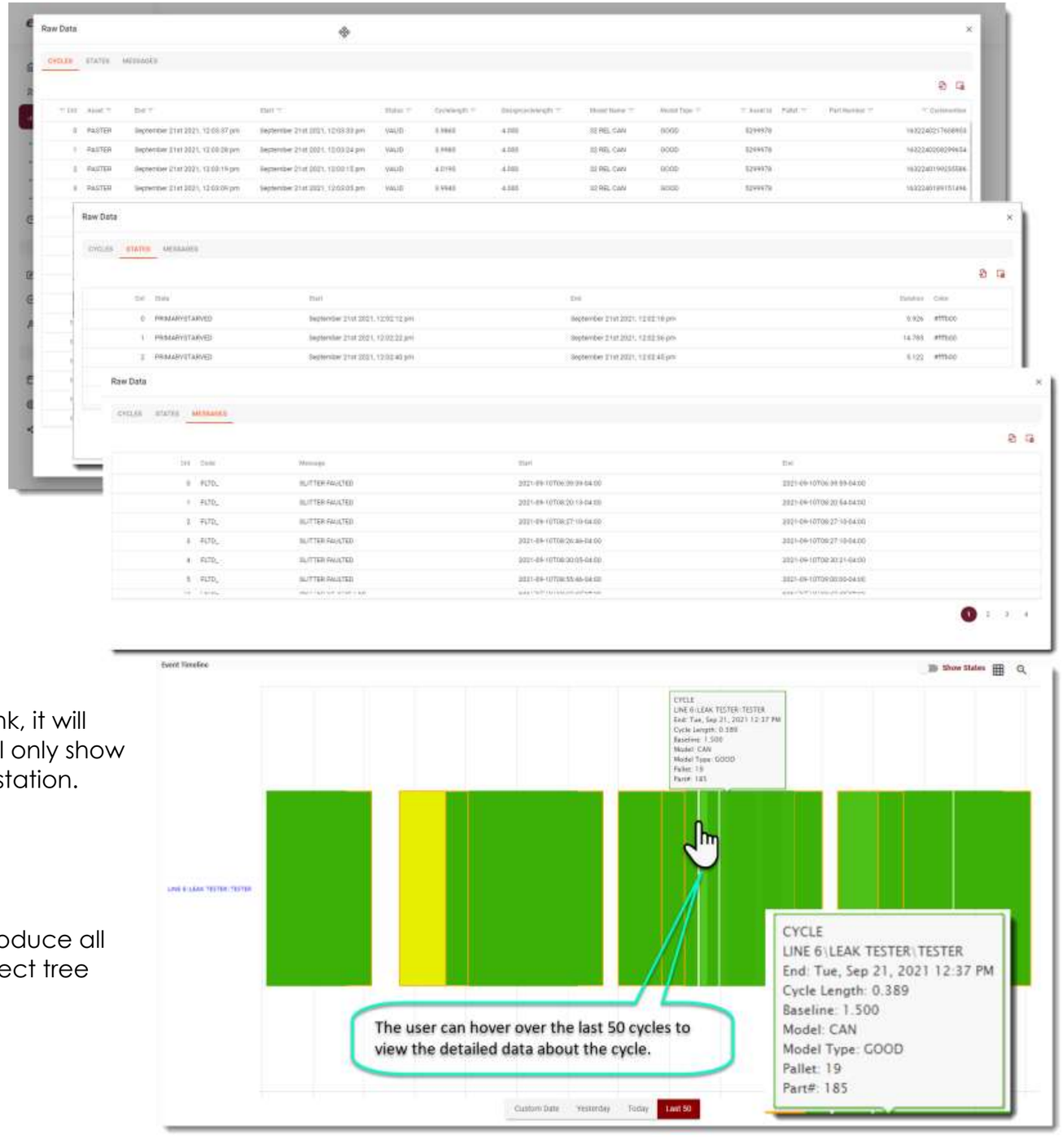
The user can select a cycle in which it will open the event timeline for that cycle selected.

It also has a tab for States and Messages.

The state's tab will show you on a table the last 50 states based upon when they started and ended, with the duration of each state. It also has a color code.

The messages tab will display all the messages of the last fifty Cycles. This shows them as displayed with the Code, the Message, Start time, and the End time.

In the upper right-hand side of the window will be the option to export the cycles to a download folder, and account user. This will allow the user to add or remove the columns that are displayed.



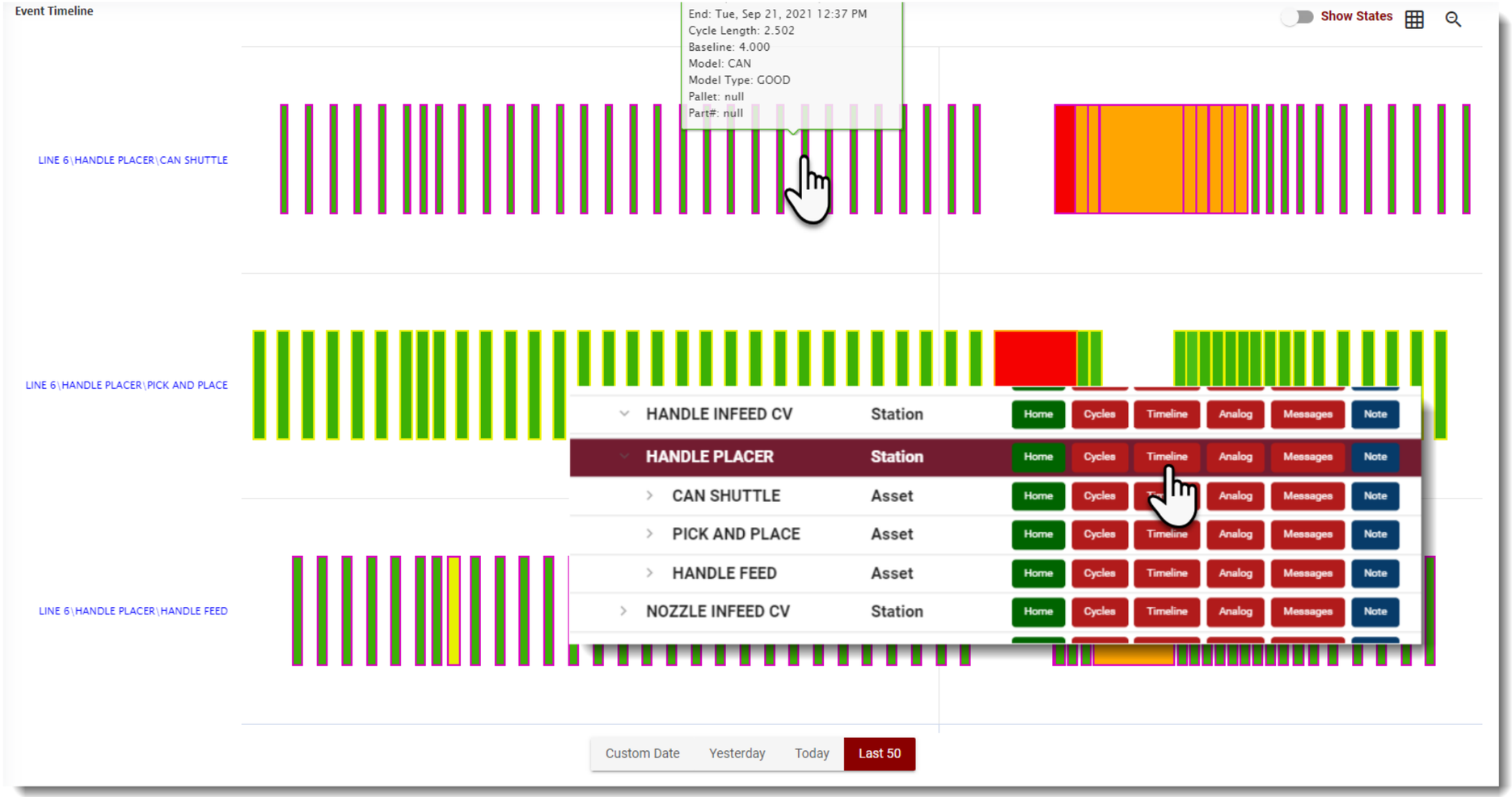
Selecting a Cycle

On the history display panel or the first screen after selection of the timeline link, it will display all the assets within in your selection. If you drill down to an Asset, it will only show that asset. If you drilled onto a station , it would show all the assets within the station.

Selecting at the higher level will take more system resources and longer to produce all the assets. The best practice would be to drill down to an asset within the object tree then go from there.

Zoom Feature

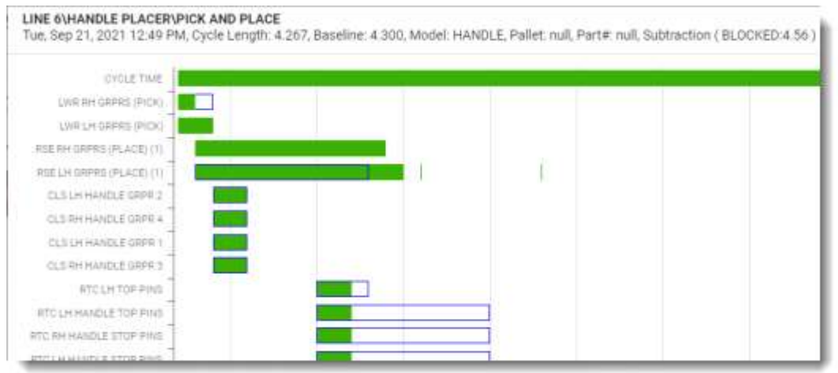
While viewing the cycles in the History Display Window and the Event Timeline, you can zoom in to an area by click and holding, then drag the zoom selection area over your intended cycles or using the mouse scroll feature. The selected area will be highlighted, then Update to a zoomed in view on your selection.

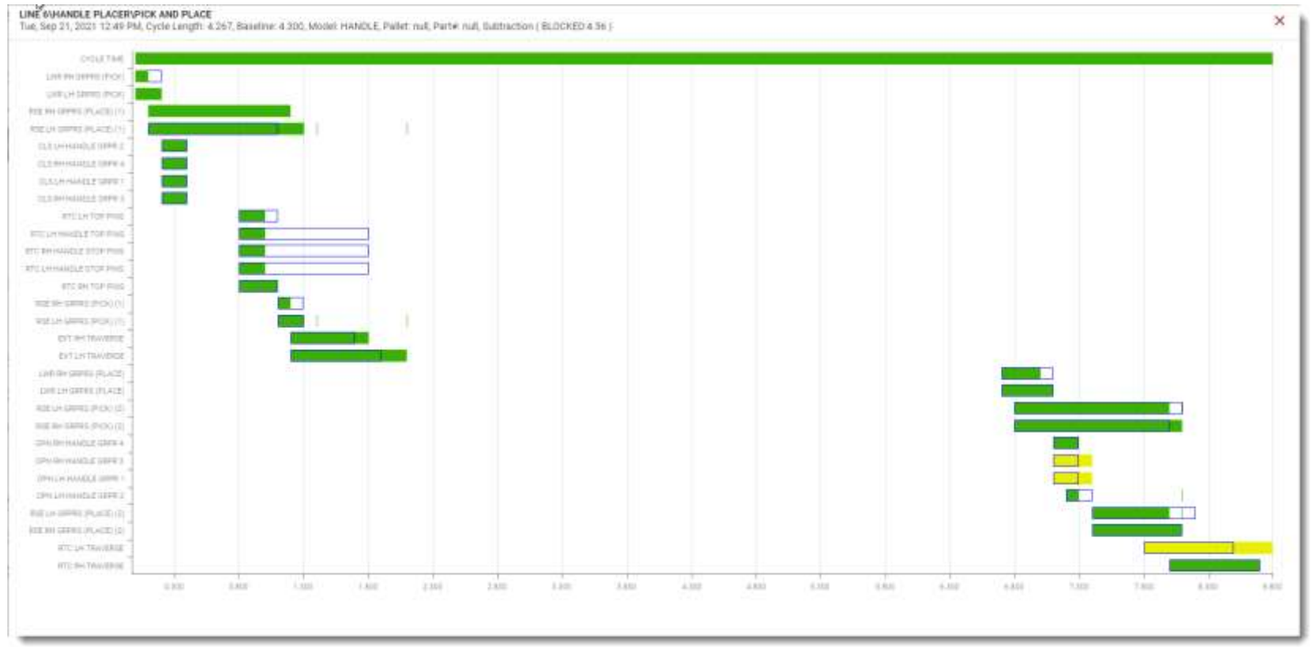


Event Timeline Browser

With your selection on the history display window, the event timeline will now open in a new window.

On the upper right-hand side how's the event timeline browser window, will be the object information. This consists of the date and time, as well as the Cycle Length, Baseline, Model, Pallet, Part Number, and any pertinent State information.

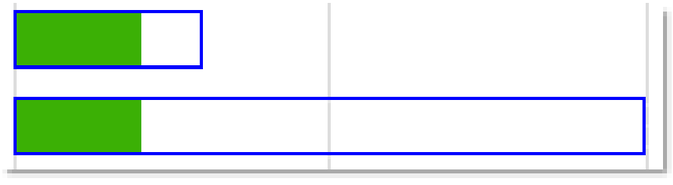


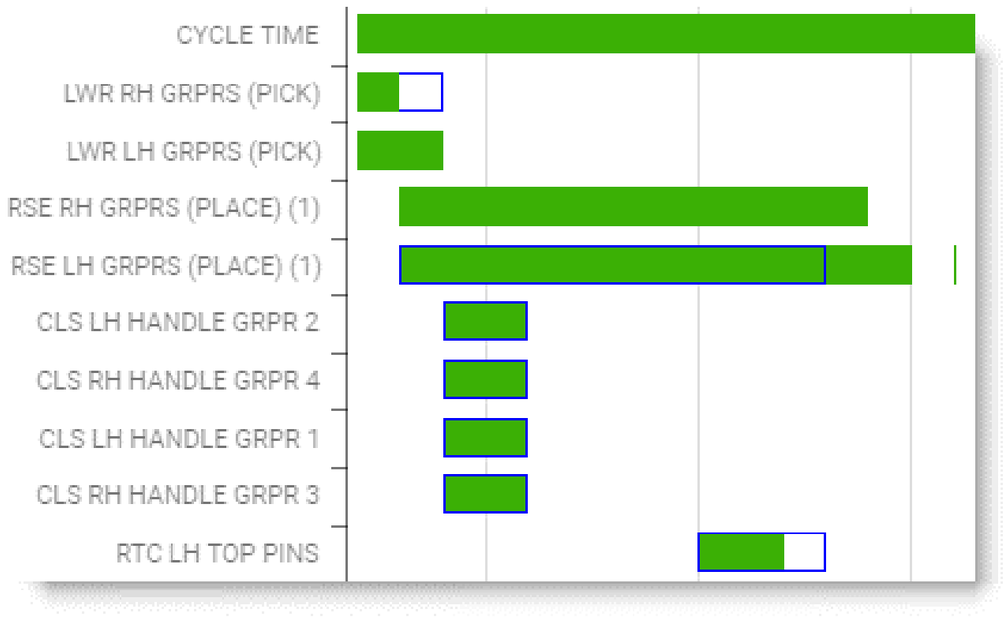


Note: The event timeline can only be viewed in sequence mode.

These sequences of motions are laid one on top of the other on a timeline. The object's motion times are color coded to show the status of each motion. The blue line around each motion is the Baseline.

The Baseline is the design time length for each motion.





