



EcoStruxure Asset Advisor for Electrical Distribution

Release Notes

EcoStruxure offers IoT-enabled architecture and platform.

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10/2024



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Safety Information

Important Information

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

About the Book

Document Scope

EcoStruxure Asset Advisor web portal (EAA web portal) is a key technical enabler for multiple service offers and other offer packages that are part of the services, apps and analytics top layer of EcoStruxure™ architecture. Main offers included are:

- EcoStruxure Asset Advisor for Electrical Distribution (EAA Preventive, EAA Predictive)
- EcoStruxure Asset Advisor for Rotating Equipment (EAA Predictive)
- EcoStruxure Service Plan for Asset Management (ESP Predict, ESP Plus, ESP Prime, ESP Prevent)
- Digital Monitoring Fire Prevention
- EcoStruxure Service Plan for Drives (ESP Predict, ESP Prime)
- EcoStruxure Service Plan for Power Management and Asset Management
- EcoStruxure Service Plan for Power and Process (EAA Predictive)
- Asset Management as a Service (AMaaS) pilot offer package (EAA Predictive)
- MVO Digital Active offer for natively connected products (ESP Prevent, ESP Predict, ESP Plus, ESP Prime)
- EcoCare (Essential, Advanced, Advanced+)

This document provides users with the history of software versions of the EcoStruxure Asset Advisor web portal from version 7.0, including updates for notification on the EAA mobile application which is a complementary channel to make notifications available everywhere.

Validity Note

This document applies to EcoStruxure Asset Advisor (EAA) web portal releases that went live from 2022 onwards.

The EAA web portal is also known as One Monitoring Dashboard (OMD).

Online Information

The information contained in this guide is likely to be updated at any time. Schneider Electric strongly recommends that you have the most recent and up-to-date version available on www.se.com/ww/en/download.

The technical characteristics of the devices described in this guide also appear online. To access the information online, go to the Schneider Electric home page at www.se.com.

Related Documents

Title of documentation	Reference number
<i>EcoStruxure Panel Server - User Guide</i>	DOCA0172DE DOCA0172EN DOCA0172ES DOCA0172FR DOCA0172IT DOCA0172PT
<i>EcoStruxure Panel Server Universal - Firmware Release Notes</i>	DOCA0178DE DOCA0178EN DOCA0178ES DOCA0178FR DOCA0178IT DOCA0178PT
<i>EcoStruxure Panel Server Entry - Firmware Release Notes</i>	DOCA0249DE DOCA0249EN DOCA0249ES DOCA0249FR DOCA0249IT DOCA0249PT

To find documents online, visit the Schneider Electric download center (www.se.com/ww/en/download/).

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EcoStruxure Asset Advisor for Electrical Distribution

EcoStruxure Master Range

EcoStruxure is Schneider Electric's IoT-enabled, plug-and-play, open, interoperable architecture and platform, in Homes, Buildings, Data Centers, Infrastructure and Industries. Innovation at Every Level from Connected Products to Edge Control, and Apps, Analytics and Services.

Presentation

EcoStruxure Asset Advisor (EAA) for Electrical Distribution and variants are managed digital services to mitigate the risk of unplanned downtime in critical equipment along an entire electrical system. It brings a proactive approach to asset performance management, combining IoT and cloud-based technologies with Schneider Electric expertise, to improve business continuity.

EcoStruxure Asset Advisor web portal is a suite of cloud-based applications and remote services for asset management of critical electrical distribution equipment. It evaluates live data from critical connected assets and applies advanced analytics to identify potential failure modes. Schneider Electric EAA experts from Connected Services Hub (CSH) provide actionable web dashboards, timely reports, and recommendations with operational support for users on-site. For information about the Asset Advisor offer, refer to the [webpage](#).

EAA Web Portal

The EAA web portal is the user interface to visualize all activity gathered from field devices, indicators and indexes computed by analytics, tickets managed by CSH experts, and reports. To access the EAA web portal, go to the [EcoStruxure Asset Advisor home page](#).

EAA Mobile Application

The EAA mobile application complements the web portal by making notifications available to maintenance personnel on duty.

The mobile application can be installed on a smartphone by downloading the application from:

- Google Play Store for Android smartphones



- App Store for iOS smartphones



Service Levels

EAA web portal supports multiple services offers and their tiered levels. There are common functionalities delivered on each marketed offer level, and specific functionalities on some of the offers. The following table describes the overview of features available. Higher level offers include all features of corresponding entry levels plus additional features.

Features		Service offers										
		EAA Preventive	EAA Predictive	Digital Monitoring Fire Prevention	ESP Prevent	ESP Predict	ESP Plus	ESP Prime	ESP Power & Asset Management	EcoCare Essential	EcoCare Advanced	EcoCare+ Advanced
Support	24/7 remote support and technical assistance (remote expertise)	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
	On-site emergency technician dispatching (local SLA sensor)	–	–	Option	✓	✓	✓	✓	✓	✓	✓	✓
Maintenance	Preventive scheduled maintenance, including asset diagnostic (Prodiag™ tools)	–	–	–	–	–	✓	✓	✓	Option	Option	✓
	On-site technician intervention (troubleshooting or unscheduled preventive, including labor and travel)	–	–	–	–	–	–	✓	✓	–	–	✓
	Spare parts	–	–	–	–	–	–	Option	Option	Option	Option	Option
Monitoring	On-line customer portal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ambient monitoring & alarming (CL110)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Asset data monitoring and alarming (protection relay)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Electric fire prevention (electrical connection and insulation TH110 + HeatTag sensors)	Option	✓	✓	Option	✓	Option	✓	✓	✓	✓	✓
	Asset health monitoring and diagnostics (predictive analytics)	–	✓	–	–	✓	–	✓	✓	–	✓	✓
	Advanced transformer monitoring	–	–	–	–	Option	–	Option	Option	–	Option	Option
Optimize	Monthly automated asset data reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Advanced asset management and power quality consultancy	–	✓	–	–	✓	–	✓	✓	–	✓	✓
	Dynamic asset maintenance plan recommendation	–	–	–	–	With Prodiag option	✓	✓	✓	–	–	✓
	Power and asset management	–	–	–	–	–	–	–	✓	–	–	–

Release History

Date	Web portal version	Availability
June 2024	7.19, 7.20 and 7.21	Published in the cloud
January 2024	7.16, 7.17 and 7.18	Published in the cloud
October 2023	7.13, 7.14 and 7.15	Published in the cloud
July 2023	7.9, 7.10, 7.11 and 7.12	Published in the cloud
April 2023	7.6, 7.7 and 7.8	Published in the cloud
December 2022	7.4 and 7.5	Published in the cloud
October 2022	7.3	Published in the cloud
July 2022	7.2	Published in the cloud
May 2022	7.1	Published in the cloud
March 2022	7.0	Published in the cloud

EAA Web Portal Version 7.21

EAA Web Portal New Features

Oil Transformer Partial Health Index

When oil transformer is fitted with an ETE sensor, specific online monitoring is enabled. Additional analytics are received from ETE application (cloud-to-cloud integration) and are displayed on **Advanced Monitoring** tab.

For oil transformer asset type, the partial health index (PHI) calculation takes into account the Aging index received from ETE technical device for the following indicators:

- Health index oil calendar aging
- Health index winding insulation aging

PHI calculation and ETE application run compatible assessments.

The following table illustrates the adjusted values displayed after aging indexes from ETE device are taken into account. For example, for a given asset, if PHI for winding insulation aging is scored 3 by the EAA web portal, while Aging index received from ETE application is 4, the result displayed is 4 (value indicated in the following table, at the intersection of column 3 and row 4).

PHI	1	2	3	4	5
ETE					
1	1	2	3	4	5
2	1	2	3	4	5
3	1	2	3	4	5
4	2	3	4	5	5
5	2	3	4	5	5

Maintenance Mode Filtering

Added filtering in **Assets in maintenance** tab.

You can filter by the following criteria:

- Asset functional name: type the name of the asset in the box
- Status: select a status from the options
- Start or end date: set a date in one or other box to see events before or after the set date

Click the **Apply Filter** button to start filtering.

The screenshot shows the 'Assets in maintenance' tab in the EAA Web Portal. At the top, it displays 'SE - Leeds Factory (Sirius)' and 'Assets under monitoring: 31'. Below this is a navigation bar with tabs: Overview, Communication monitoring, Electrical view, Site events, Insights, Reports, Notebook, Maintenance, Partial discharge, and Assets in maintenance (highlighted in green). The main content area has three filter sections: 'Asset functional name' with a text box containing 'MV', 'Status' with radio buttons for 'Planned', 'Ongoing', 'Finished', and 'Cancelled', and 'Date' with 'Start date' and 'End date' fields set to 'mm/dd/yyyy'. An 'Apply Filter' button is to the right. Below the filters is a table with columns: Event date, Requester, State, Asset(s), Start date, and End date. The table contains one row: Event date '2024-02-23 07:24:19', Requester 'Malappa C', State 'Finished', Asset(s) 'MV Cubicle PD Test', Start date '2024-02-25 07:00:00', and End date '2024-02-26 09:30:00'. A tooltip 'MV Cubicle PD Test' is visible over the 'Asset(s)' column.

Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

Reports Improvements

Fire Prevention Report

The Fire prevention report is now available in the following languages in addition to English:

- French
- Spanish
- Italian

Minor Improvements

- Improvement in display of pop-up window for ticket details, with more space when one or more files are attached.
- Existing bugs have been fixed. Alarm and notification reports are now available to generate for Preventive sites.
- While uploading a report in OMD, a loading message is displayed and clicking on buttons is temporarily disabled. A message is displayed when the report is successfully uploaded and buttons are clickable again.
- Loading message is displayed after clicking **Contact support** button to indicate that a query to retrieve data is running.
- Correction of widget title **Total harmonic distortion current/voltage** in multiple asset types.

Notifications on EAA Mobile Application

Update to activate/deactivate the action buttons when the site related to one ticket alarm type has the flow to AMS activated/deactivated.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.20

EAA Web Portal New Features

Energy Efficiency for Motors

The energy efficiency feature is added for LV and MV motors.

New Energy Efficiency Properties and Indicators for Motors

The following properties are added for MV motors:

- Number of pairs of poles
- Rated efficiency
- Rated frequency
- Rated power factor
- Duty

The following properties are added for both MV and LV motors:

- Starting method
- Application
- Supply frequency

The following indicators are added in Motors data model:

- Equipment loss power
- Confidence levels for:
 - running time
 - energy consumption
 - emissions from losses
 - estimated efficiency
 - estimated losses
- Equipment energy losses
- Useful energy
- Efficiency
- CO₂ footprint
- Losses CO₂ footprint

New Tab for Energy Efficiency

A new tab is added for Energy Efficiency, to be activated during motor configuration. Once activated it displays two sections:

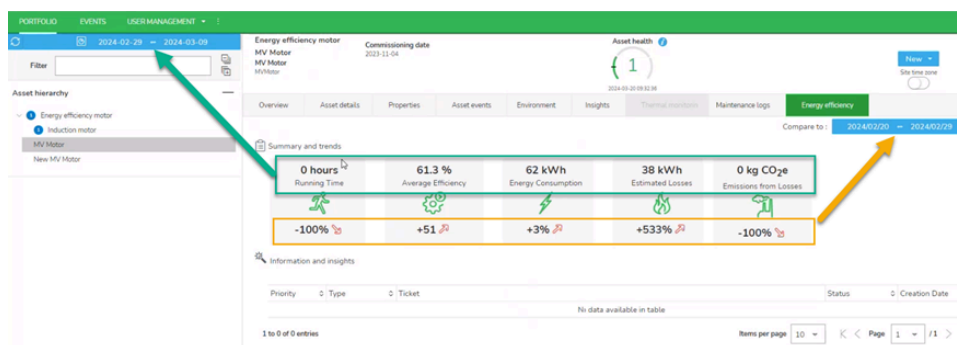
- Summary and Trends:
 - Range selector: allows you to select the reference period to compare the period selected at the asset level. You must select the same length of period as the one selected at the asset level.
 - The following widgets are added:
 - Running time: measured indicator of number of operating hours
 - Average efficiency: ratio of Total energy consumption and Energy losses
 - Energy consumption: measured indicator
 - Estimated losses: computed indicator
 - Losses in CO₂ footprint equivalence: computed indicator

For each widget, the display includes:

- At the top, the indicator value for the range selected
- In the middle, an icon illustrating the indicator
- At the bottom, the trend of the indicator for the reference time selected, as a percentage, with an arrow showing the direction of the trend.

NOTE: If the indicator is not computed, the widget is not displayed.

- Information and Insights: This section contains all tickets related to the Energy efficiency tab with open status. A new ticket category is created for Energy efficiency rules.



Improvements to EAA Web Portal

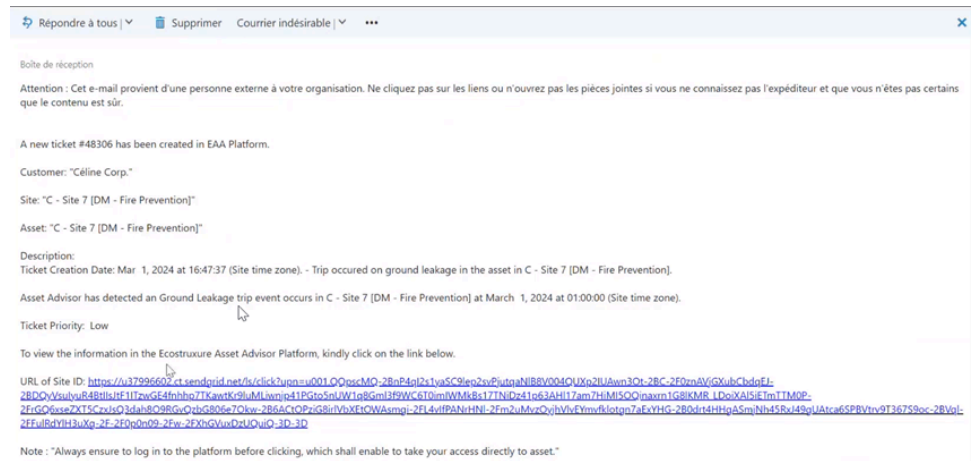
Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

Link to Asset/Site Added to Tickets

Where relevant, ticket descriptions include:

- A URL to the site/asset concerned
- A message informing you that you can copy and paste the URL to a browser to go directly to the EAA platform to see information related to the asset/site
- A note reminding you to log into the EAA platform before following the link

If you have configured e-mail notifications, the e-mail will contain a live link to click.



Oil Transformer Assembly Improvement

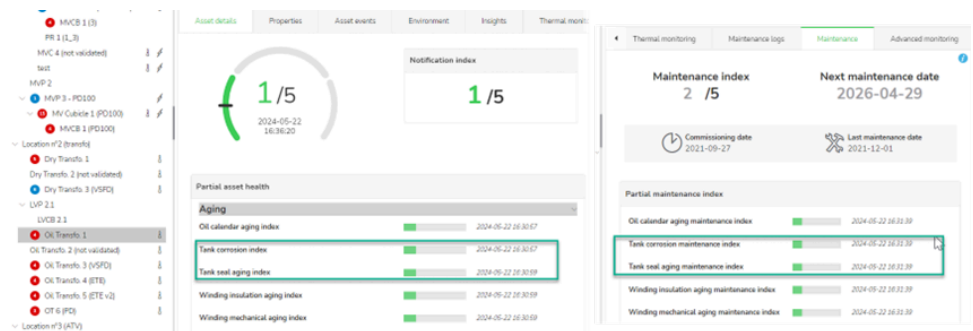
A new assembly, **Tank hermetically sealed**, can be added to the configuration for oil transformer asset type (by default not selected).

The following indicators are added to the GAF algorithm:

- **Tank fatigue**
- **Tank seal aging**

Tank fatigue and **Tank seal aging** are included in the calculation for the following indexes:

- **Partial health index**
- **Partial maintenance index**



Minor Oil Transformer Model Evolution

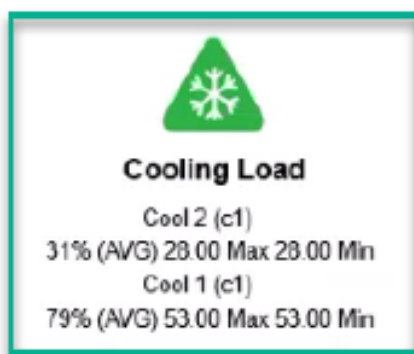
- An indicator is added: **Absolute water content in oil**, measured in parts per million (ppm).
The indicator is listed by default for all oil transformers, although it is not mandatory.
- The name of the indicator **Moisture content Rs** is changed to **Relative water content in oil**, (displayed as a percentage).
- GAF aging uses the new indicator **Absolute water content in oil**, which replaces the indicator **Relative water content in oil**.
- Unit for indicator **C2H2 dissolved into oil** is updated to ppm.
- Unit for indicator **H2 dissolved into oil** is updated to ppm.