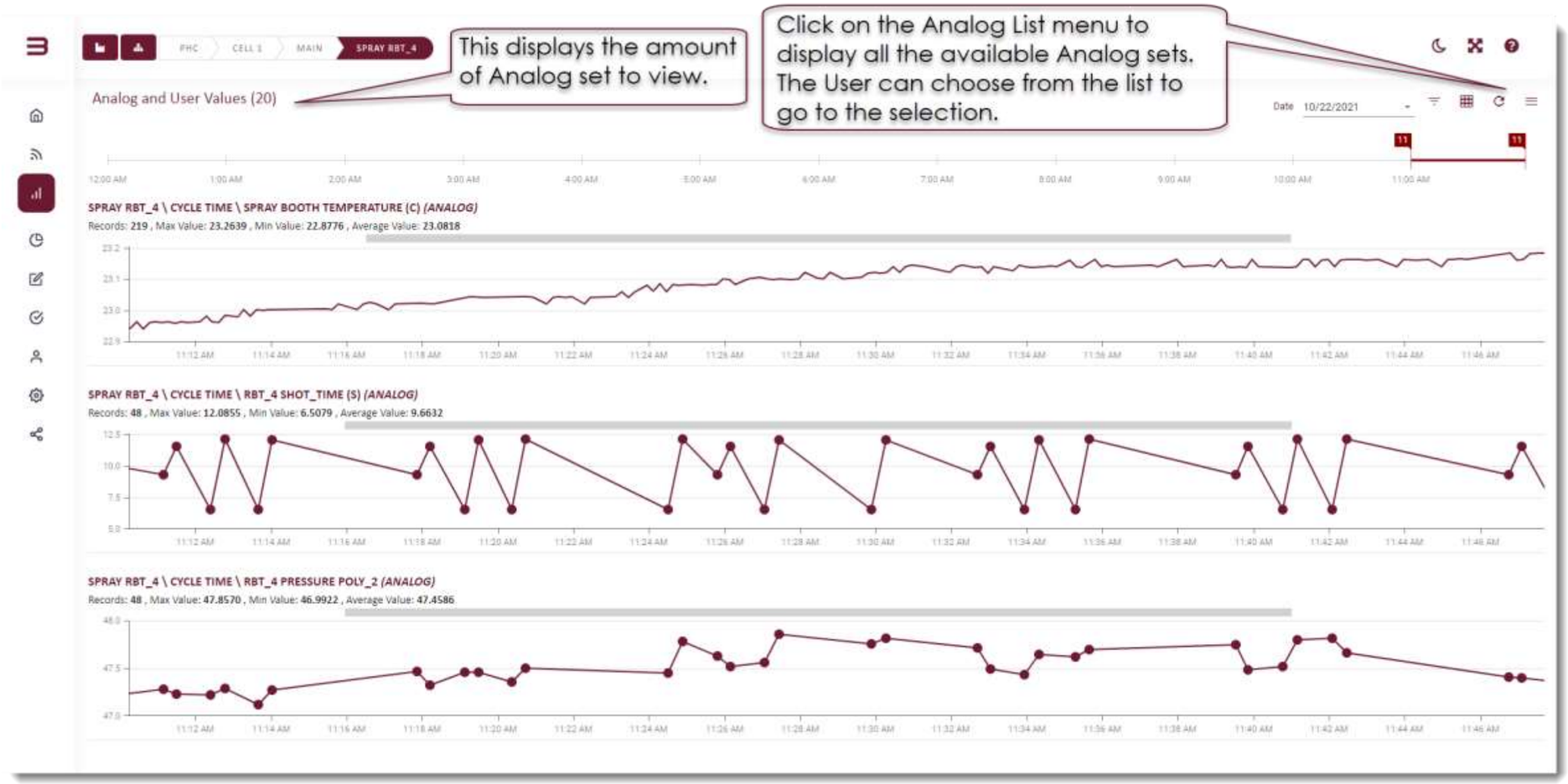
Analog User Data

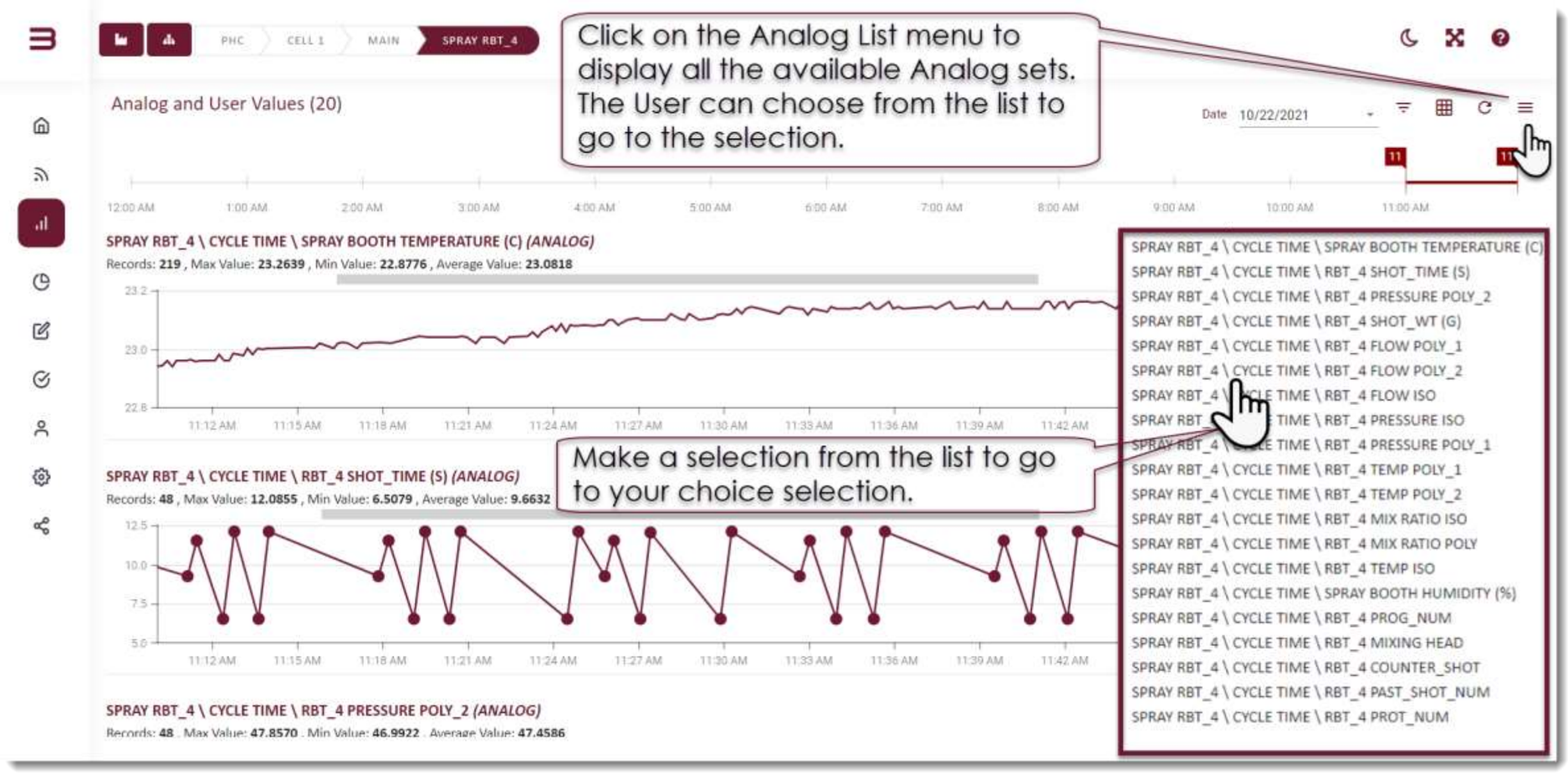
- **Date selection**
- **Time range tool**
- **Chart View**

To open the AUD, simply hover the mouse over the data browser button.

A sub-menu will appear to the right of the Button. Select the analog – user data tab. This module now will now load.

It will start by showing the time range tool as it is loading. Then below will populate with a chart graph displaying the object selected 1/10 increments and one-second increments.




PHC
CELL 1
MAIN
SPRAY RBT_4
Analog and User Values (20)
Click on the Analog List menu to display all the available Analog sets. The User can choose from the list to go to the selection.
Date 10/22/2021
SPRAY RBT_4 \ CYCLE TIME \ SPRAY BOOTH TEMPERATURE (C) (ANALOG)
Records: 219 , Max Value: 23.2639 , Min Value: 22.8776 , Average Value: 23.0818
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 SHOT_TIME (S) (ANALOG)
Records: 48 , Max Value: 12.0855 , Min Value: 6.5079 , Average Value: 9.6632
Make a selection from the list to go to your choice selection.
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 PRESSURE POLY_2 (ANALOG)
Records: 48 , Max Value: 47.8570 , Min Value: 46.9922 , Average Value: 47.4586
SPRAY RBT_4 \ CYCLE TIME \ SPRAY BOOTH TEMPERATURE (C)
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 SHOT_TIME (S)
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 PRESSURE POLY_2
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 SHOT_WT (G)
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 FLOW POLY_1
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 FLOW POLY_2
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 FLOW ISO
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 PRESSURE ISO
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 PRESSURE POLY_1
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 TEMP POLY_1
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 TEMP POLY_2
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 MIX RATIO ISO
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 MIX RATIO POLY
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 TEMP ISO
SPRAY RBT_4 \ CYCLE TIME \ SPRAY BOOTH HUMIDITY (%)
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 PROG_NUM
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 MIXING HEAD
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 COUNTER_SHOT
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 PAST_SHOT_NUM
SPRAY RBT_4 \ CYCLE TIME \ RBT_4 PROT_NUM

Date selection

The date selection applet will allow you to select the previous day to view. Simply click the pull-down tab next to the date. Below a calendar will appear with the current date highlighted. To select another day simply just click on another date on the calendar. Use the fore-and-aft month selector to go back several months if needed. Once the Box selected simply select the date the View will update. The hour range of this tool will spend 24 hours. However, on the current day, it will only show the hours of availability.

Time range tool

Now that your day is selected, but users can utilize the time range tool. This tool will allow the user to select an hour to view or more if needed. The tool is currently set at 1 hour. To shift the hours simply grab the bar between the two flags, click and hold, and slide to the hour that you would like to view. Release it, and the charts below will update. To increase the time span simply click and hold one of the flags and slide it to the number of hours you would like to view in one shot.

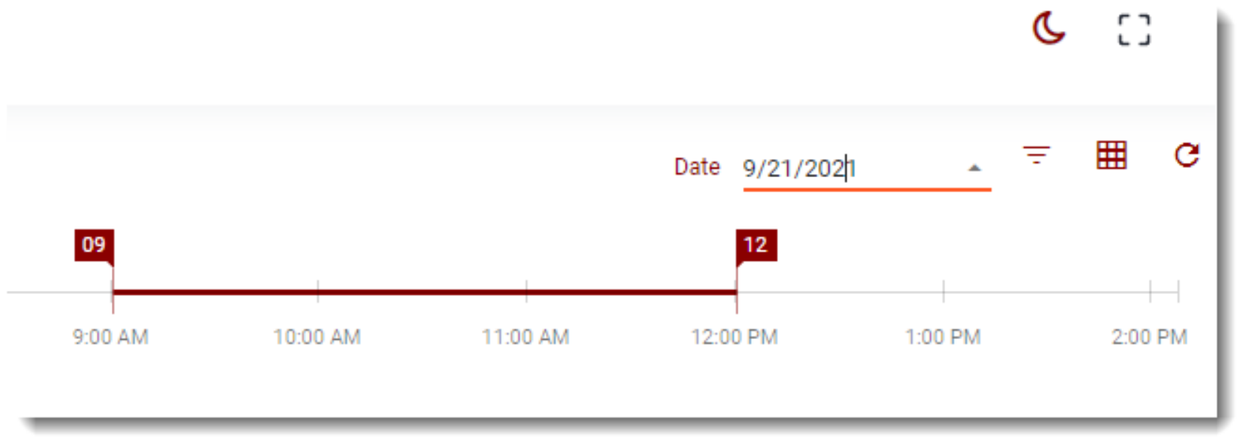
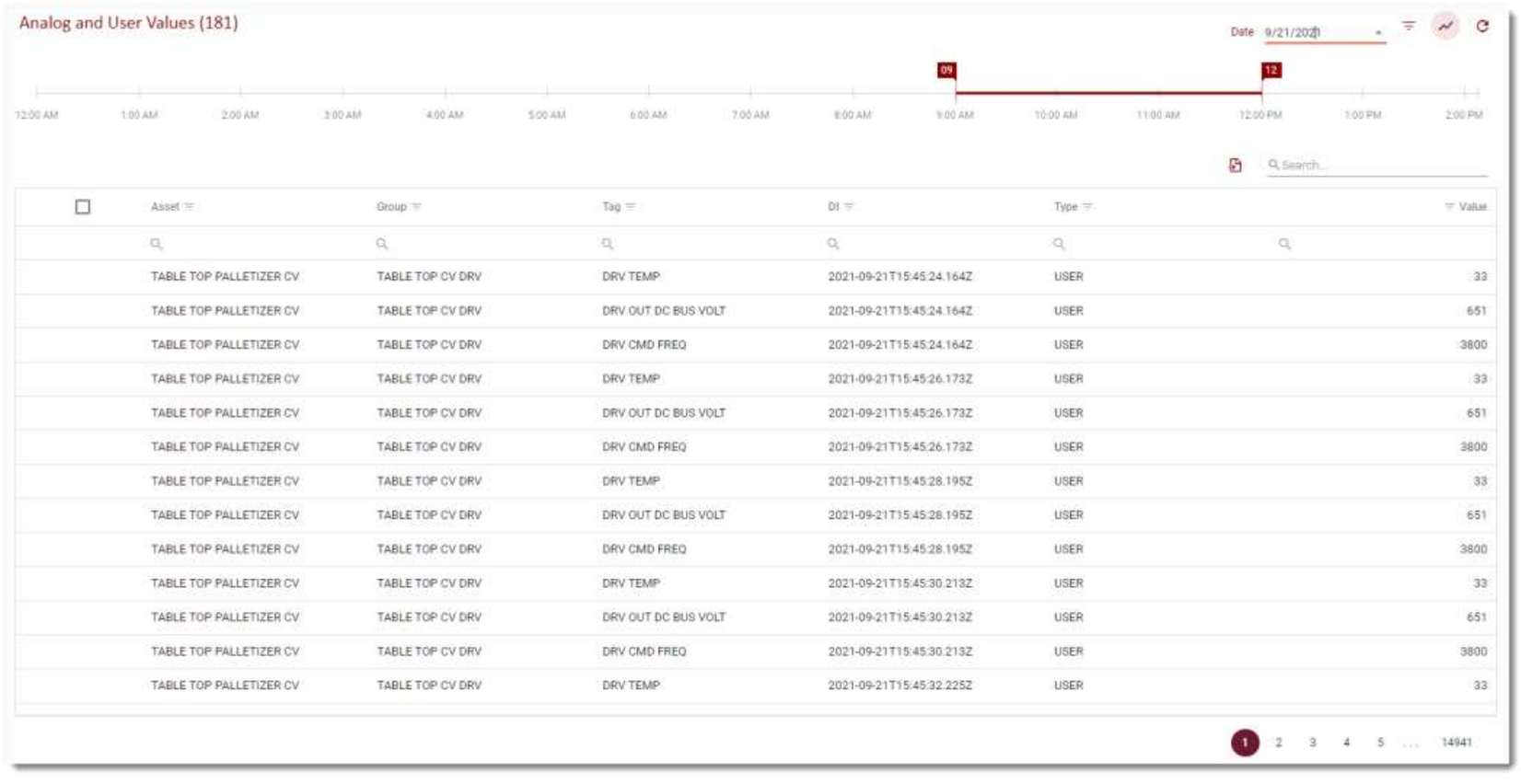


Chart View

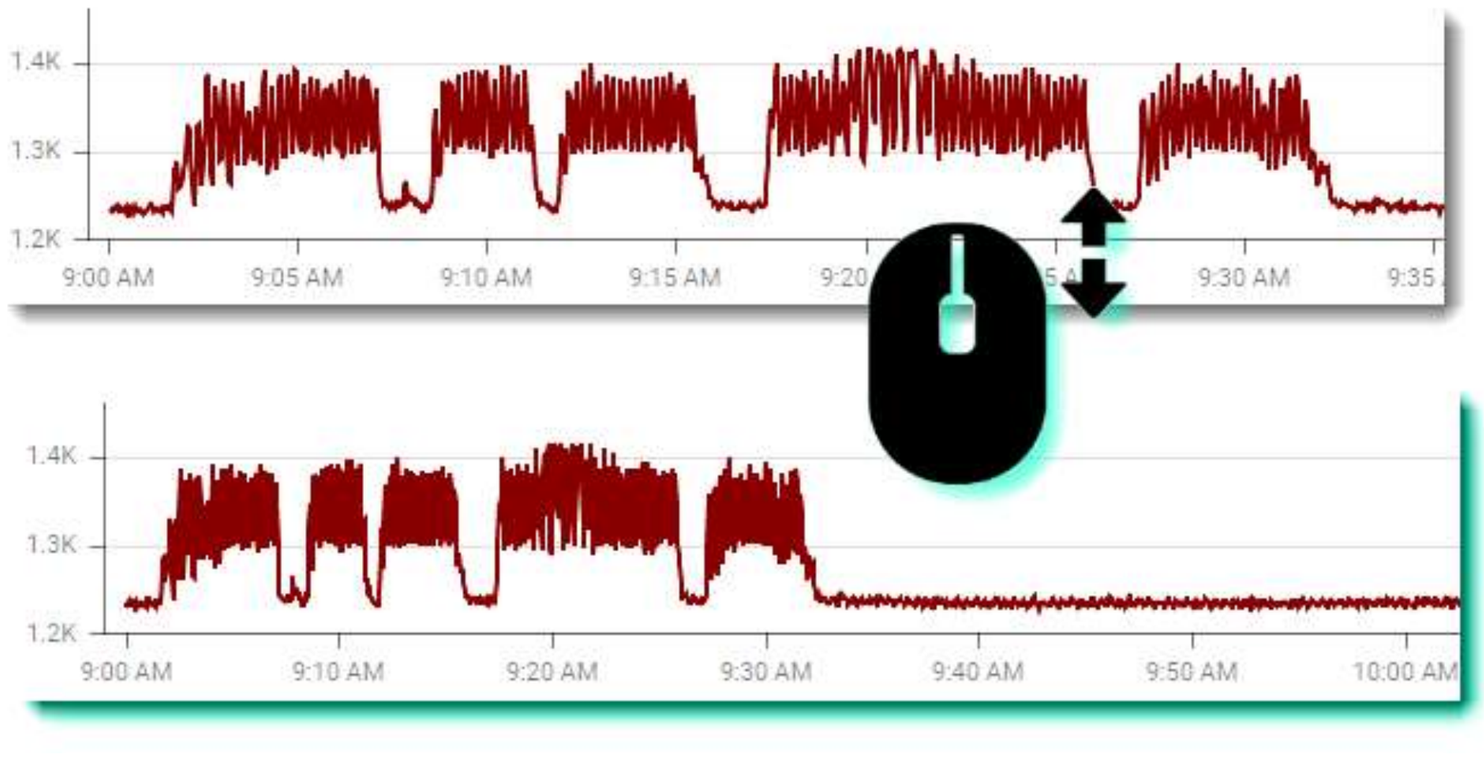
The chart View what displays the object a line chart. It will display the max value, the middle minimum value, and the average value add a line chart. The user can hover over the data points to view the time and the value of that moment. At the current few it will just play in one-second increments.