Reports Improvements

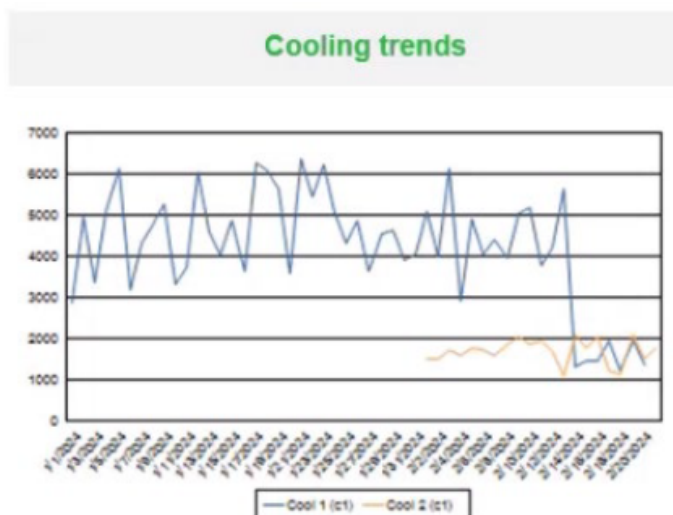
- The following new asset types added to report:
 - Battery bank
 - Container
 - Cooling unit

These new asset types are included in the following reports, with an indication of the number of each asset type connected to the site displayed in the Summary context block of the report:

- Quarterly MDC** report
 - Electric fire prevention** report
- The **Quarterly MDC** report contains the following new information:
 - Cooling load.** The following values are reported for each cooling unit:
 - Minimum (**Min**) value of cooling load
 - Maximum (**Max**) value of cooling load
 - Average (**AVG**) cooling load as a percentage



- A graph showing **Cooling trends** of cooling demand for each cooling unit along the report time period



Minor Improvements

- Tickets can be filtered by **Source**. This filter is available for screens at following levels:
 - Portfolio
 - Site
 - Asset

- Algorithms updated to compute **Monitoring level** for **Electric Fire Prevention** index. The new rule includes data starting one day before the last time the algorithm ran.
- Correction of typos and descriptions in maintenance mode to improve user experience

Notifications on EAA Mobile Application

No updates on mobile application delivered for this release.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.19

EAA Web Portal New Features

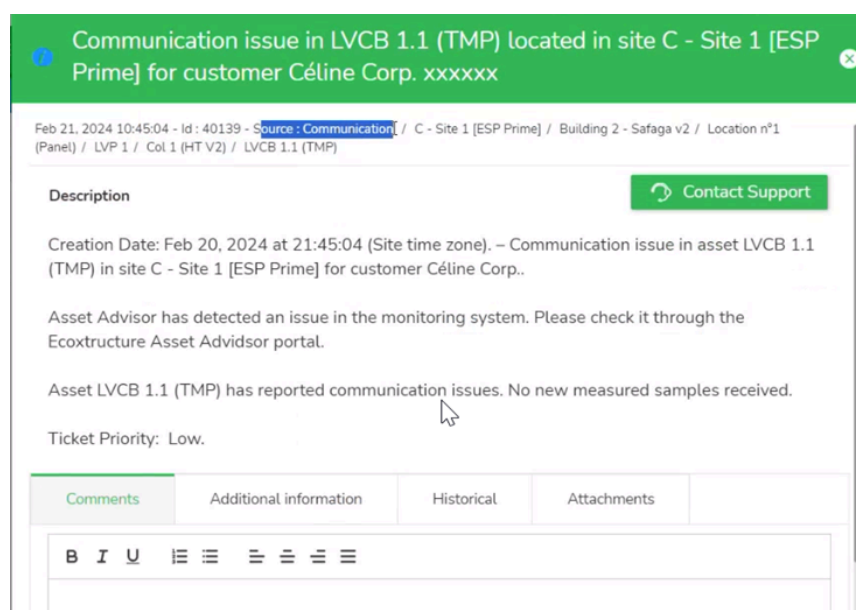
Ticket Categorization

Ticket categorization helps to identify what type of rule is running behind tickets triggered by events.

- The following categories are added:
 - Communication
 - Thresholds

The new categories are added in the **Source** list when creating or editing a ticket template.

- Improved visibility with new filter criteria to select events in **OMD** (available in **Portfolio** events, **Site** events and **Asset** events tabs). The following features are available:
 - Filtering by category assigned to event rule
 - Filtering category added for **DCS Advisor** (to replace checkbox)
 - No predefined options, all filters are listed by default
 - When one or more categories are selected, click **Apply** to filter data
- Improvement in event screens which now include category or source of ticket



Motor Greasing Algorithms

Two new algorithms for LV and MV motors:

- Bearing greasing indicator algorithm to calculate the following indicators:
 - Bearing end of life alarm
 - Bearing end of life info
 - Bearing regreasing time alarm
 - Bearing regreasing time info

- Alarm algorithm monitors alarm indicators for changes from false to true status.

When a change is detected, one of the following alarms is raised and CSH is notified:

- End of life information: Low severity
- Bearing regreasing time alarm: High severity

The following new settings are available in **OMD Properties** tab for MV and LV Motor configuration:

- Bearing lifetime
- Presence regreasing device
- Regreasing interval time

Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

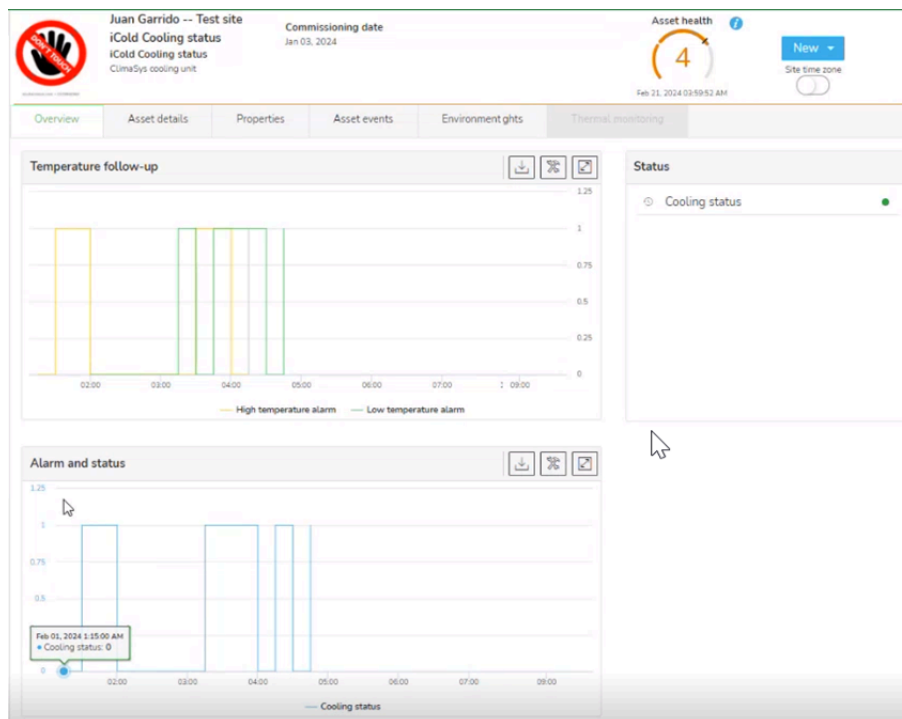
ClimaSys Cooling Indicator Added

A new indicator **Cooling status** is added.

- The **Cooling status** indicator is active when either a high temperature alarm or a low temperature alarm is active.



- The Cooling status information is displayed in the Overview tab as a chart showing follow-up and last value.



Improvement on EcoStruxure Asset Advisor API

Electric Fire Risk Prevention Index and Monitoring levels are added to Health index and Maintenance index for relevant assets.

This new content is only available to users who subscribe to the API option to retrieve data.

Maintenance Mode

The following updates are available in Maintenance mode:

- No longer possible to set start or end dates in the past
- Improved design of notification e-mail for upcoming or cancelled maintenance periods
- Removed **Type** column to improve user experience
- Fixed label translation mistakes

Reports Improvements

Quarterly Communication Report

Quarterly communication report files renamed to **Quarterly analysis report** to align naming convention with other report names.

New report file name consists of

- Site name
- Report type
- Start and end dates (month and year)

Example: *C - Site 1 - Quarterly Analysis report - November to January 2024.doc*

Minor Improvements

The following minor improvements are implemented:

- Improvements on internal process to reduce time of execution related to dynamic condition based maintenance.
- Improved the extended view function of chart widgets, now displaying correctly when data is gathered from different devices.