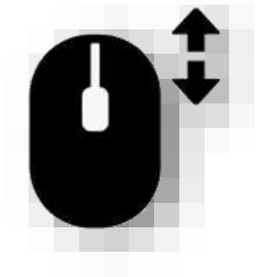
Asset	Group	Tag	DI	Type	Value
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV TEMP	2021-09-21T15:45:24.164Z	USER	33
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV OUT DC BUS VOLT	2021-09-21T15:45:24.164Z	USER	651
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV CMD FREQ	2021-09-21T15:45:24.164Z	USER	3800
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV TEMP	2021-09-21T15:45:26.173Z	USER	33
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV OUT DC BUS VOLT	2021-09-21T15:45:26.173Z	USER	651
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV CMD FREQ	2021-09-21T15:45:26.173Z	USER	3800
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV TEMP	2021-09-21T15:45:28.195Z	USER	33
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV OUT DC BUS VOLT	2021-09-21T15:45:28.195Z	USER	651
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV CMD FREQ	2021-09-21T15:45:28.195Z	USER	3800
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV TEMP	2021-09-21T15:45:30.213Z	USER	33
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV OUT DC BUS VOLT	2021-09-21T15:45:30.213Z	USER	651
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV CMD FREQ	2021-09-21T15:45:30.213Z	USER	3800
TABLE TOP PALLETIZER CV	TABLE TOP CV DRV	DRV TEMP	2021-09-21T15:45:32.225Z	USER	33

1 2 3 4 5 ... 14941

An additional feature to this chart is the scroll feature. The user can hover over the graph and use the scroll on your mouse to zoom into a specific area. This chart will display in one-unit intervals and 110th intervals. The scroll feature can be used on both charts to zoom in or zoom out. The scaling will also adjust when zooming in or zooming out.

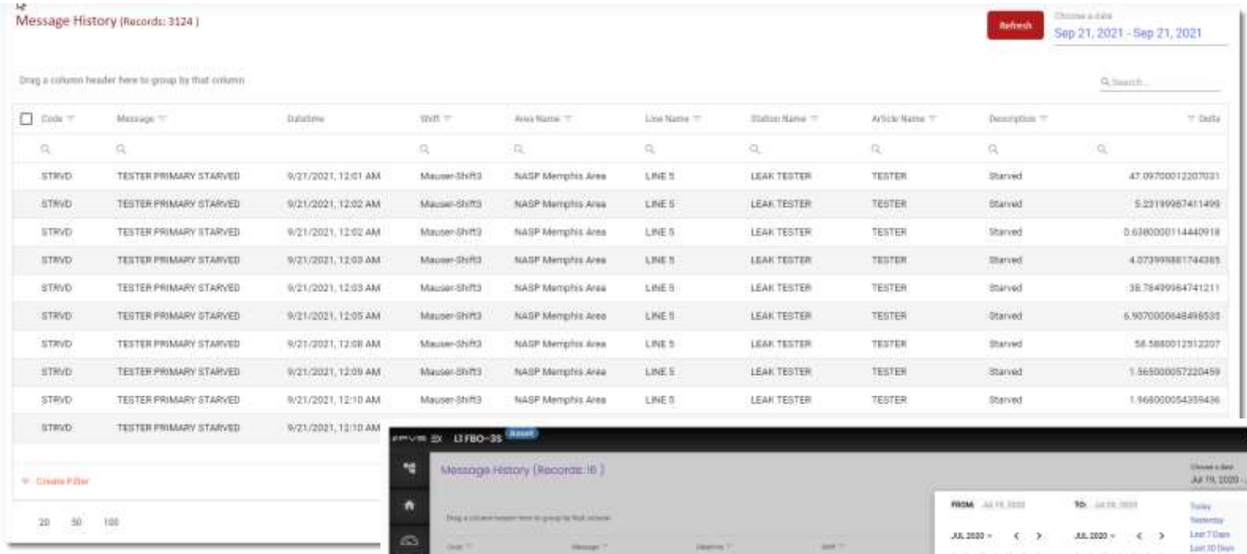


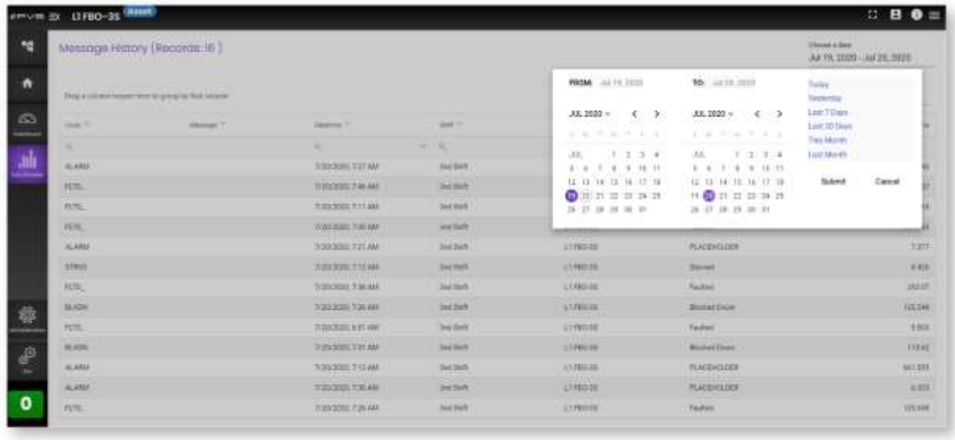
While viewing the Analog data, you can zoom in and out by using the mouse scroll feature.



Messages (Data Browser 4.2)

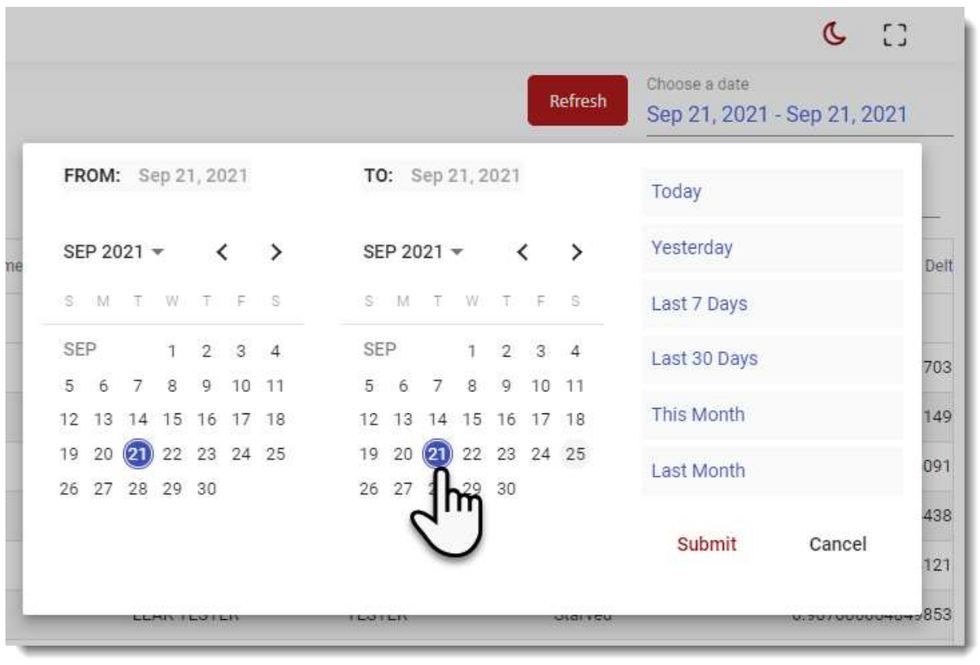
- Calendar selection
- Sorting and Grouping
- Column search feature
- IP 4.2 Messages Bulk Download





Calendar selection

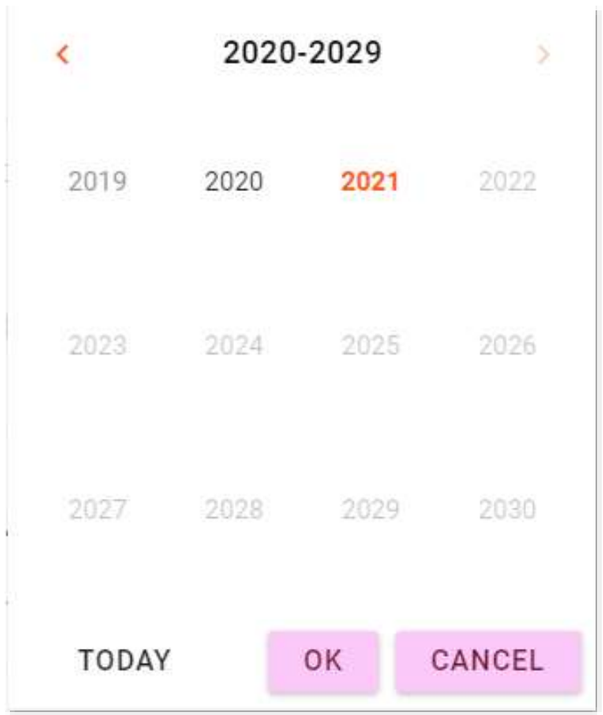
To select a different date range simply select the choose a date Link in the upper right-hand corner of the messages page. Below the link, it will show the current selection. Clicking on the date will open a selection calendar.



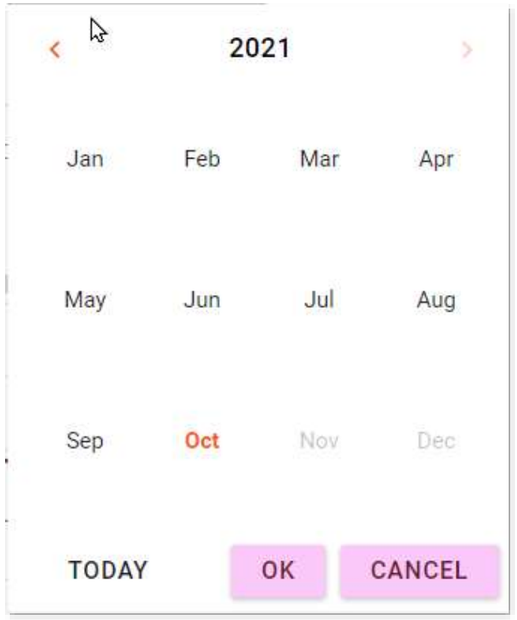
This selection calendar is comprised of 2-month selection palette. The month on the left will represent the start date. Making the selection here will select the starting day you would like to view. The calendar to the right will be the end date. After your selection, then click the submit button. The message page will now refresh with your selected date range.

Above each month calendar is the actual month, and a for and after selection tabs. Use selection tabs to move forward or backward, month by month, to your selection. If you wish to select a different year, simply click on the month and year link. This will open a year menu, which will allow you to select a different year.

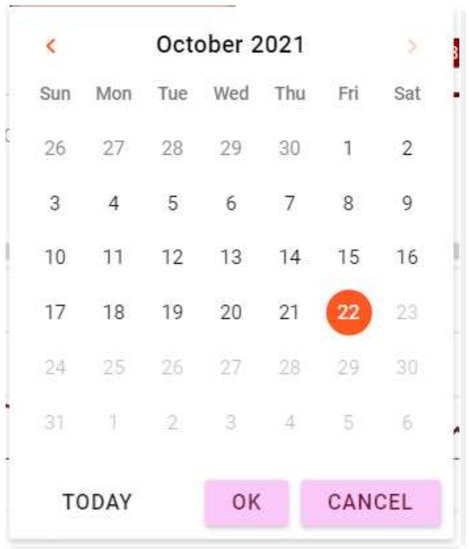
After you select a year, the calendar will refresh with the months listed on a table. Select the month you wish to see by clicking on it.



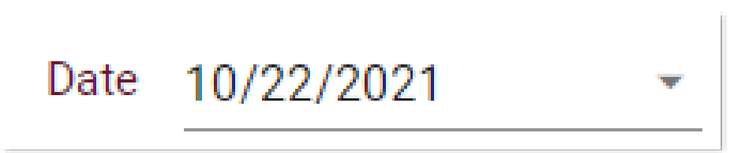
The calendar will refresh to the year and then select the month Now just to let the day to set your start date. Perform the same procedure to set up your end date.



The date and the browser will refresh and show the selection made.



The date and the browser will refresh and show the selection made.

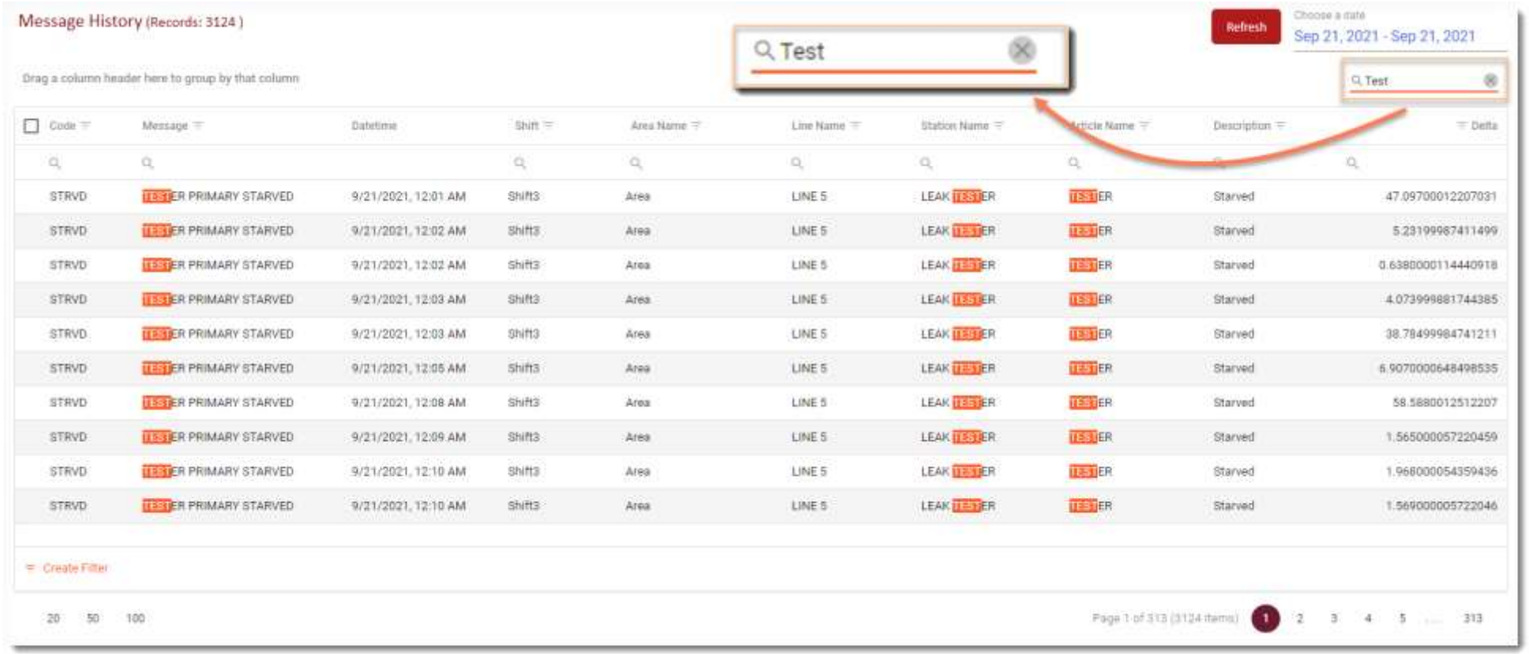


Sorting & Grouping

Each column has several features available to use to sort the data. The user can select the Sort icon which will open a menu that will allow you to select all or select individual or multiple selections based upon the column you are viewing. Once you made your selection select the okay button and the browser will refresh with your selection.

Each column can also be sorted by groups, ascending, or descending. Simply click on the title of any column and an up or down arrow will appear next to the title. Click on it to sort the column in an ascending, or descending command.

You can also grab a column and drag it to the upper left side of the table to group by that column. Simply click hold and drag to the upper left-hand side. You can select multiple columns to filter and sort what you need.