Notifications on EAA Mobile Application

No updates on mobile application delivered for this release.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.18

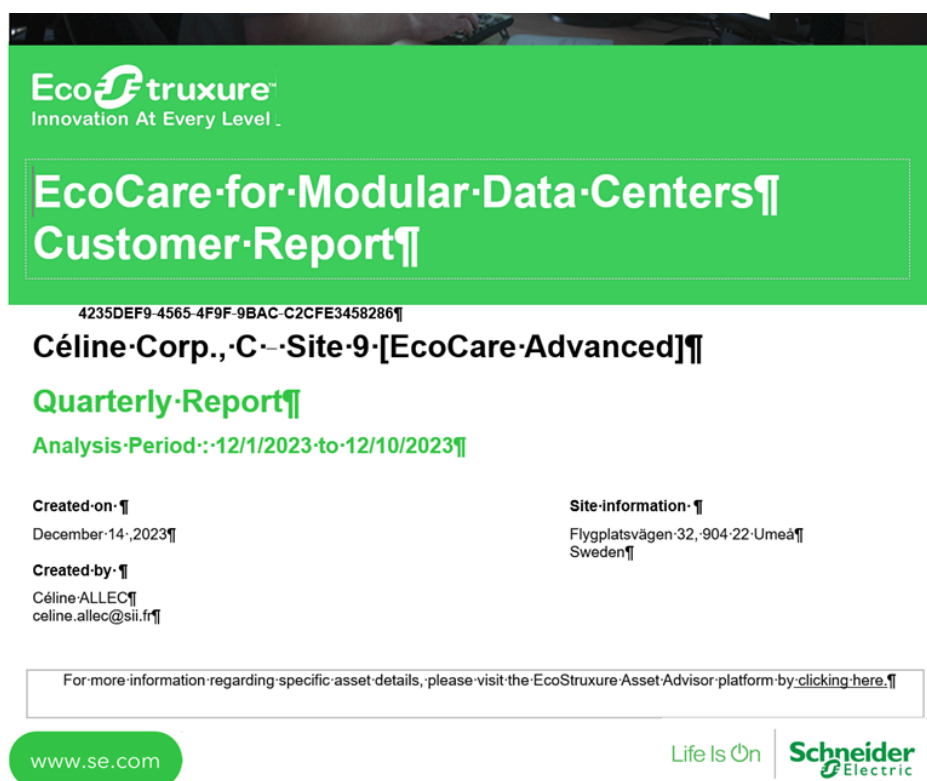
EAA Web Portal New Features

New Template for the Quarterly MDC Report

The quarterly Modular Data Center (MDC) report is generated as planned by the CSH user. The end user can download the PDF version.

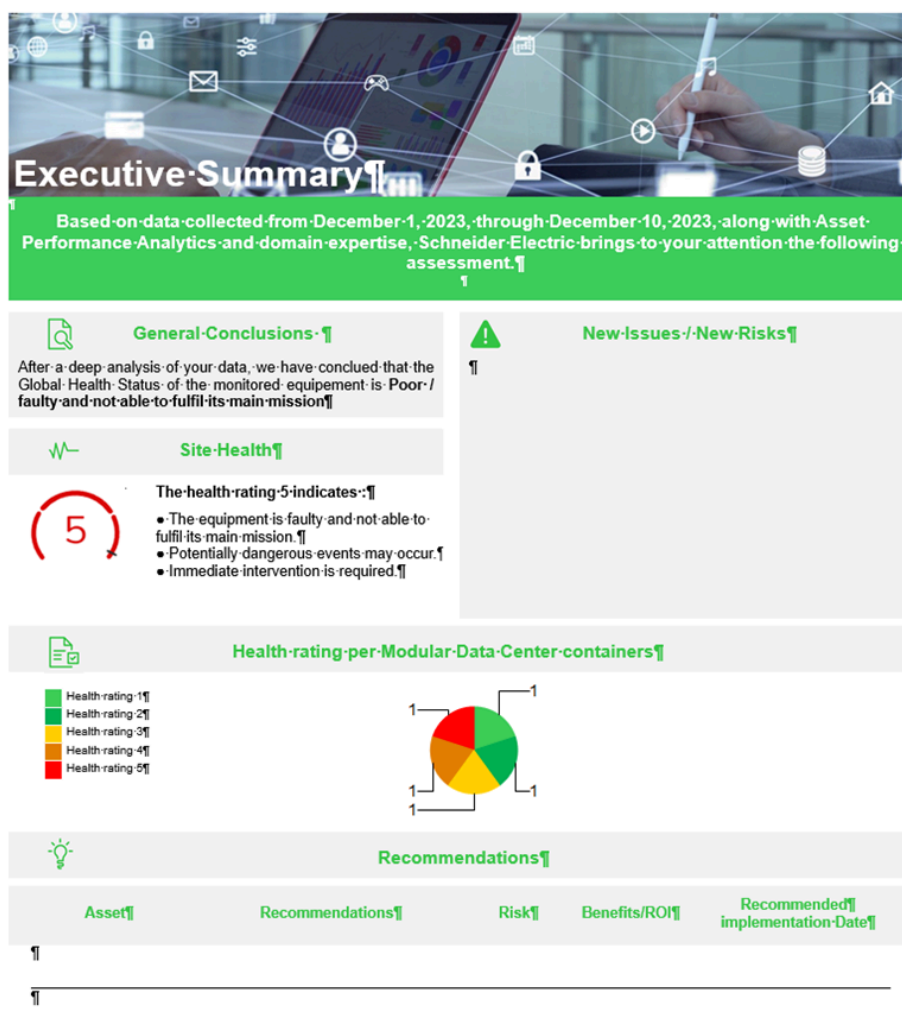
The cover page displays:

- The report title
- The customer and site information
- The report period
- The creation date
- The user who created the report

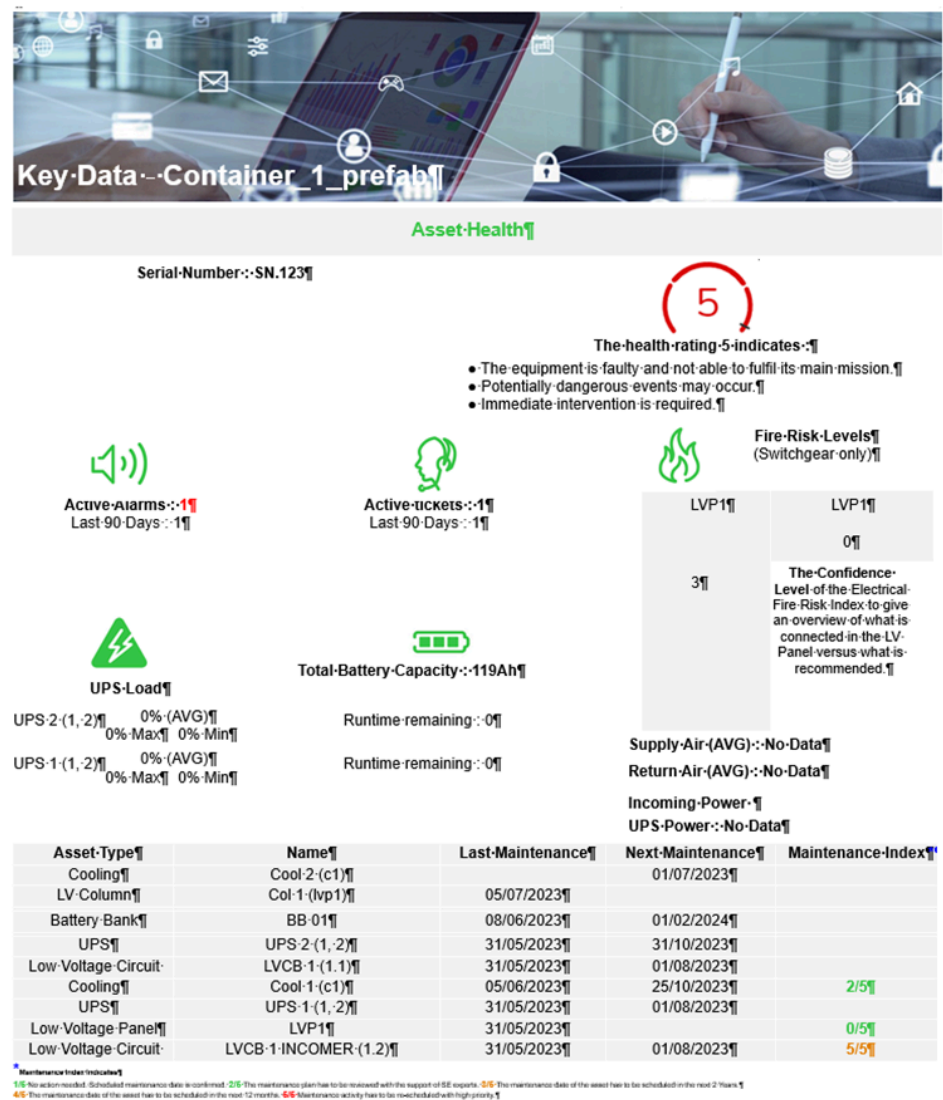


The **Executive Summary** displays:

- The report period and the asset health ratings for all containers.