Column search feature

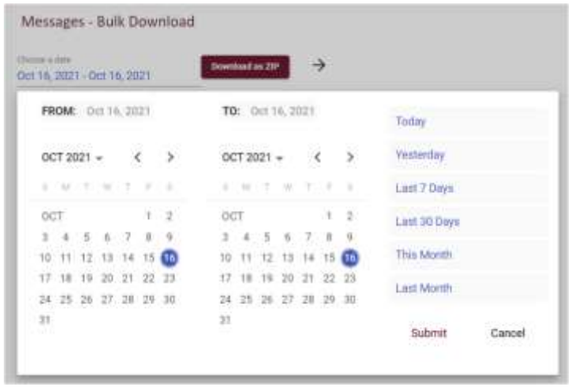
Below every title plate of each column does a search feature. Clicking on it will open a menu that will allow you to make your search based upon certain criteria. Criteria, such as Contains, Does not contain, Starts with, Ends with, Equals, Does not equal, and a Reset.

Clicking on any of them will open a dialogue editing box in place for the user to enter the information needed to search.

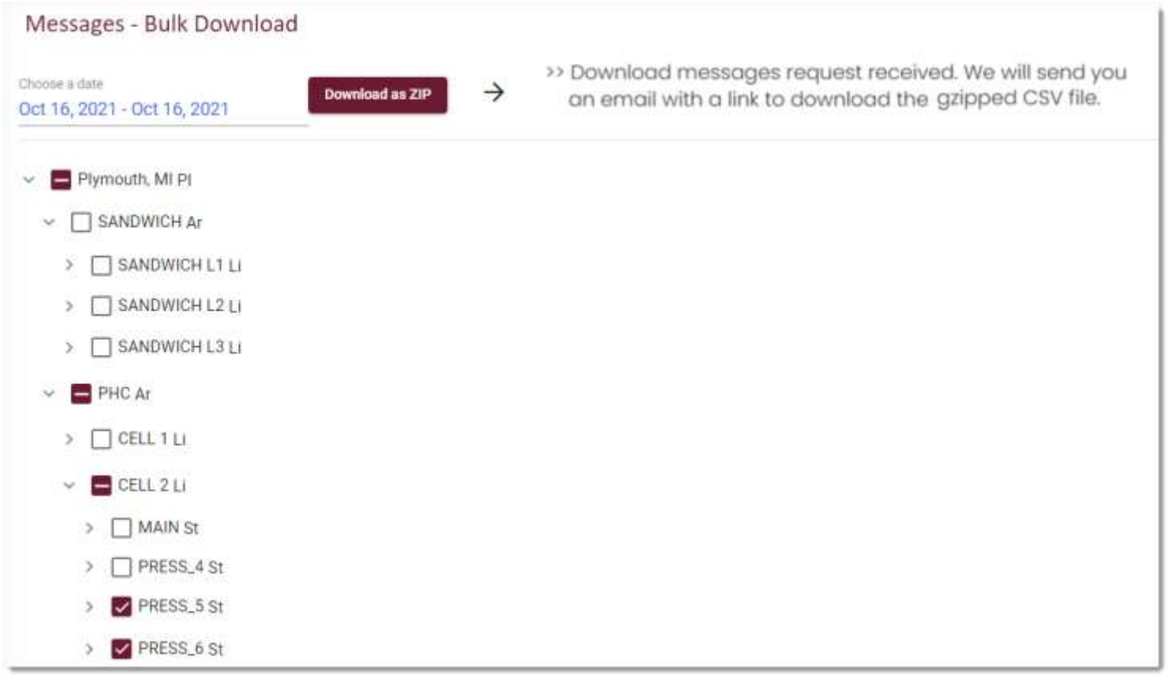
IP 4.2 Messages Bulk Download

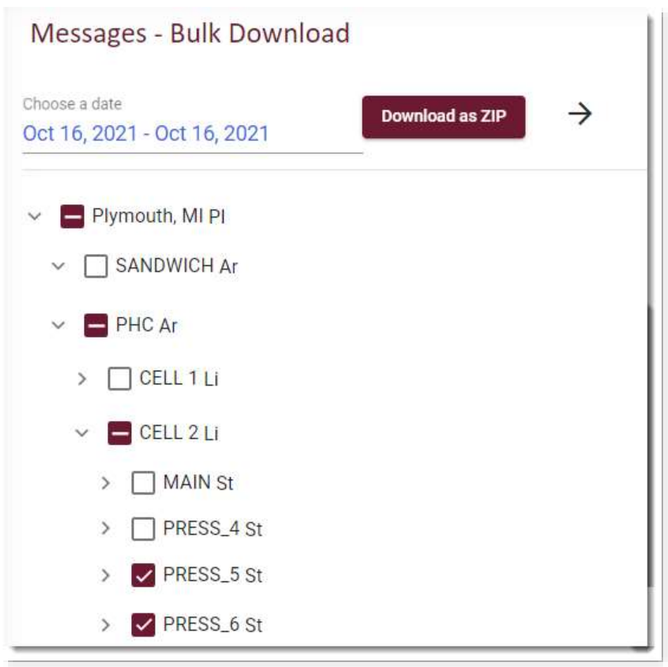
Start by selecting a date range you would like to include in your Bulk Download.

Use the calendar applet to make your selections.



Drill down to the objects you would like to include.





Click the Download as ZIP, and it will download a Zip file to your email.

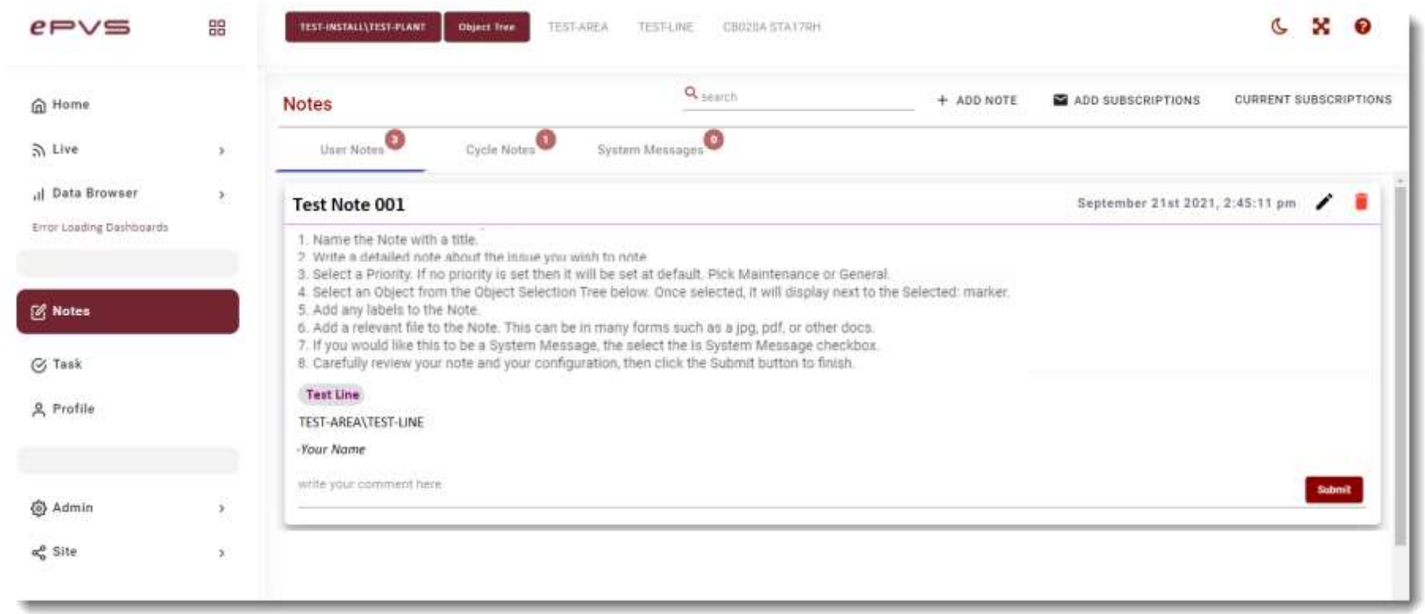
Notes

- **Adding a Note**
- **Add Subscriptions**
- **Current Subscription**

The notes section consists of an area where the user can put a note in the system at a certain object level. There is also an option to add notes in the cycle browser.

The notes section has three separate tabs for use your notes, cycle notes, and system. System notes are like the regular user know it's except for the fact that when selected it will display across the whole system, not just at a certain level.

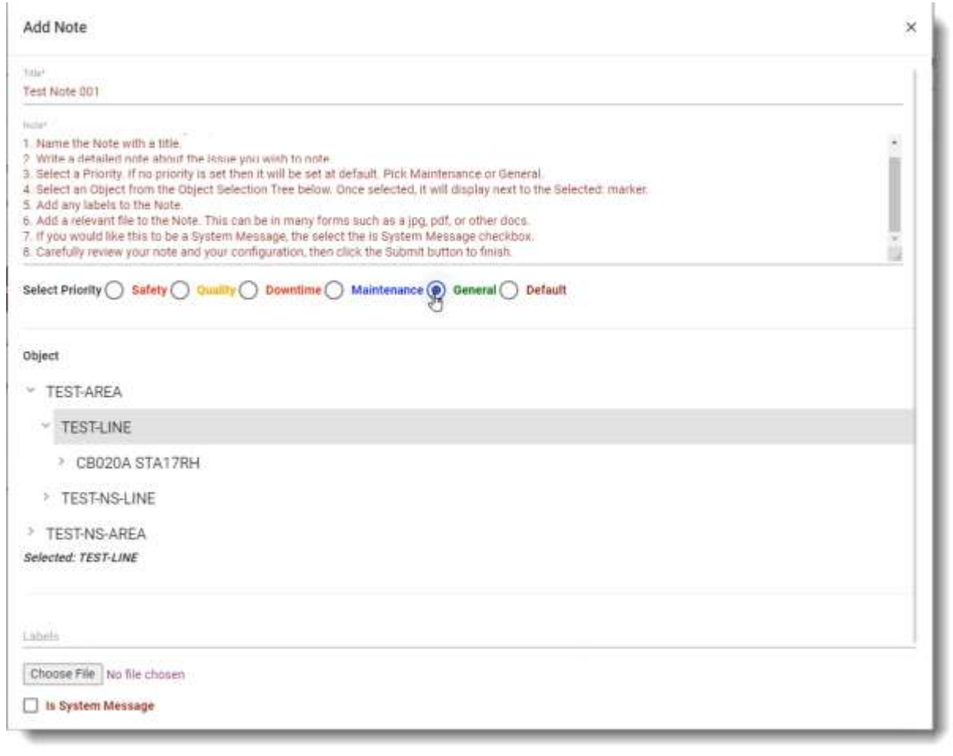
Each note can be edited to correct or add comments to, as well as being deleted.

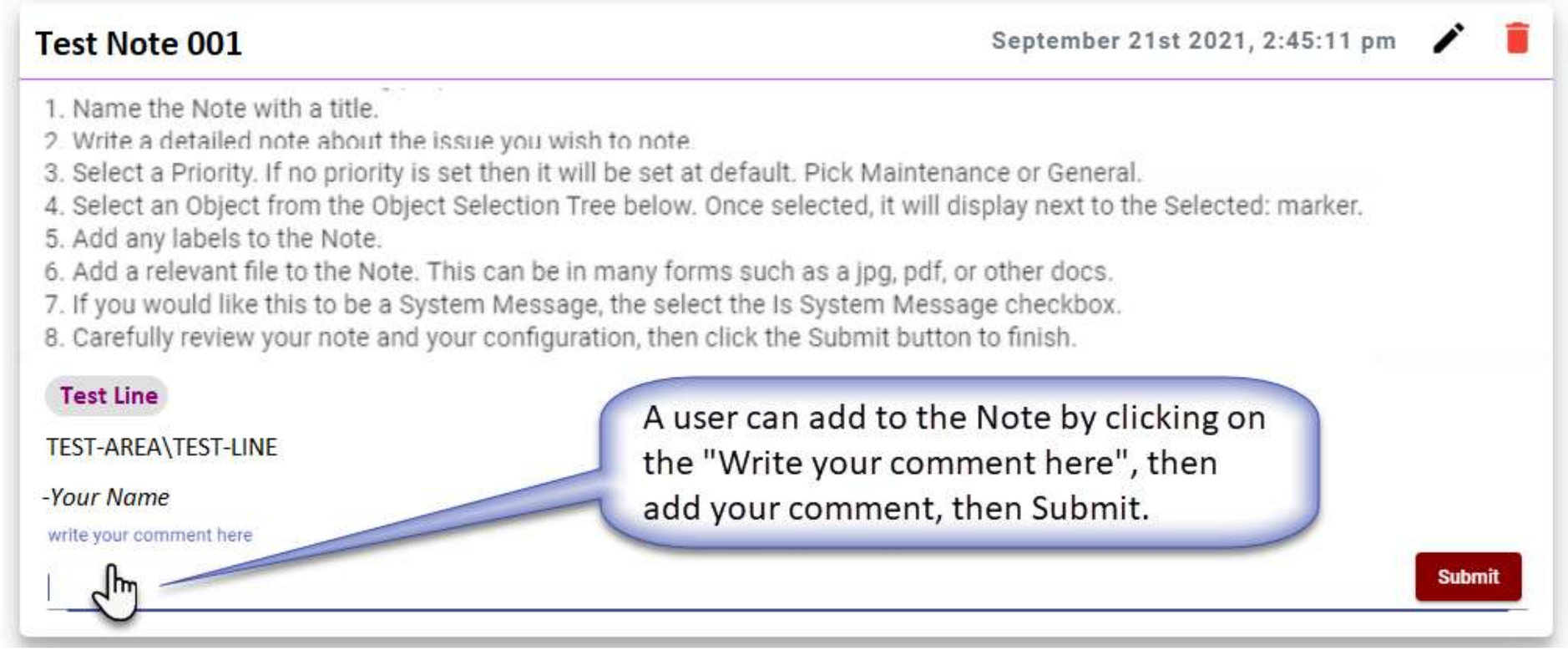


Adding a Note

To add a note simply click the add note button with a **+** sign to the left. This will open the **+ Add Note** editing window.

- Name the note with the Title.
- Write a detailed note about the issues you wish to convey.
- Select a Priority. If no priority is set, then it will be set at default.
- Select an object from the Object Selection Tree. Once selected, it will display your selection below.
- Add any Labels to the note.
- Add any relevant files to the note. This can be in many forms such as, jpg, PDF, or other various document formats.
- If you would like this to be a System message, then click the Is System Message check box. By doing this, means that this note will appear at every level selected.
- Carefully review your note and your configuration, then click the Submit button to finish.
- To see a demonstration, click here to view the Adding a Note demo.





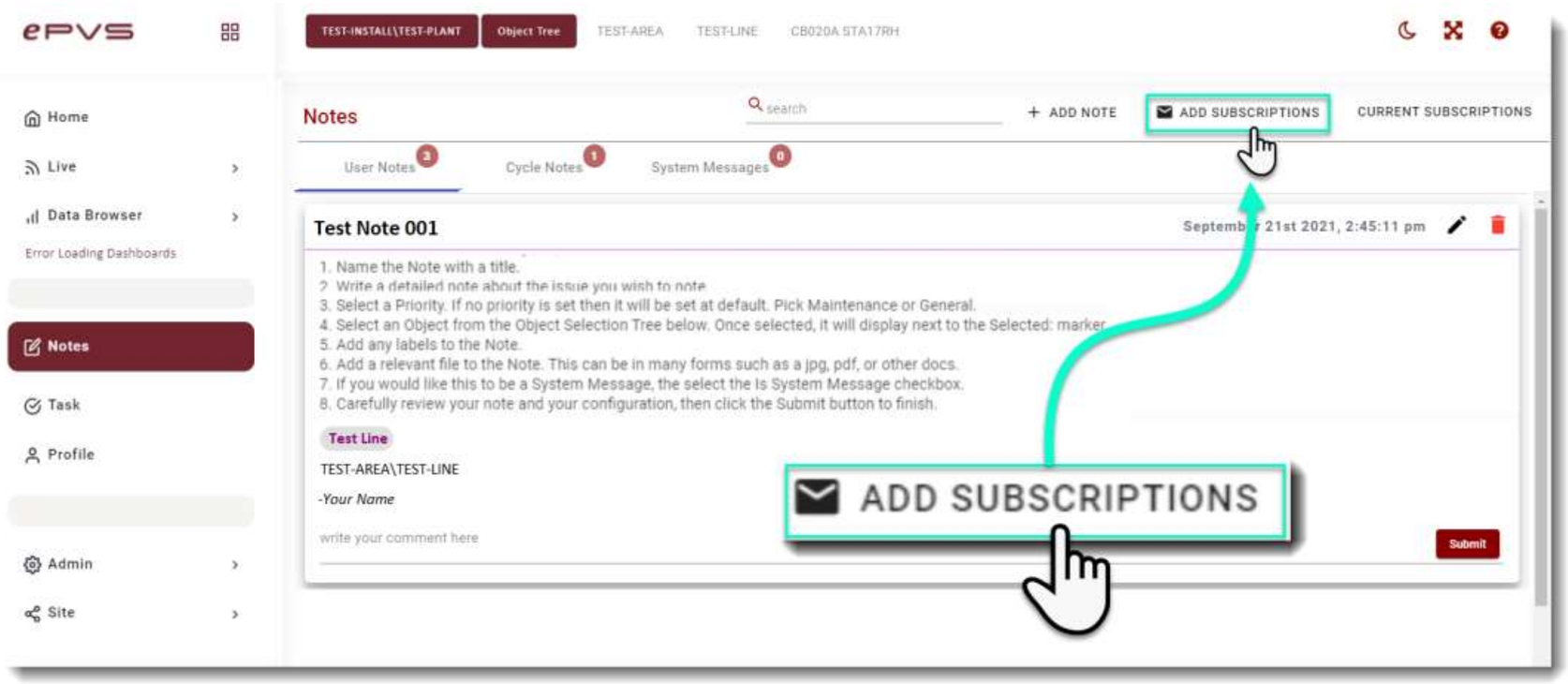
If needed, a user can add a comment to the note. Just click on the "**Write your comment here**" area and you can input your comment as needed.

Add Subscriptions

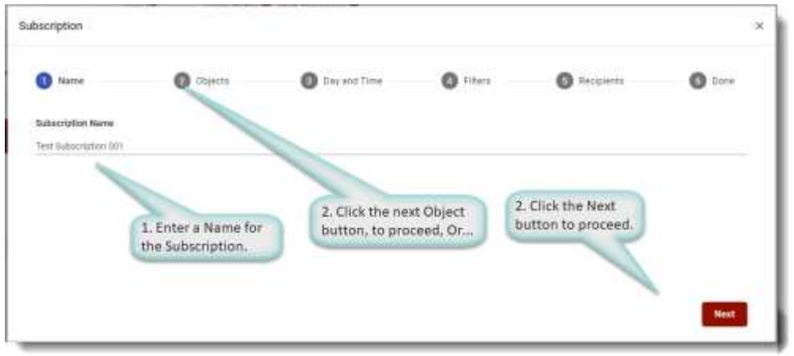
The users can subscribe to the notes section. By doing this they can have the currently selected notes sent to them by day and time. Simply click on the add subscriptions link. This will open the subscription editor.

Just follow along and add what is needed to complete your subscription. Follow the steps below:

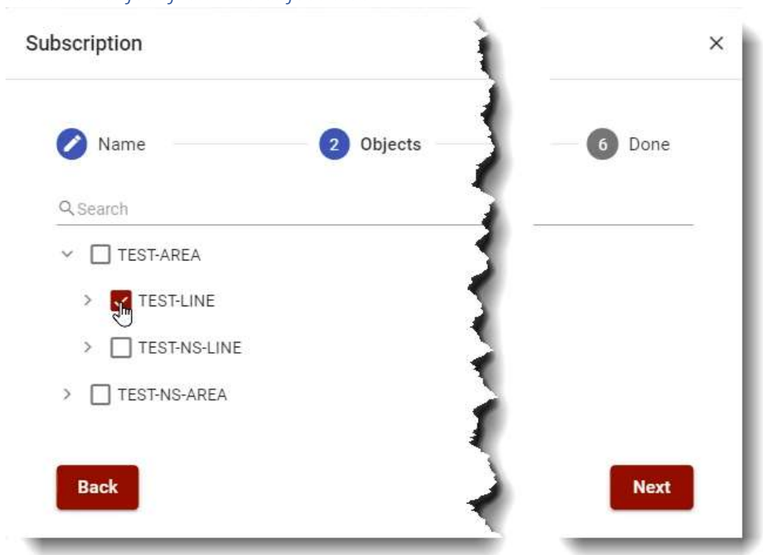
1. Enter a name for the subscription.
2. Select an object from the object tree.
3. Select the day and the time you would like to receive the subscription of the notes.
4. Select the priority of the note.
5. Enter an email of the recipients. You can enter several recipients, however, ensure you enter one email per line.
6. Review your input information, and then use the back button, to go back and make any corrections. When completed click the done button or the submit button.
7. ePVS 4.2 Notes Subscriptions.mp4



Enter a name for the subscription.

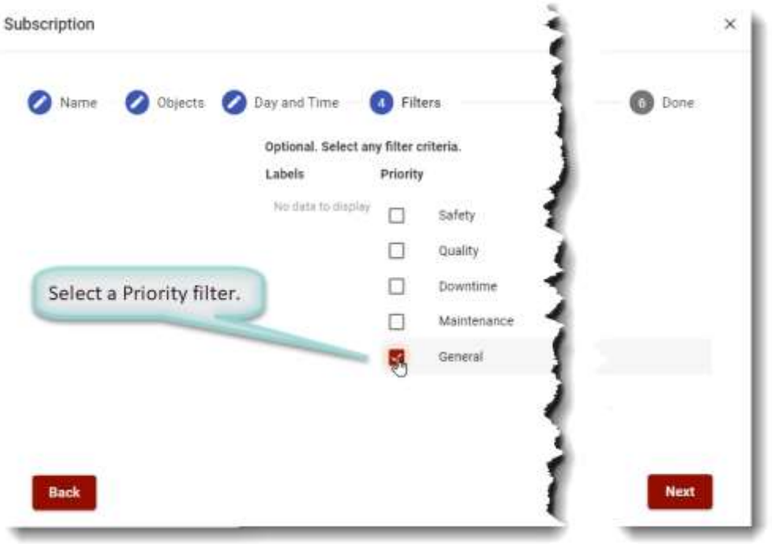


Select an object from the object tree.



Select the day and the time you would like to receive the subscription of the notes.

Select the priority of the note.

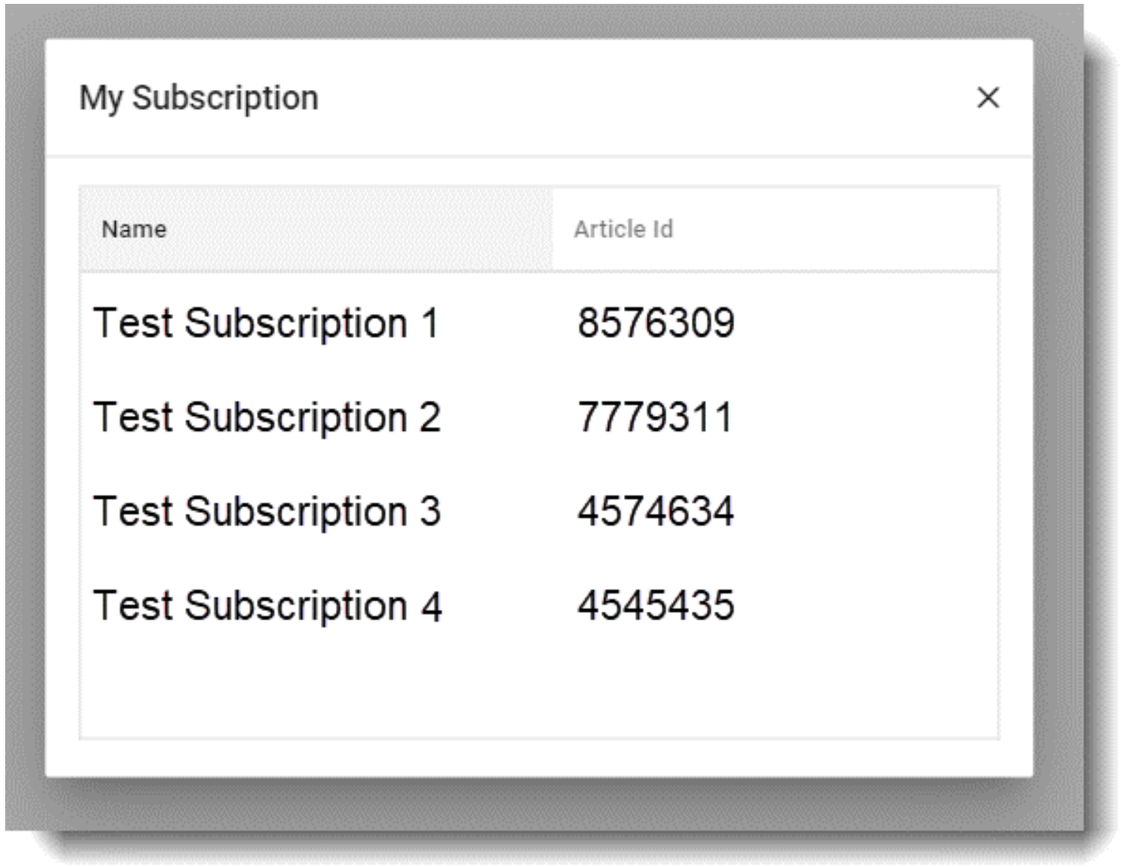


Enter an email of the recipients. You can enter several recipients, however, ensure you enter one email per line.

Review your input information, and then use the back button, to go back and make any corrections. When completed click the done button or the submit button.

Current Subscription

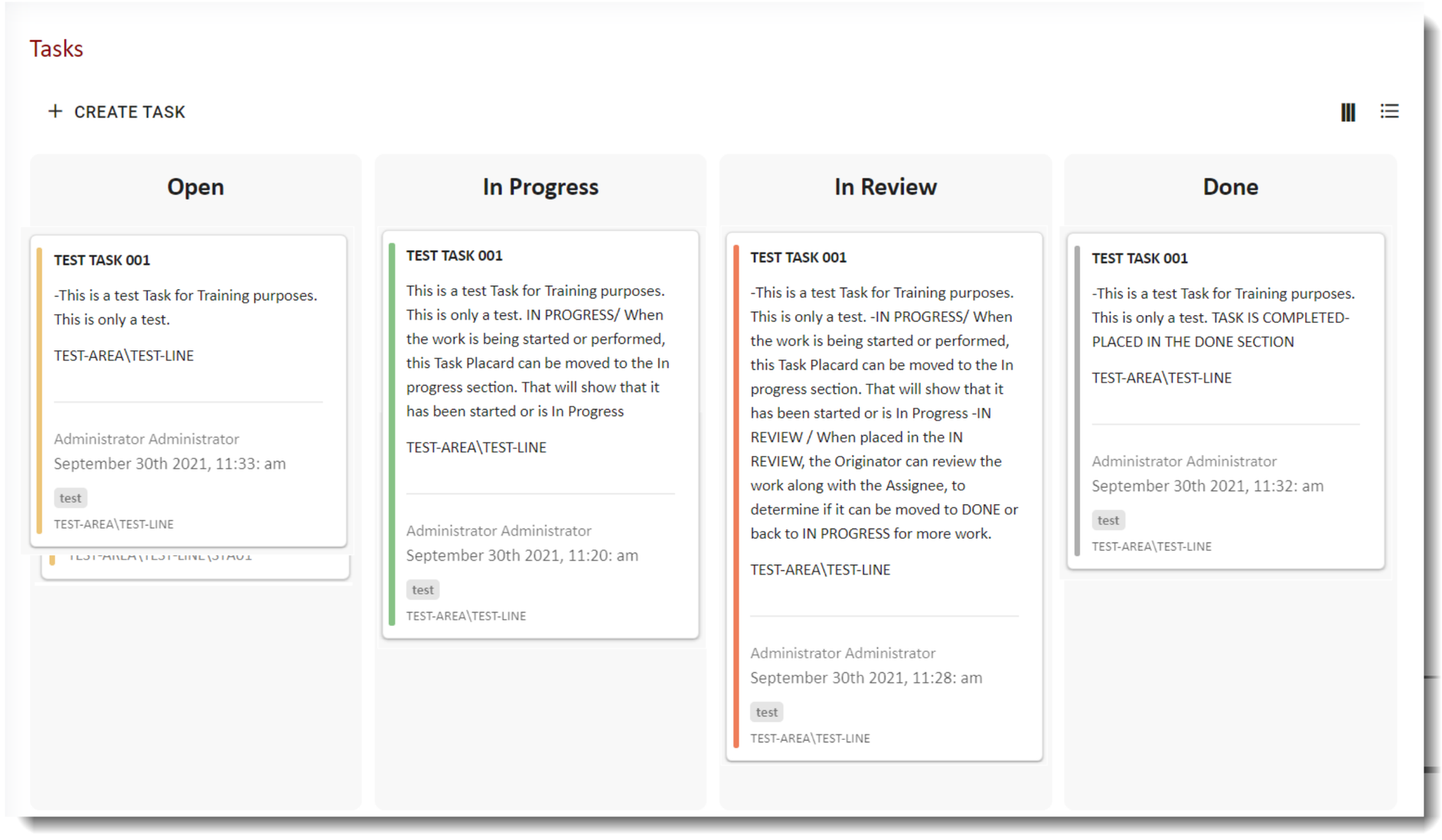
All the Note's subscriptions that are added to the Notes module will be displayed in the My Subscriptions window, with the name and the article number that it's related to.



Tasks

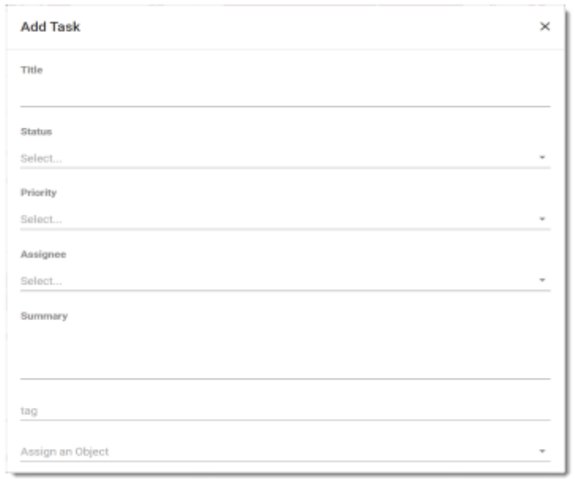
- Create a Task
- Open
- Progress
- Review
- Done

Below the Notes tab, is the Task Section tab. Upon opening, there will be a new window with a ***+Create Task button***, on the upper-right side of the Task window (below the Task title).

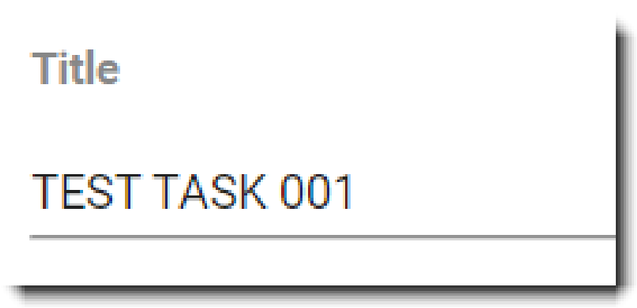


Create a Task

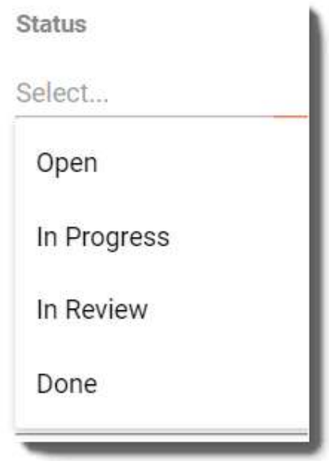
1. Click the Create Task button. This will open and Add Task window, as seen below. Use the editing dialogs and drop-downs to fill out all the necessary information.



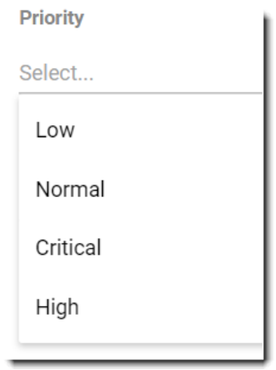
2. Input a name for the Title of the subscription. Make it brief, but descriptive. There will be a summary further down where you can explain the task.



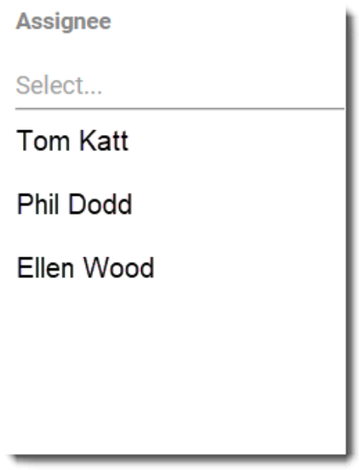
3. Under the status, if this is an initial task created, then click Open. Once a task is created it can be moved from Open, to In Progress, In Review, or Done.



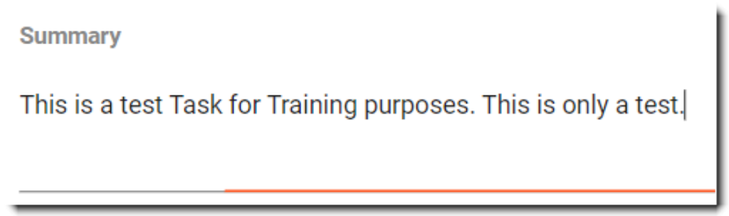
4. Now, select your priority. You can select from Low, Normal, Critical, or High. The priority will also be represented by a color-coded vertical line on the left side of the task placard.