- For each container: general records
- For each asset: detailed information

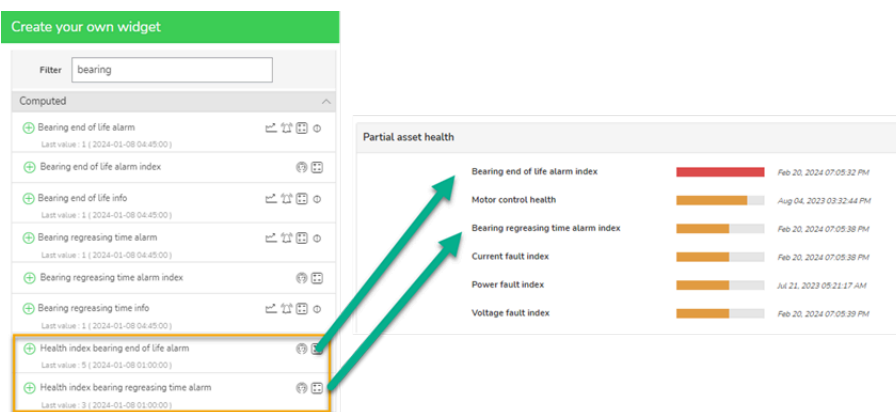


Motor Greasing Indicators for LV and MV Motors

- New properties have been added to the LV induction motor and the MV motor asset types, accessible from the configuration dashboard:
 - Bearing lifetime**
 - Presence of regreasing device**
 - Regreasing interval time**, reported if **Presence regreasing device** is set on **True**

Properties	
Applicable standard	IEC 60034
prop_BearingLifeTime	180000 h
Duty	S10
Insulation Class	105(A)
Number of pairs of poles	3
Presence regreasing device	True
prop_RegreasingIntervalTime	3000 h
Thermal class	105(A)
Nominal speed	1200 rpm

- There are new indicators for bearings:
 - Bearing end of life info**
 - Bearing end of life alarm**
 - Bearing regreasing time alarm**
- There are new indicators related to the alarms, including new information about the partial health index (partial health and validated index):
 - Bearing end of life alarm index**
 - Bearing regreasing time alarm index**



- The user can create maintenance logs to register maintenance tasks performed on the LV induction motor and the MV motor asset types.

Maintenance log for: Motor 600

Created by: Juan Garrido Gonzalez Nov 22, 2023 02:43:03 PM

Event date *

Event name *

07/11/2023 14:41

Asset regreasing

Event code (optional)

Event description (optional)

1 - Motor bearings regreasing maintenance

Motor bearings regreasing maintenance

Manual comment (optional)

Operator name (optional)

Operator name

Save

Cancel

- Tickets with new rules and templates, related to motor greasing indicators, are triggered.

Health index bearing regreasing time alarm event in Motor 600 in site "Juan Garrido -- Test site".

2024-02-03 07:27:48 - Id : 36849 - Source : Algorithm / Juan Garrido -- Test site / ATV600 / Room 600 / Motor 600

Description

Contact Support

Ticket Creation Date: Feb 3, 2024 at 07:27:48 (Site time zone). - Health index bearing regreasing time alarm event in the asset Motor 600.

Partial health index: Health index bearing regreasing time alarm changed its value to 3

Ticket Priority: Medium

Comments

Additional information

Historical

Attachments

B

I

U

Save

Cancel

Update

30

DOCA0283EN-05

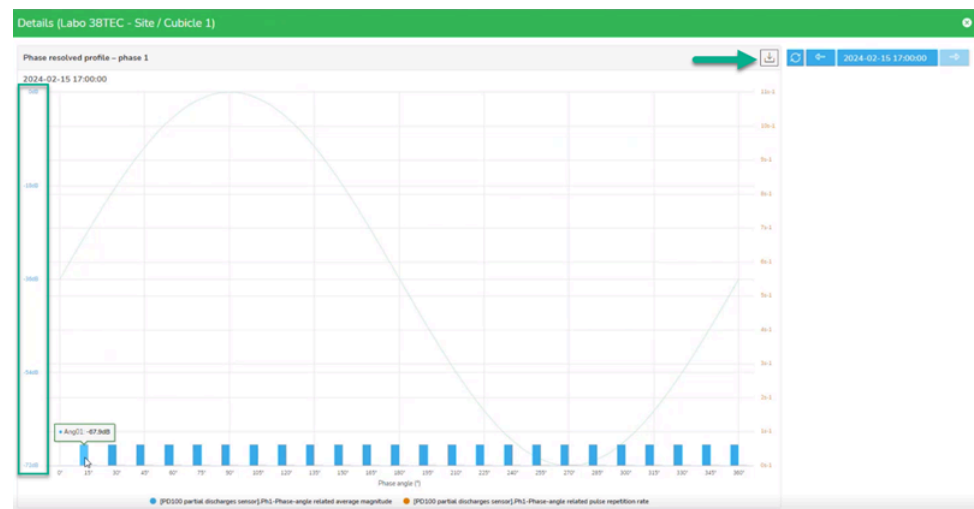
Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

Vector Data for Partial Discharge Analysis

For the MV cubicle, in the **Partial discharge** tab, the user can display the extended view, with the following improvements:

- The three widgets with vector graph have been renamed from **Partial discharge vectors** to **Phase resolved profile (phase)**.
- The y-axis displays the partial discharge average magnitude, with a scale between 0 dB and -72 dB, for any phase angle in the x-axis.
- The actual value of the phase angle average magnitude for partial discharge is displayed with the actual value (not cumulated). A tooltip displays the decimal value.
- The x-axis represents the phase angles every 15 degrees. There is a grid in the background of the chart every 45 degrees.
- Vector data can be downloaded.



Reports Improvements

- Monitoring and alarming report, instead of Summary report:
 - Limited to the following offer levels:
 - ESP Prevent
 - EcoCare Essential
 - EAA Preventive
 - Automatically generated every month. Not available on demand.
 - Generated as a PDF file, directly visible to the end user.

Minor Improvements

- New indicator on LV drives core model: Control cabinet temperature
- New indicators on UPS asset type:
 - Electrical energy input total
 - Electrical energy output total

Notifications on EAA Mobile Application

Updates on EAA mobile application include support for users to update their mobile Android level in order to publish new versions.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.17

EAA Web Portal New Features

New Vector Data for the PD100 Partial Discharge Monitoring Device

A specific data flow converts time series data into vector data.

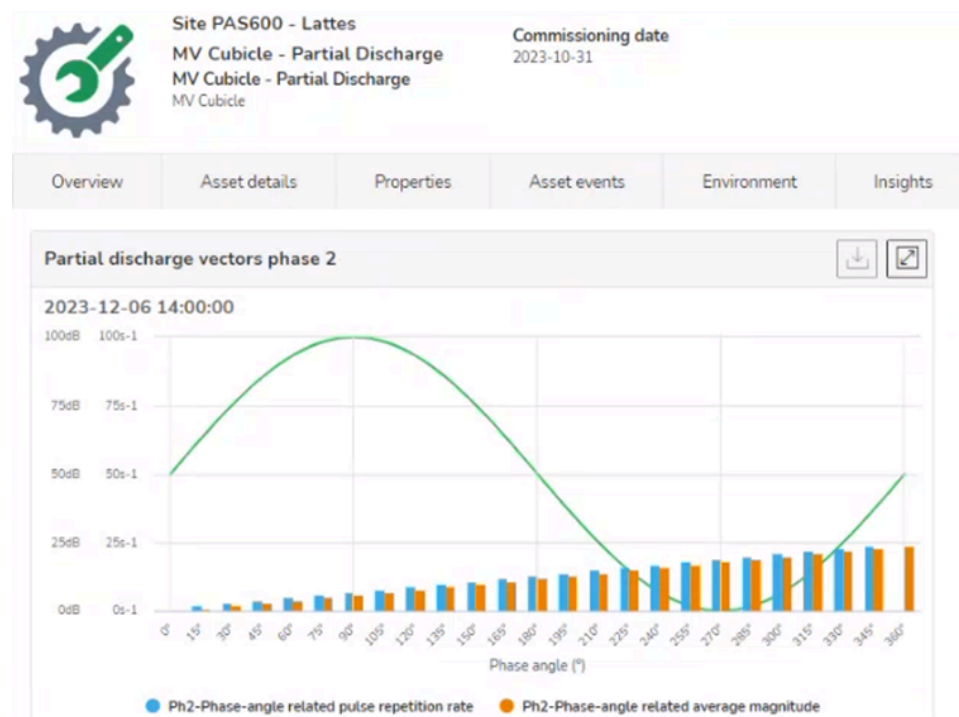
For the PD100 partial discharge monitoring device, information is received from the gateway as standard flat data, while the same measurements are retrieved for multiple angles (24).

The storage format has been modified and the rule engine has been updated to allow Python algorithms to use vector data.

Vector Data Applied to MV Cubicle Asset Type

In OMD, for the MV cubicle asset type, vector data is displayed in the **Partial discharge** widget, with a new chart type displaying:

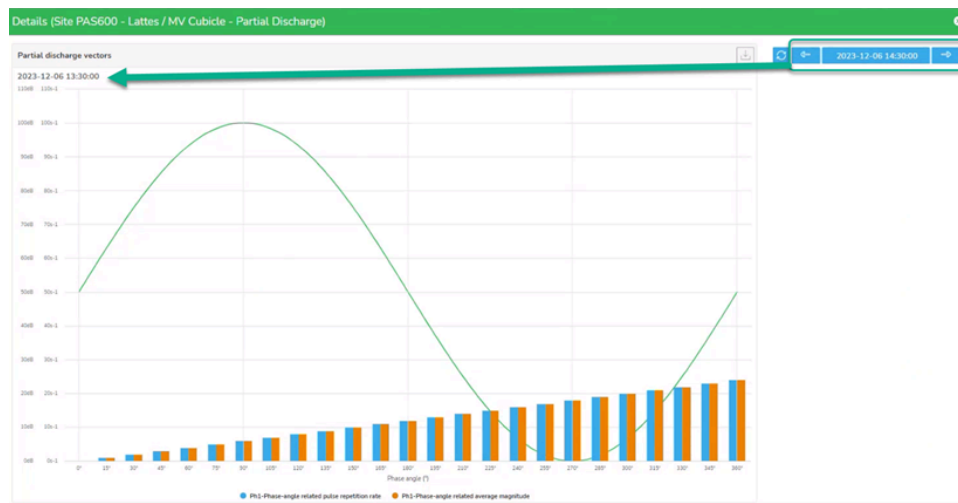
- Two vectors per phase:
 - Pulse repetition rate
 - Related average magnitude
- All angles on each vector, represented by a sine curve



The chart displays values for a single sample.