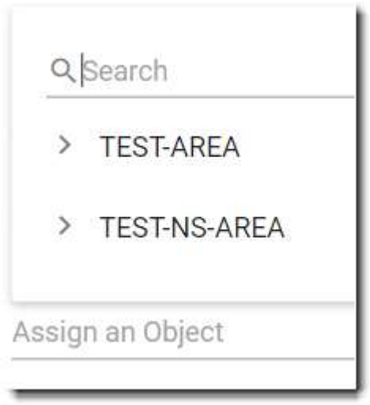
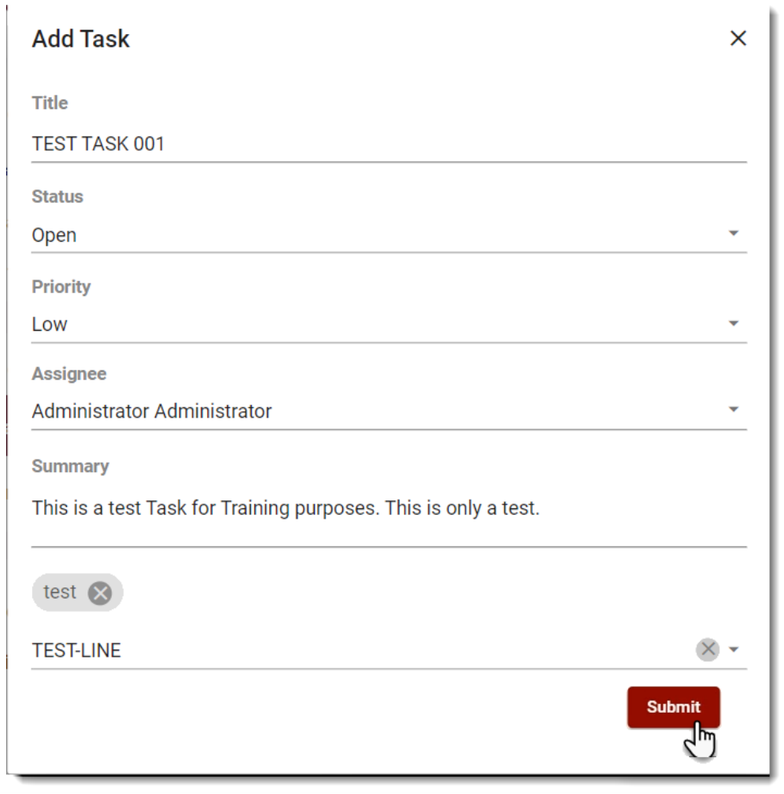


5. Select an assignee.



6. In the summary section and put a detailed description of the tasks you want to perform with all relevant information.



7. Add any tags needed to relate to the task at hand. 	**8. Now, select the Area, Line, Station, Asset object to link the Task to.** 	**9. Review what you entered the add task window. If everything is correct and click the submit button on the bottom right side.** 

Open

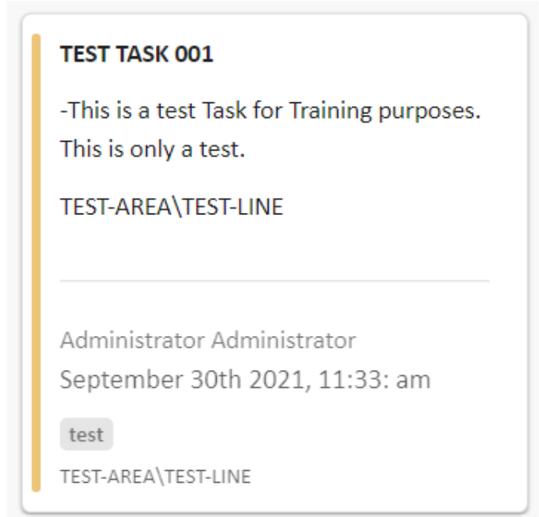
This column is separated by each user. For each user, the tasks are separated into different columns. The first column will be the Open task column. This is the assigned task section, in which no actions have been performed.

The place card will display the Name of the task, below the name will be the Summary description for the task.

Then it will show the article, or the object selected that it is based on.

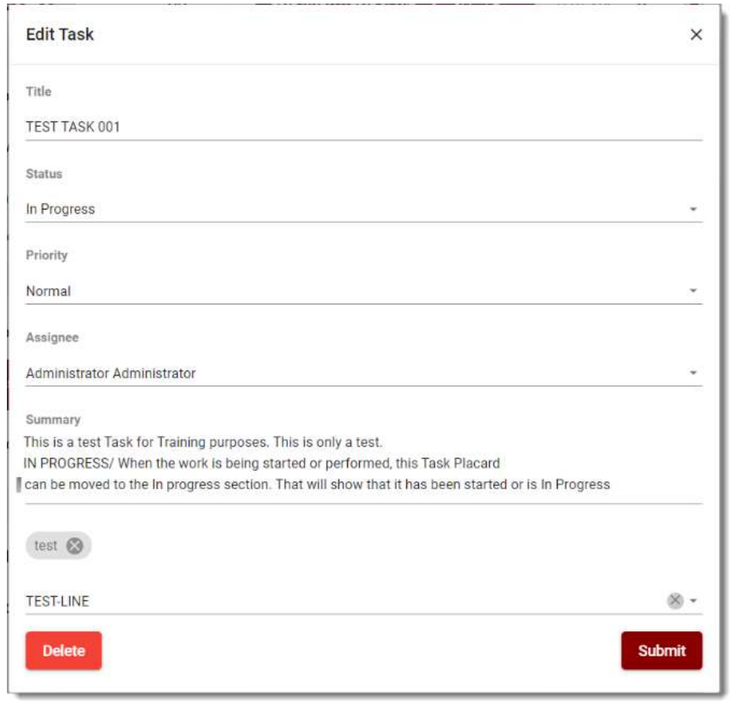
Then it will show the assigned recipient.

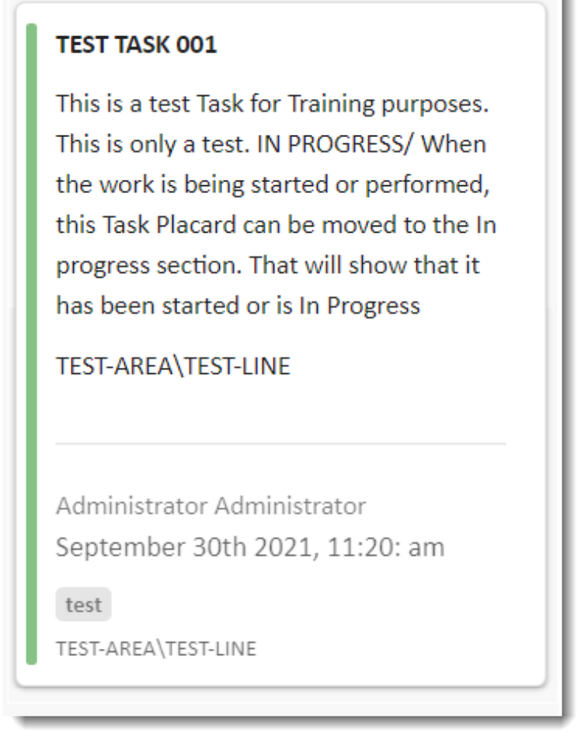
The date of the creation, tags or labels, and the address of the object or article are placed below.



Progress

Next is the In Progress section. This section will be where the task will be placed when it is being worked on or in progress. Once it is finished here. it could be placed in the next section, the "Review" section.





Review

From here the task will be reviewed.

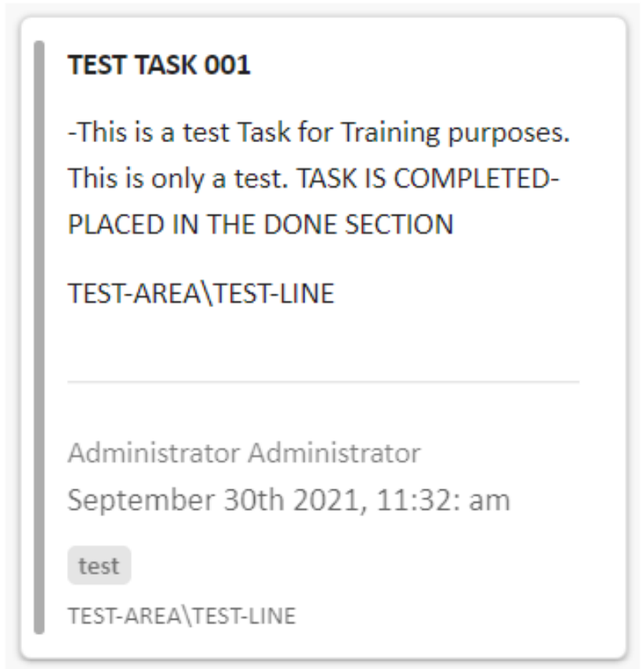
After the review, if everything is ready to be completed, this task can be moved to the done section simply by grabbing it and sliding it over to the done section.

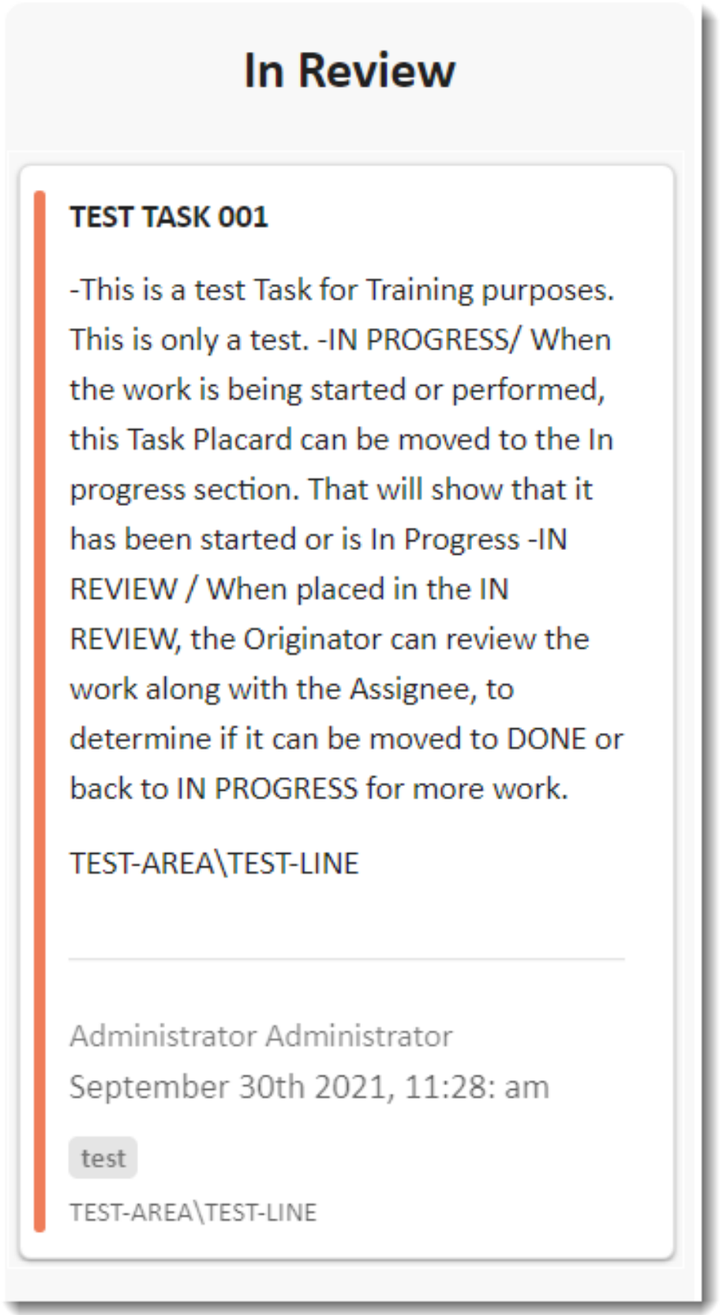
If the task is not finished and needs more work, it can be moved back to the In Progress section.

Done

The last section is the done section. When tasks are placed here, they are considered done or completed.

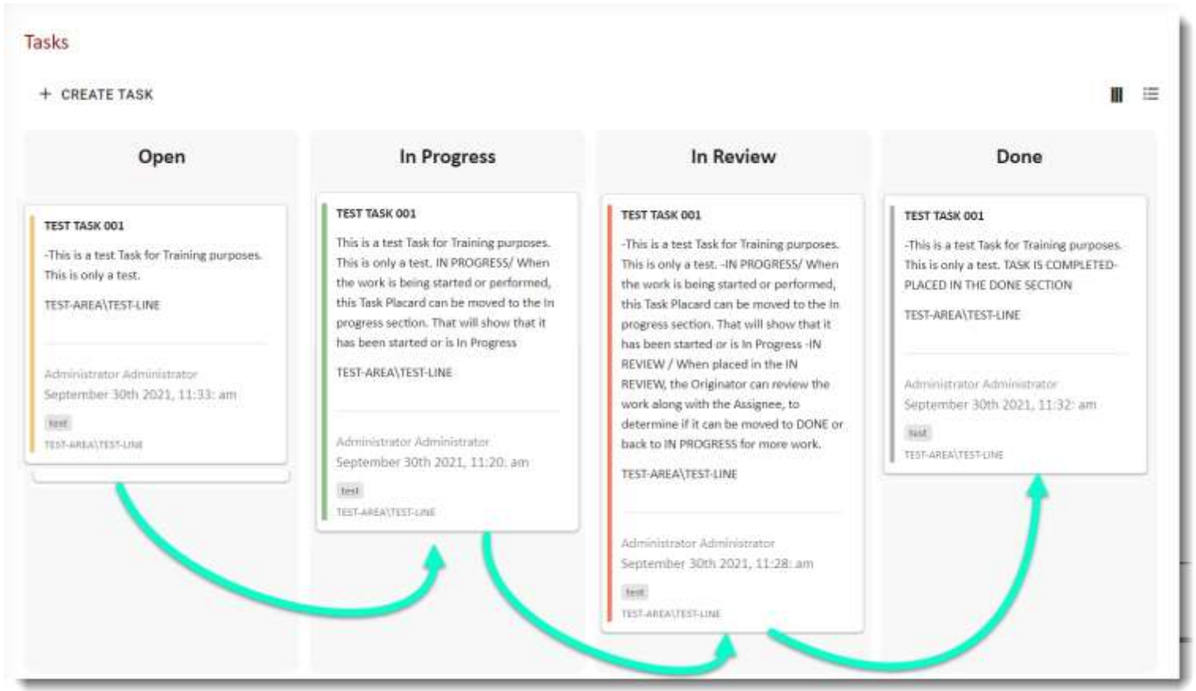
This can be reviewed to check on the status of a task. If something changes, in one of the tasks that are in the done column. it can be moved to the review or in progress areas. as needed.

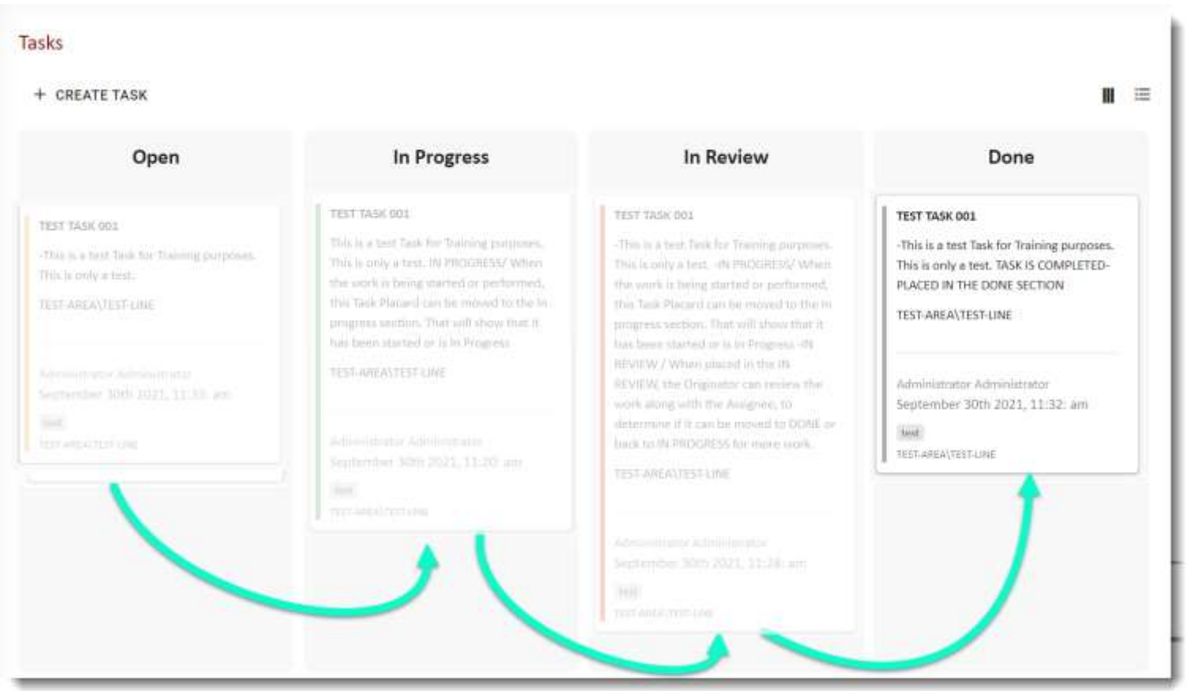




This illustration shows the same task at each status.

Normally, it would be shown only in one status.



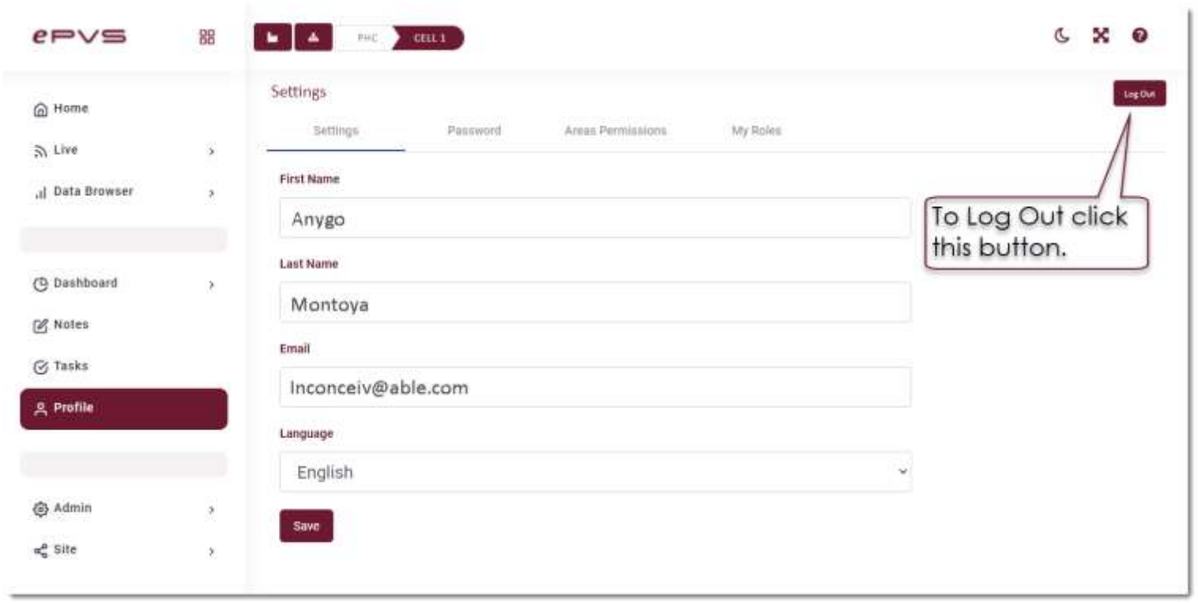


Profiles

- Settings
- Password
- Areas Permission
- My Roles

The profiles tab contains the information on the current user. It will contain the settings page which will we require a first and last name, and email address, and the language selection.

There's also an area for a password, area permissions, My Roles, notifications/messages, and a chat section.



Settings

Next is the settings button. Clicking on the settings button will open a small **Settings** window below. This window will display the current user information including the First name, Last name, email address (that ePVS will be tagged to), and a selection of languages.

Once it is completed or edited, click the Save button to finish.

Password

Next, is the password tab. When selecting the password option, the window will open and allow you to change your password. First input the current password in the edit box below. This verifies that you are the actual user.

Next input the new password. There is a password strength meter below this. This will inform you of the strength of your password. Once you selected and input a new password, input that password again in the new password confirmation box.

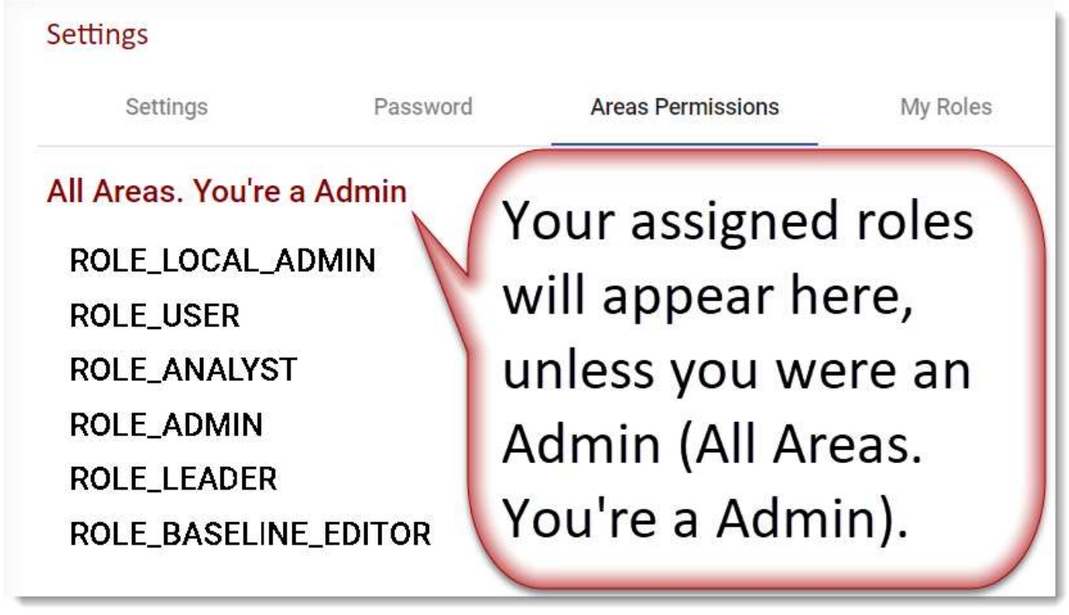
Once complete, click the save button.

Log Out

To Log Out of ePVS, simply go to the Profiles section an in the upper right-hand corner will be the Log Out button.

Areas Permission

The Areas Permission tab will display all the areas that you have access to it. If you are an admin, you have access to all areas. Access to all the areas is based upon the roles that are set up for the user. For example, a user will be allowed to access the dashboard's data browser and messages. But have some restrictions in some of these areas.



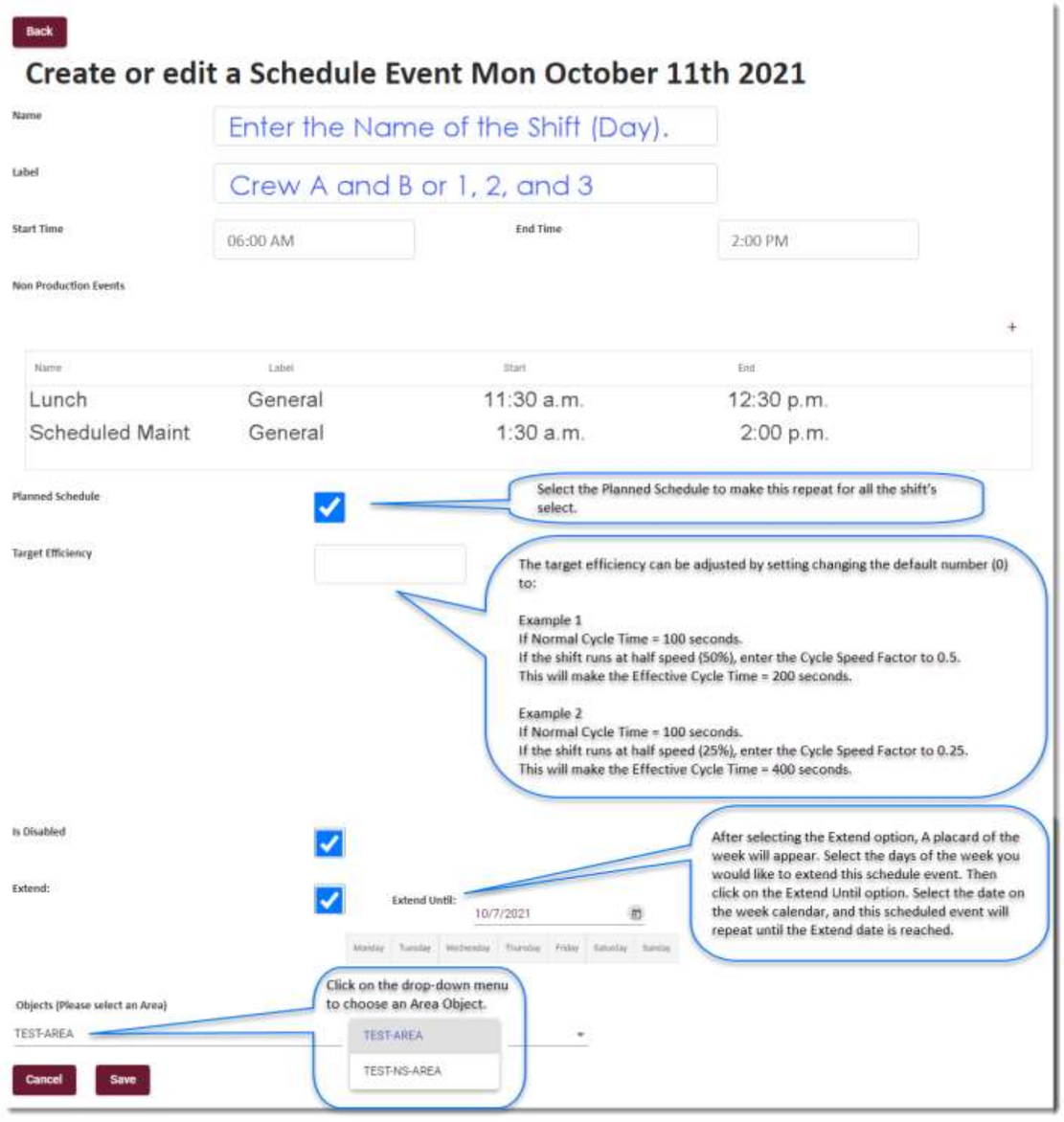
My Roles

The My Roles tab consists of the roles that you've been assigned by an administrator. Each level will gain access to certain or all sections of the EPVS module. The Scheduling module allows you to set up and configure a schedule for multiple shifts it also will allow you to schedule on production events such as preventative maintenance breaks and other reasons for a scheduled shutdown.

Scheduling Module

- Maintain Scheduled Shift
- Name
- Label
- Start Time / End Time
- Non-Production Event
- Planned Schedule
- Target Efficiency
- Is Disabled
- Extend
- Object

The Scheduling module allows you to set up and configure a schedule for multiple shifts it also will allow you to schedule on production events such as preventative maintenance breaks and other reasons for a scheduled shutdown.



Maintain Scheduled Shift

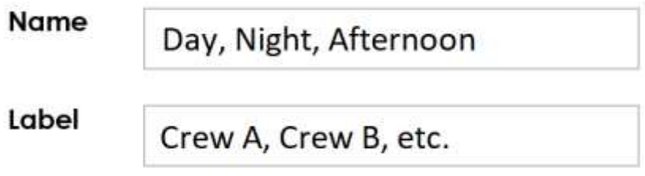
Name

Enter the **Name** of the Shift (**Day**).

Label

Some shifts have 2 or more other shifts, so you can enter which shift it is by labeling them **Crew A** and **B or 1**, **2**, and **3**.

Enter the Start Time for the shift by clicking inside the edit box. This will open a time clock menu. Click on the Hour to set, then click on the minutes. Select A.M. or P.M., then Click Save when you are done.



Start Time / End Time

Non-Production Event

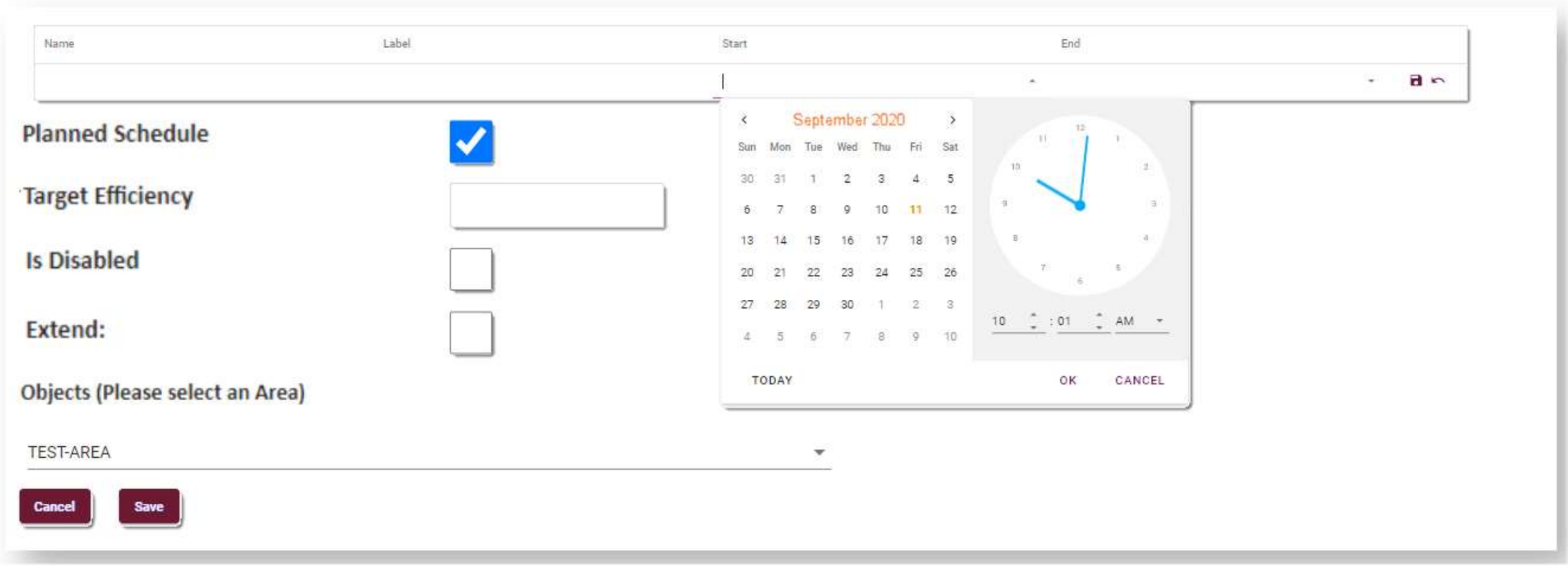
During a shift, it may be necessary to have a scheduled shutdown for Preventative Maintenance, Breaks, or a Shift change. For that, we have an area to input a Non-Production Event.

Non Production Events

Name	Label	Start	End
Lunch	General	12:00 p.m.	1:00 p.m.
S. Check	General	2:00 p.m.	2:30 p.m.
Shift Change	General	4:00 p.m.	4:30 p.m.

To set this up, start by clicking in the box under the NPE. Input the Name/Reason in that Edit box.

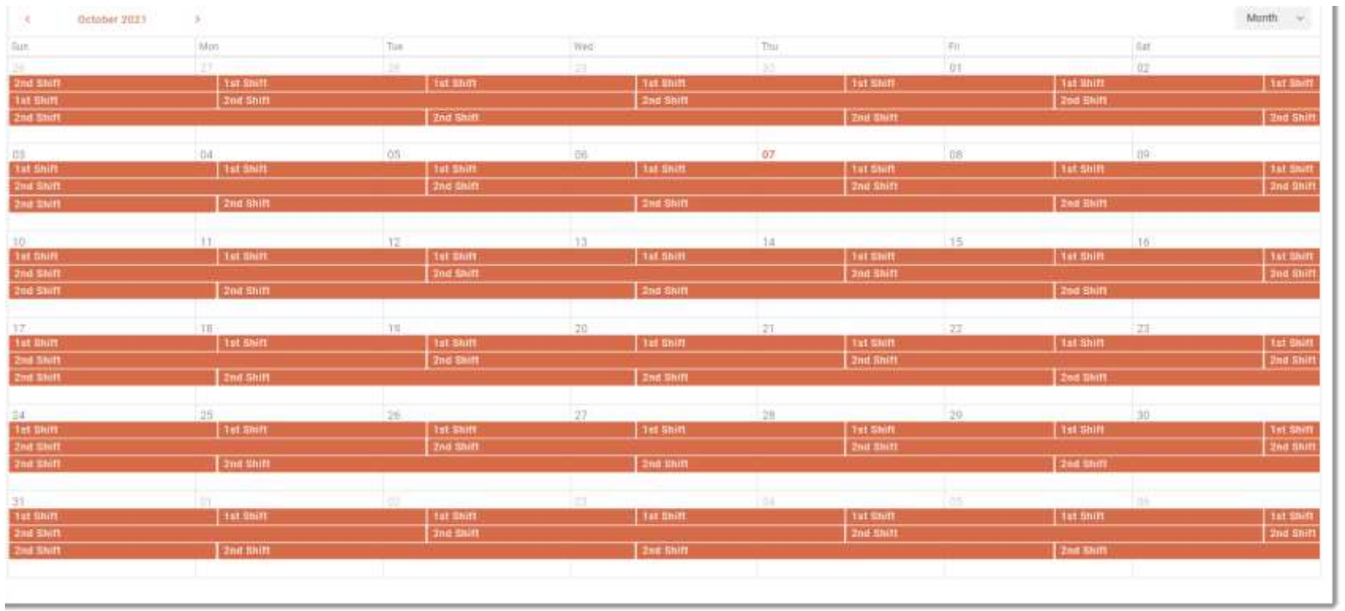
Click in the Start time box to open a Time Clock Menu. Use this to input the Start Time for the event. Now input the End time. Verify after inputting the times, that the correct time to the right of the Start and End time is correct as intended. If not, you can simply select the delete button or make a correction to either.