To navigate through different samples:

1. Go into the detailed view.
2. Use the date picker or arrows to move backward or forward.



When creating a new MV cubicle, the user can declare the presence of new content in the cubicle:

- **Fuse**
- **Current transformers**
- **Voltage transformers**

This information is displayed in the **Properties** tab, in the new **Cubicle content** widget.

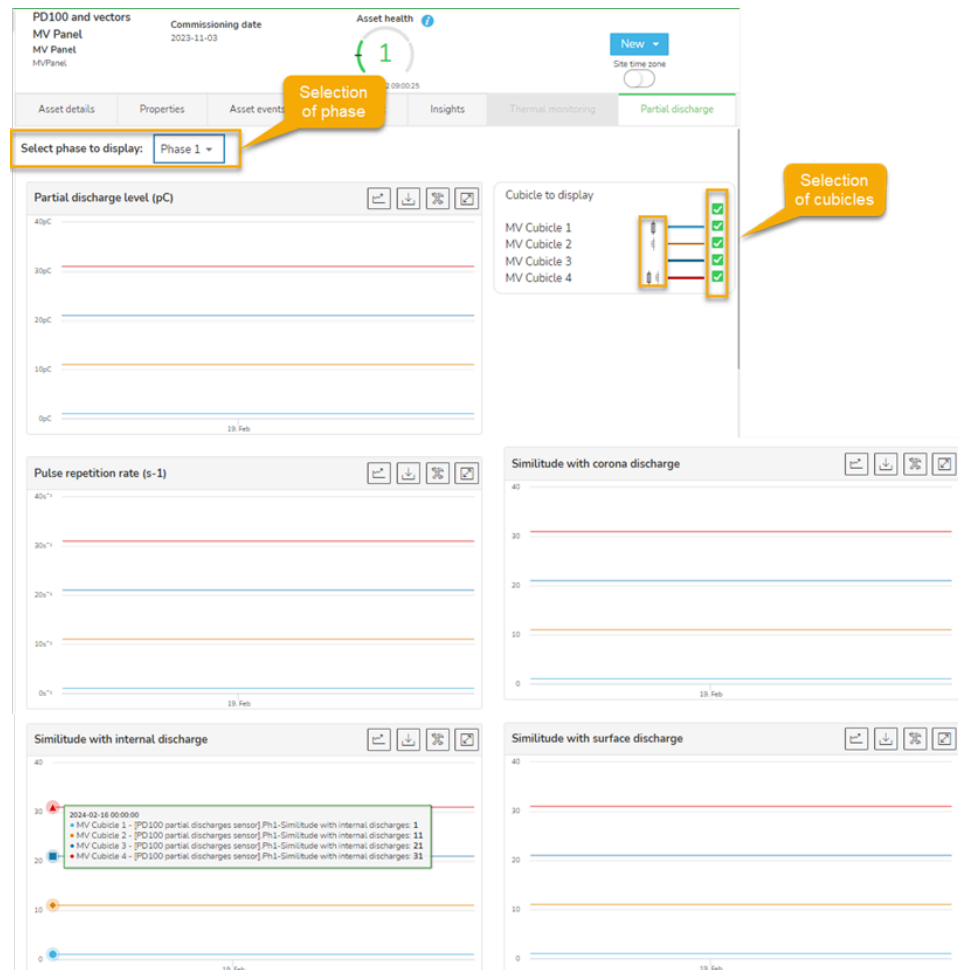
The screenshot shows the EcoStruxure Asset Advisor interface. The left sidebar displays the asset hierarchy, including PD100 and vectors, Building, Location, and MV Panel. The main area shows the Properties tab for MV Cubicle 1. The Cubicle content widget is highlighted, showing the following data:

Cubicle content	
Fuse	Yes
Current transformers	No
Voltage transformers	No

Vector Data Applied to MV Panel Asset Type

For MV panels with partial discharge feature, new graphs display the following indicators:

- **Partial discharge level in pC**
- **Pulse repetition rate**
- **Similitude with corona discharge**
- **Similitude with internal discharge**
- **Similitude with surface discharge**



The user can compare the values in different cubicles in the MV panel by ticking the box associated with each cubicle.

In a dropdown list, the user can also select which phase to display.

Pictograms indicate the presence of fuses, current transformers and voltage transformers inside each cubicle.

Maintenance Mode

The maintenance mode, initially required for EcoCare offers, has been extended to all offers.

This is a standby mode for assets that are not operating under normal conditions, to avoid:

- Undesired tickets.
- An undesired period of service inspection or test.

Maintenance Mode Configuration

At site level, a new option is available under the **New** menu: maintenance mode. During maintenance mode:

- Selected assets do not receive data
- Associated algorithms do not run
- Tickets are not raised

When the user selects the maintenance mode, a pop-up window appears and allows the user to select:

- The assets to be placed in maintenance mode. The user can select:
 - All assets for a site
 - A node in the tree view
 - Assets under a node
- The period during which maintenance is enabled.

Enable maintenance mode on site Schneider Electric -...

Select asset(s) *

Filter

- ✓ Schneider Electric -SE HO Cairo
 - ✓ Head Office
 - ✓ Basement
 - ✓ Basement Low Voltage Panel
 - Compact NSX E
 - Compact NSX E_2
 - ✓ MDB Low Voltage Panel
 - Q5 Bus Way to Power Riser - Masterpact NT16H1
 - ✓ Motor 1
 - Drive ATV600 1
 - ✓ Motor 2
 - Drive ATV600 2

Select your dates

Start date * :

End date * :

Save

Maintenance Mode Dashboard

The new **Assets in maintenance** tab allows the user to see the assets which are in maintenance mode.

Juan Garrido -- Test site
Site - ESP Power & Asset management
TOTO Street
Grenoble, France

Site managed by Partner JGB

Risk level
76%

Assets under monitoring
183

New

Site time zone

Electrical view Site events Insights Reports Notebook Maintenance Electrical health Electrical health issues **Assets in maintenance**

Search

	Event date	Requester	State	Asset(s)	Start date	End date	Action
	2024/02/07 14:10:43	CYRIAQUE MAZERES	Planned	16 assets	2024/02/12 08:00:00	2024/02/14 10:00:00	
	2024/01/17 15:21:14	CYRIAQUE MAZERES	Canceled	OILTR 5.6	2024/01/17 15:30:00	2024/01/17 19:00:00	
	2023/12/18 18:56:10	CYRIAQUE MAZERES	Canceled	0- Energy power m...	2023/12/18 19:00:00	2023/12/18 19:30:00	
	2023/12/07 18:23:40	CYRIAQUE MAZERES	Finished	23 assets	2023/12/07 18:30:00	2023/12/07 18:31:00	

Each row represents a maintenance period, with:

- The user who requested the maintenance
- The state of the request:
 - Planned
 - Ongoing
 - Finished
 - Canceled
- The quantity of assets concerned
- The start and the end date

- By clicking the button on the left, the user opens a pop-up window with the list of assets concerned, and the tracking history, indicating:
 - The change made
 - When the change was made
 - Who made the change

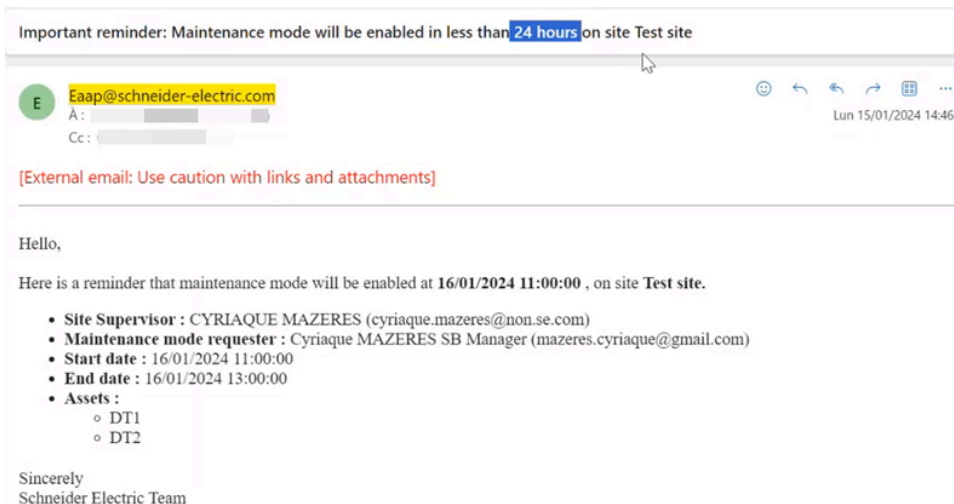
- By clicking the **Edit** button on the right, the user opens the pop-up window to change the maintenance mode parameters. Maintenance mode can be disabled by clicking the **Disable** button on this window. In this case, the user is prompted to describe the reason for disabling maintenance mode, and the site supervisor is informed by e-mail.