Planned Schedule

Select the Planned Schedule to make this repeat for all the shift's select.

Now select the Repeat Shift checkbox if you would like to add duplicate shifts throughout the week.



Target Efficiency

The target efficiency can be adjusted by setting changing the default number (0) to:

- **Example 1**
- **If Normal Cycle Time = 100 seconds.**
- **If the shift runs at half speed (50%), enter the Cycle Speed Factor to 0.5.**
- **This will make the Effective Cycle Time = 200 seconds.**

- **Example 2**
- **If Normal Cycle Time = 100 seconds.**
- **If the shift runs at quarter speed (25%), enter the Cycle Speed Factor to 0.25.**
- **This will make the Effective Cycle Time = 400 seconds.**

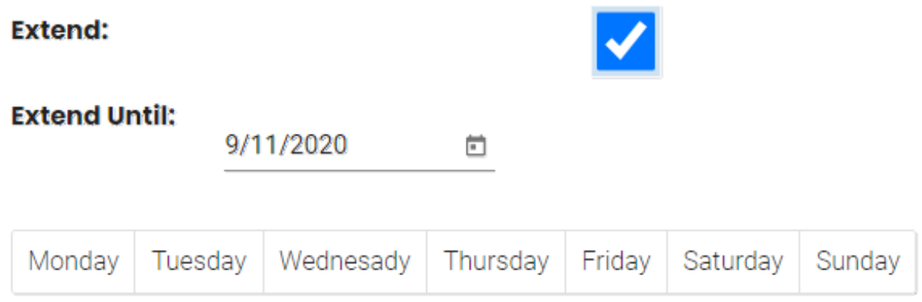
Is Disabled

The Is Disabled is used by engineering and development groups.

Extend

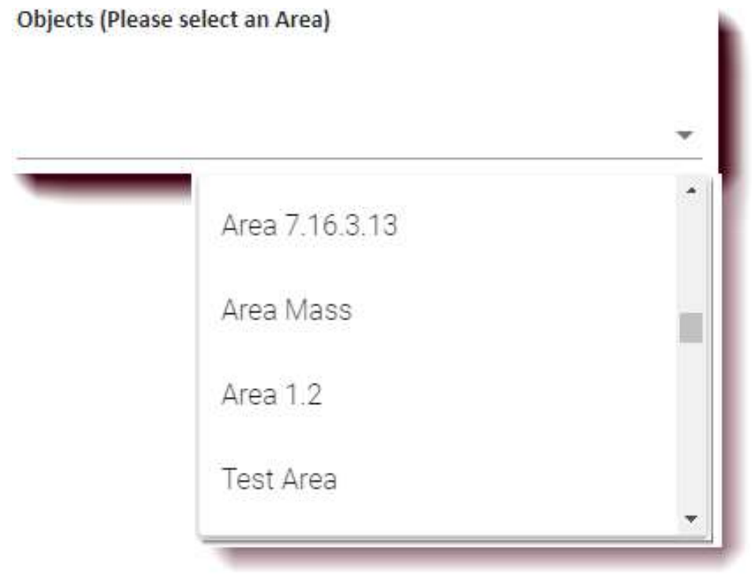
After selecting the **Extend** option, A placard of the week will appear. Select the days of the week you would like to extend this schedule event. Then click on the **Extend Until** option. Select the date on the week calendar, and this scheduled event will repeat until the Extend date is reached.

Review your entries, then click the **Save** button to finish.



Object

Select an area object from the drop-down menu. This schedule will represent this specific area.



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Trouble Shooting

See the Product Support section for available content at Beet Analytics Technology support website:
https://beetinc.atlassian.net/servicedesk/customer/portal/1

For more information or questions, go to the ePVS Customer Knowledge Base website:
https://beetinc.atlassian.net/wiki/spaces/BCKB/overview

See Troubleshooting articles on the ePVS Customer Knowledge Base website:
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EXCEPT FOR BEET ANALYTICS TECHNOLOGY'S LIABILITY UNDER SECTION 4.2 HEREOF, BEET ANALYTICS TECHNOLOGY'S AGGREGATE LIABILITY FOR DIRECT DAMAGES SHALL NOT EXCEED IN THE AGGREGATE THE AMOUNT CORRESPONDING TO FEES ACTUALLY PAID BY THE CONCERNED LICENSEE IN THE PRECEDING TWELVE (12) MONTH PERIOD PRIOR TO THE OCCURRENCE OF THE CAUSE OF ACTION GIVING RISE TO THE CLAIM FOR THE USE OF THE LICENSED SOFTWARE WHICH CAUSED THE DAMAGES. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, LICENSEE EXPRESSLY AND IRREVOCABLY WAIVES, AND BEET ANALYTICS TECHNOLOGY SHALL HAVE NO LIABILITY IN RESPECT OF, ANY AND ALL CLAIMS FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING WITHOUT LIMITATION CLAIMS FOR LOST PROFITS, BUSINESS INTERRUPTION AND LOSS OF DATA, THAT IN ANY WAY RELATE TO THIS EULA, LICENSED SOFTWARE, DOCUMENTATION OR SERVICES, WHETHER OR NOT BEET ANALYTICS TECHNOLOGY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND NOTWITHSTANDING THE FAILURE OF THE ESSENTIAL PURPOSE OF ANY REMEDY. LICENSEE WAIVES ANY AND ALL CLAIMS FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, FOR ANY REASON AND ON ANY BASIS, AGAINST ANY BEET ANALYTICS TECHNOLOGY PROVIDERS, OR.

All legal actions against Beet Analytics Technology must be filed with the appropriate judicial jurisdiction within two (2) years after the cause of action has arisen.

7. Term and Termination

7.1 Term: This EULA shall come into force on the Effective Date and shall remain in full force and effect for a period of three (3) years from its Effective Date, unless terminated earlier as provided hereunder. Each Affiliate Participation Agreement shall expire concurrently with the EULA, unless terminated earlier in accordance with the provisions herein.

7.2 Termination of the EULA a) Material Breach. Either Beet Analytics Technology or Licensee may terminate this EULA and/or any licenses granted under this EULA, if the other is in material breach of any of its obligations and has failed to remedy such breach within thirty (30) days of receipt of written notice. b) For Convenience. Licensee may terminate any license to any Licensed Software by providing written notice to Beet Analytics Technology. Such notice may be provided at any time for perpetual licenses. Notices for term licenses shall be provided sixty (60) days prior to the Anniversary Date of the License. Licensee shall not be entitled to any refund or credit for termination of a license for any reason.

7.3 Effect of Termination of the EULA a) Effect of Termination of the EULA for Non-Payment. If this EULA is terminated by Beet Analytics Technology for breach by Licensee of its payment obligations, termination of this EULA shall also result in the termination of (i) Licensee's rights to use any licenses for which payment has not been made; (ii) the right of Licensee and (iii) Licensee's right to submit any further Ordering Documents under this EULA. All licenses for which Licensee is not in breach of its obligations shall remain in full force and effect. b) Effect of Termination of the EULA for Other Breach. If this EULA is terminated by Beet Analytics Technology for material breach by Licensee of any other obligations hereunder, termination of this EULA shall also result in the termination of Licensee's rights to use all Licensed Software ordered hereunder.

7.4 Effect on Licensed Software of Termination or Expiration of the EULA and/or Affiliate Participation Agreement Upon expiration or termination of this EULA and/or any Affiliate Participation Agreement or any licenses granted hereunder as a result of Licensee's uncured material breach or by Licensee for convenience, Licensee shall immediately destroy or return all copies of the terminated or expired Licensed Software and associated Documentation in their entirety, and duly certify the same in writing to Beet Analytics Technology. Expiration or termination of this EULA and/or any Affiliate Participation Agreement or any license shall not relieve Licensee of its obligation to pay all fees that have accrued or are otherwise owed by Licensee under any Ordering Document. The expiration or termination will not prejudice the rights and remedies of the non-breaching parties.

7.5 Termination of Software Maintenance Services a) By Licensee: Licensee may terminate Software Maintenance Services for a Licensed Software subject to the following conditions: (i) Licensee notifies Beet Analytics Technology with at least sixty (60) days prior notice, and (ii) such termination shall apply to Software Maintenance Services related to all licenses of said Licensed Software held by Licensee under any license agreement then in force between Licensee and Beet Analytics. In such case for all such licenses described in the preceding sentence: (x) Licensee shall have no further obligation to pay the Software Maintenance Services fees related to the corresponding Licensed Software; (y) Licensee shall duly certify in writing to Beet Analytics Technology that all copies of all Releases of the Licensed Software other than those of the latest Release of the Licensed Software installed by Licensee, have been duly destroyed or returned to Beet Analytics Technology in their entirety; and (z) Software Maintenance Services for such Licensed Software will terminate at the expiration of the thirty (30) day notice

period. Beet Analytics Technology shall have no further obligation to provide any services or deliver any Release in support of any such licenses, except for providing license keys if necessary. Licensee may reinstate Software Maintenance Services, provided such reinstatement is activated for all licenses of a given Licensed Software held by Licensee under any license agreement then in force between Licensee and Beet Analytics Technology or any other Beet Analytics Technology, and Licensee pays all fees that would have been due in respect of Software Maintenance Services from the date of termination of Software Maintenance Services to the date of reinstatement of such Software Maintenance Services plus a reinstatement fee???. b) By Beet Analytics Technology: Beet Analytics Technology may terminate Software Maintenance Services related to all Licensed Software under this EULA if Licensee fails to pay Software Maintenance Services fees when due, upon thirty (30) days prior written notice. Fees related to Software Maintenance Services shall be due by Licensee until termination of such Software Maintenance Services.

8. Miscellaneous

8.1 Purchase Orders. Licensee's purchasing terms and conditions shall not in any way supersede, modify, vary or otherwise supplement the terms of this EULA.

8.2 Notices. All notices required hereunder shall be in writing, in English and shall be deemed to have been given (i) the date delivered in person or by reputable express courier service, (ii) three (3) days after sending the notice if sent by certified or registered mail, (iii) the date sent by confirmed facsimile, addressed to the parties at their addresses in the Ordering Documents, or at such other address as either party may designate to the other by notice served as hereby required, or contained in the relevant order form.

8.3 Force majeure. Neither Party hereto shall be liable for any default in the performance of its obligations under this EULA resulting from (i) a case of force majeure as defined by the law governing this EULA and the courts in such jurisdiction and (ii) the following causes: strikes (whether previously announced), war (declared or not), riots, governmental action, acts of terrorism, acts of God (fire, flood, earthquake, etc.).

8.4 Severability. If any part of this EULA is found to be invalid, illegal or unenforceable in any respect, the remaining provisions shall nevertheless be binding with the same effect as if the invalid, illegal or unenforceable part was originally deleted.

8.5 Transfer, Assignment & Subcontract. Licensee shall not subcontract, assign, delegate or otherwise transfer (including without limitation, by way of merger or contribution) any or all of its rights, duties, benefits or obligations under this EULA, or sublicense Licensed Software to any third party without Beet Analytics Technology's prior written approval. Any approved transfer of licenses to another country may be subject to an adjustment in price, as prices are specific to each country or region. This EULA shall be binding upon, and inure to the benefit of Beet Analytics Technology and its successors and assigns. Beet Analytics Technology may assign, delegate or otherwise transfer (including without limitation, by way of merger or contribution), any of its rights or obligations hereunder and/or otherwise subcontract any of its obligations, in whole or in part, to any Beet Analytics Technology and/or to any third party, without Licensee's consent.

8.6 Amendments & Non-Waiver. No waiver, alteration, modification, or cancellation of any of the provisions of this EULA or of any Affiliate Participation Agreement shall be binding unless made by written amendment signed by all parties. A party's failure at any time or times to require performance of any provision shall in no manner affect its right at a later time to enforce such provision.

8.7 Audit. During the term of this EULA and for a period of three (3) years thereafter, Licensee shall establish and maintain accurate information records relating to the use, and when applicable, destruction of the Licensed Software. Beet Analytics Technology shall have the right at any time, at its own expense and under reasonable conditions of time and place, to audit and copy these records. Licensee also hereby authorizes Beet Analytics Technology to verify its compliance with the terms of the EULA. For such purpose, Beet Analytics Technology may conduct an audit on Licensee's premises during normal business hours, in a manner that minimizes disruption to its business. Beet Analytics Technology may require Licensee to provide it or any third party Beet Analytics Technology engages to conduct such verification, with machine access, copies of system tools outputs, or other electronic or hard copy system information as appropriate. If the audit reveals unauthorized use of any Licensed Software, Licensee shall promptly pay to Beet Analytics Technology any amounts owed as a result of such unauthorized use at the then current list price. In the event such unauthorized use is five percent or greater of Licensee's authorized licenses for the applicable Licensed Software, then in addition to Licensee paying the applicable charges, Licensee shall reimburse Beet Analytics Technology for the cost of such audit. In a joint effort to prevent software piracy, Licensee shall comply with any changes in the Licensed Software licensing security mechanism that aims at preventing fraud. By invoking the rights and procedures described above, Beet Analytics Technology does not waive its rights to enforce this EULA or to protect its intellectual property by any other means permitted by law.

8.8 Export. Export to Licensee of Licensed Software and Documentation is subject to all applicable countries' export and re-export laws and regulations. Licensee shall not export or re-export, either directly or indirectly, Licensed Software when such export or re-export requires an export license or other governmental approval without first obtaining such license or approval. Licensee hereby certifies to Beet Analytics Technology that the Licensed Software ordered hereunder will not be used in violation of any applicable export laws, including for proliferation of any nuclear, chemical or biological weapons or missile delivery systems and will not be diverted. Beet Analytics Technology may terminate this EULA and all licenses hereunder upon written notice if Licensee violates these provisions.

8.9 Entire EULA; Order of Precedence. These General Terms together with the Ordering Documents comprise the complete agreement between the parties relating to the subject matter hereof and supersede all prior and contemporaneous proposals, agreements, understandings, representations, purchase orders and communications, whether oral or written. If there is a discrepancy, inconsistency or contradiction between any Licensed Software and terms contained herein, the provisions of the corresponding Licensed Software Terms shall prevail, but solely with respect to those Licensed Software described in such Licensed Software Terms. Licensee acknowledges that it has full knowledge of all terms herein and incorporated herein, and agrees to be bound by and to comply with such terms and has not relied on the future availability of functionality or product updates with respect to any Licensed Software in entering into this EULA thereunder. The terms of this EULA shall have no force or effect with respect to any claim based on the use of any intellectual property rights of Beet Analytics Technology outside the scope of the licenses expressly granted herein.

8.10 Governing law and jurisdiction. This EULA shall be governed and construed in accordance with the laws of, and the legal relations between the parties shall be determined in accordance with, the laws of State of Michigan, United States of America, without regard to any conflict of laws principles and excluding application of the United Nations Convention for the International Sale of Goods. The parties irrevocably waive all rights to trial by jury for any such litigation between them. All actions and proceedings arising out of or relating to this EULA shall be exclusively heard and determined by the Courts of the State of Michigan, United States of America. Notwithstanding the foregoing, Beet Analytics Technology may, in its sole discretion, bring any claim or dispute (including but not limited to seeking injunctive relief and/or equitable remedies) arising out of, or in connection with the validity, interpretation and/or performance of this EULA before any courts and or administrative authorities having jurisdiction over the subject matter of any such claim or dispute. This provision shall survive any termination or expiration of the EULA. Licensee acknowledges and agrees that the paragraph immediately above shall not prevent, restrict or otherwise limit in any manner, Beet Analytics Technology's rights to seek equitable remedies, including injunctive relief before any competent court in any jurisdiction.

8.11 Survival. The following sections of these General Terms shall survive termination thereof: "License Limitations", "Intellectual Property", "Warranties, Limitations and Disclaimers", "Limitation of Liability", "Term and Termination", "Miscellaneous", "Glossary"..

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8.13 Counterparts. This EULA may be executed simultaneously in two (2) or more counterparts, each of which will be considered an original, but all of which together will constitute one and the same instrument.

9. Glossary

"Authorized Users" means (i) the employees of Licensee, including employees of Licensee's directly and indirectly wholly-owned subsidiaries within the USA that are controlled by Licensee and unincorporated divisions of Licensee, but not employees of other legal entities (including employees of any legal entity that is a part of a group of companies affiliated with Licensee, but that do not qualify as direct or indirect wholly owned subsidiaries of Licensee), and (ii) Licensee's consultants, agents and contractors who are working on Licensee's premises, provided they are not competitors of Beet Analytics Technology and they have agreed in writing to restrictions on the use of the Software and obligations of confidentiality no less stringent than those set forth in this Agreement. For the purpose of this definition, "controlled" is defined as the direct or indirect ownership of more than 50% of the voting securities of an affiliate. Licensee shall hold Beet Analytics Technology harmless and shall indemnify Beet Analytics Technology for any loss, cost, damage or expense (including reasonable attorney's fees) incurred by Beet Analytics Technology as a result of the failure by an Authorized User to abide by the terms of this Agreement. Documentation means, at any time, the current user documentation in any form or media as delivered together with the Licensed Software by Beet Analytics Technology for use in connection with Licensed Software.

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