Maintenance Mode Indications

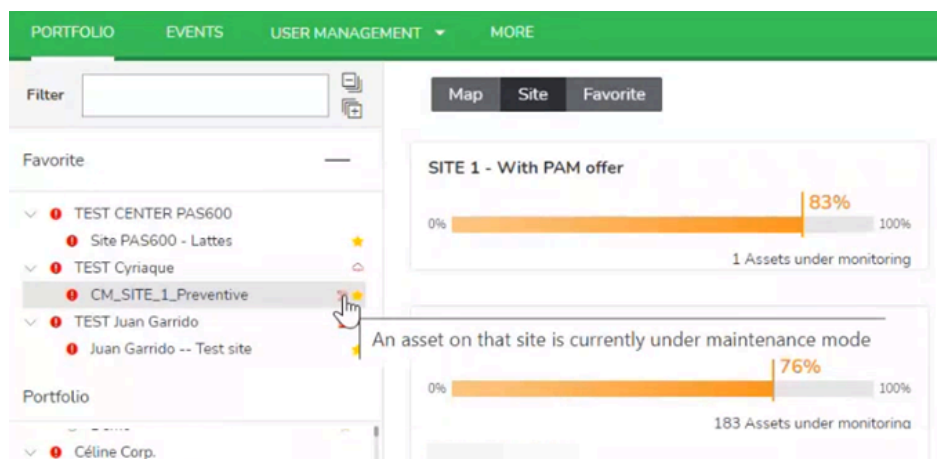
For each maintenance period, the CSH site supervisor receives an e-mail 24 hours before maintenance mode starts, indicating:

- The site
- The assets

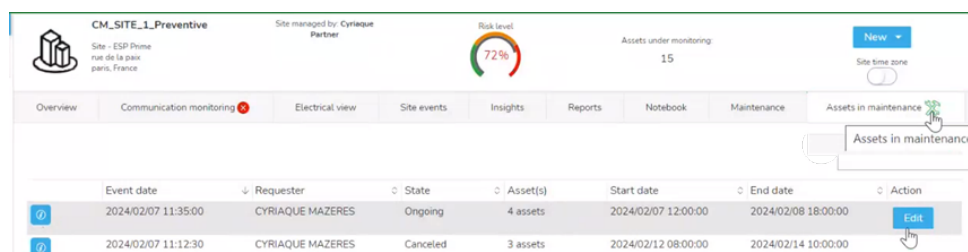
- Date and time



On the tree view, in **Favorite**, a small icon and a tooltip allow the user to identify which sites are in maintenance mode.

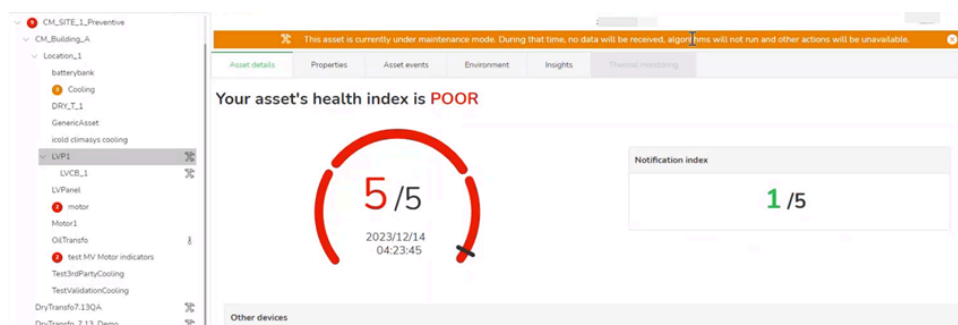


At site level, in the **Assets in maintenance** tab, the same icon and a tooltip are displayed when the maintenance state is **Ongoing**.



On the tree view, the same icon allows the user to identify which assets are in maintenance mode.

When the user selects an asset with this icon, a window opens, with a banner indicating that the asset is under maintenance, and the consequences.



When the end date has passed, all icons and the banner disappear, and data processing returns to normal.

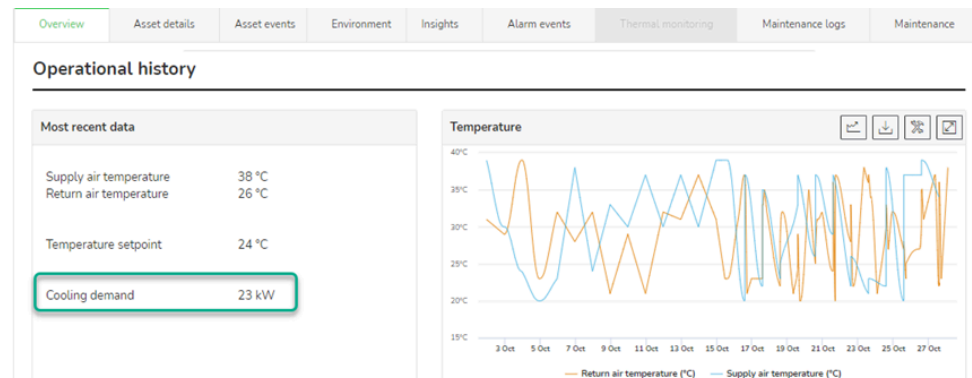
Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

Cooling Demand Indicator

For the cooling unit asset type, there is a new measured indicator: **Cooling demand**. This indicator can be created from the gateway configuration for the Modular Data Center.

At asset level, it is displayed in the **Overview** tab, under **Operational history**, in the **Most recent data** widget.

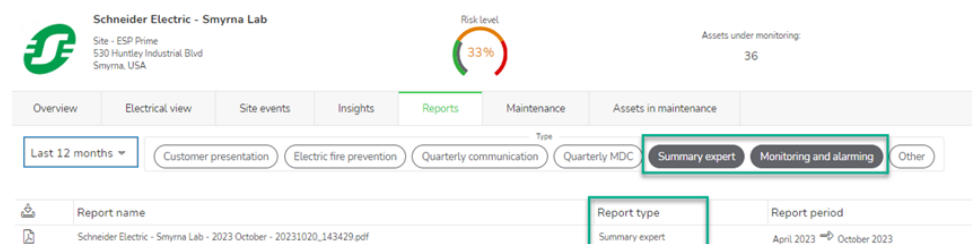


Reports Improvements

Reports Tab

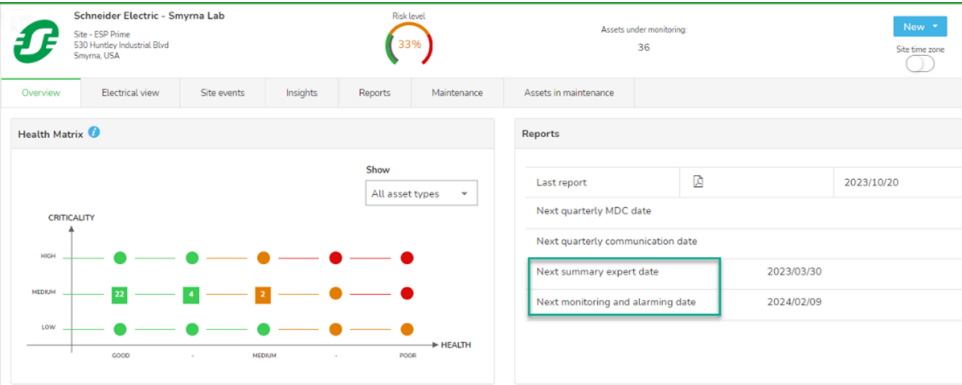
In the **Reports** tab:

- Labels for the filter options have been updated with the new reports names:
 - Summary expert**
 - Monitoring and alarming**
- There is a new file name structure:
 - Site name
 - Report type
 - Report period
- In case of former **New report** button:
 - Automatic trigger has been removed and the user generates it on demand only.
 - The user cannot change the frequency, but can still change the language and dates for report generation.



Site Overview Tab

At site level, in the **Overview** tab, renamed report names are displayed in the **Reports** widget.



Summary Expert Report

The **Summary expert** report is created, following a template, as a **Word** file. It is not visible to end user until the CSH user toggles the button.

The current content is the same as the content of the previous summary report, but it is now possible to make changes before uploading the final version.

Minor Improvements

- A new gateway option has been added: EcoStruxure Panel Server Entry (PAS400).
- The fire prevention index algorithm has been updated for MV panels: computation of ambient temperature/humidity index has been enabled, even if some of the environmental data is not available.
- The **Serial number** of the EcoStruxure Panel Server Universal (PAS600) has been added in the **Communication monitoring** tab.

Overview	Communication monitoring	Electrical
Test gateway 1		
<div>Download last measurements</div> <div>ETP refresh</div>		
Name	Test gateway 1	
Manufacturer	Schneider Electric	
Commercial reference	PAS600	
Serial number	SN1	
Commissioning date	2023-10-31	
Record frequency	15 min	
Publication frequency	60 min	
Alarm threshold	180 min	
Asset	Last reception date	

Notifications on EAA Mobile Application

No updates on mobile application delivered for this release.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.16

EAA Web Portal New Features

New Environmental Indicators for LV Panels

Two new indicators have been created to better compute environmental profiles and other algorithms:

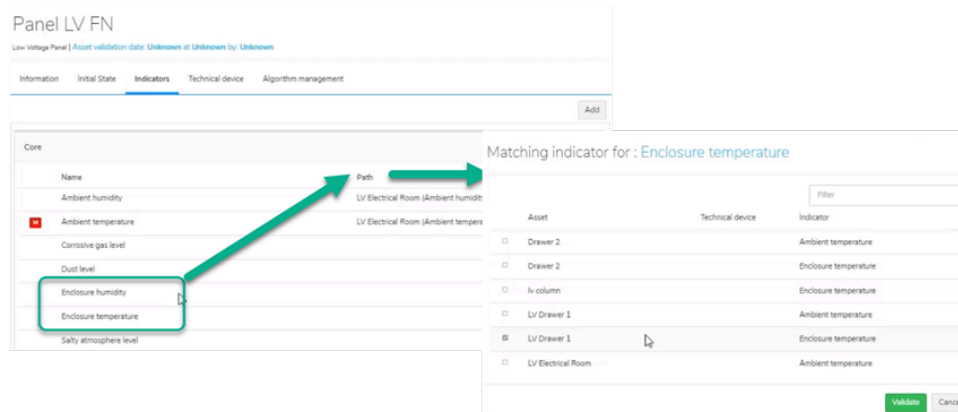
- **Enclosure humidity**
- **Enclosure temperature**

The new indicators apply to the following asset types:

- LV panel
- LV column
- LV circuit breaker

The user can link these two indicators to several items across the following asset types:

- LV electrical room
- LV panel
- LV column
- LV circuit breaker



Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

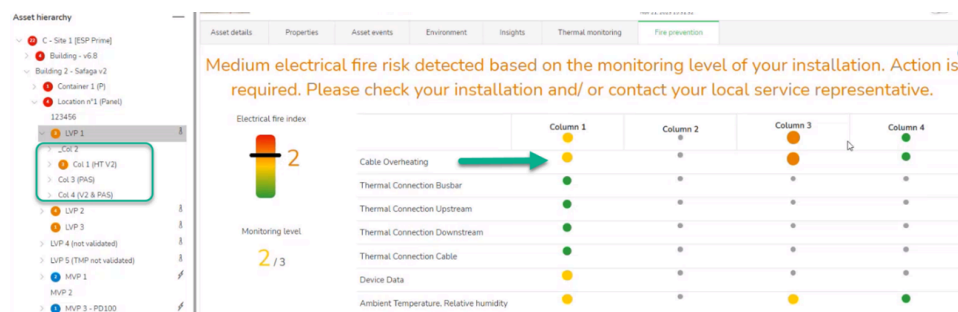
Improved Analytics by HeatTag Technical Devices

With the new version of HeatTag technical device, only for connection via Panel Server Universal, computation of the following key indexes in LV and MV panels has been improved:

- **Electric fire index**
- **Monitoring level**

On the panel view, any column can be computed with data feeds from the following technical devices:

- Com'X energy server
- Panel Server Universal
- Both



Ambient temperature and relative humidity are derived from HeatTag measurements.

Partial Maintenance Index Algorithm

Running the partial maintenance index algorithm with an aging value equal to zero used to result in a detected error, and the partial maintenance index could not be computed.

Now, for aging values equal to zero:

- The corresponding partial health indexes take the value 1.
- Remaining useful life and partial maintenance index are not computed.

Minor Improvements

- The user time zone is used in the calculation of the next maintenance date.
- Graphical items now display correctly when the sidebar is expanded.

Notifications on EAA Mobile Application

No updates on mobile application delivered for this release.

Cybersecurity

TLS 1.2 evolution. No impact on the user experience.

EAA Web Portal Version 7.15

EAA Web Portal New Features

New Asset Type: ClimaSys Cooling Unit

There is a new asset type in EAA web portal: ClimaSys cooling units. ClimaSys cooling units are used to cool electrical panels in enclosed LV switchboard and drive systems, which require additional cooling.

Creation of New Algorithms

New algorithms were created:

- **Partial health index** takes alarm inputs and raises a ticket when the index changes:
 - High temperature alarm
 - Low temperature alarm
 - Open door alarm
 - Probe alarm

Partial health index

Description:

Compute all partial health indexes based on the aging and health indicators.

Input indicators:

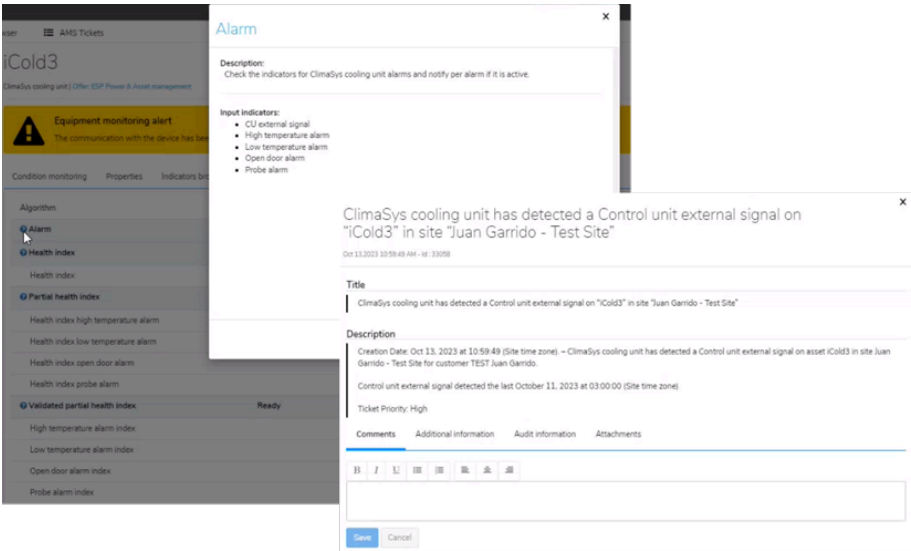
- High temperature alarm
- Low temperature alarm
- Open door alarm
- Probe alarm

Output indicators:

- Health index high temperature alarm
- Health index low temperature alarm
- Health index open door alarm
- Health index probe alarm

- **Health index**

- **Alarm** algorithm takes alarm inputs and raises a ticket when any alarm is active:
 - Cooling unit external signal
 - High temperature alarm
 - Low temperature alarm
 - Open door alarm
 - Probe alarm



Ticket templates are ready to manage automated ticket generation. They include the **Event Type Code**, the **Template title**, and the **Template description**.

Asset type	Event Type Code	Template title	Template description	Behavior	Process flow	Default severity level	Category	Action
ClimaSys cooling unit	ETC.ClimaSysCoolingUnit.OpenDoorAlarm	ClimaSysCoolingUnit.ETC.OpenDoorAlarm.Title	ClimaSysCoolingUnit.ETC.OpenDoorAlarm.Description	Create	Direct	High	Asset	Manage
ClimaSys cooling unit	ETC.ClimaSysCoolingUnit.CUExternalSignal	ClimaSysCoolingUnit.ETC.CUExternalSignal.Title	ClimaSysCoolingUnit.ETC.CUExternalSignal.Description	Create	Direct	High	Asset	Manage
ClimaSys cooling unit	ETC.ClimaSysCoolingUnit.LowTemperature	ClimaSysCoolingUnit.ETC.LowTemperatureAlarm.Title	ClimaSysCoolingUnit.ETC.LowTemperatureAlarm.Description	Create	Direct	High	Asset	Manage
ClimaSys cooling unit	ETC.ClimaSysCoolingUnit.HighTemperature	ClimaSysCoolingUnit.ETC.HighTemperatureAlarm.Title	ClimaSysCoolingUnit.ETC.HighTemperatureAlarm.Description	Create	Direct	High	Asset	Manage
ClimaSys cooling unit	ETC.ClimaSysCoolingUnit.ProbeAlarm	ClimaSysCoolingUnit.ETC.ProbeAlarm.Title	ClimaSysCoolingUnit.ETC.ProbeAlarm.Description	Create	Direct	High	Asset	Manage

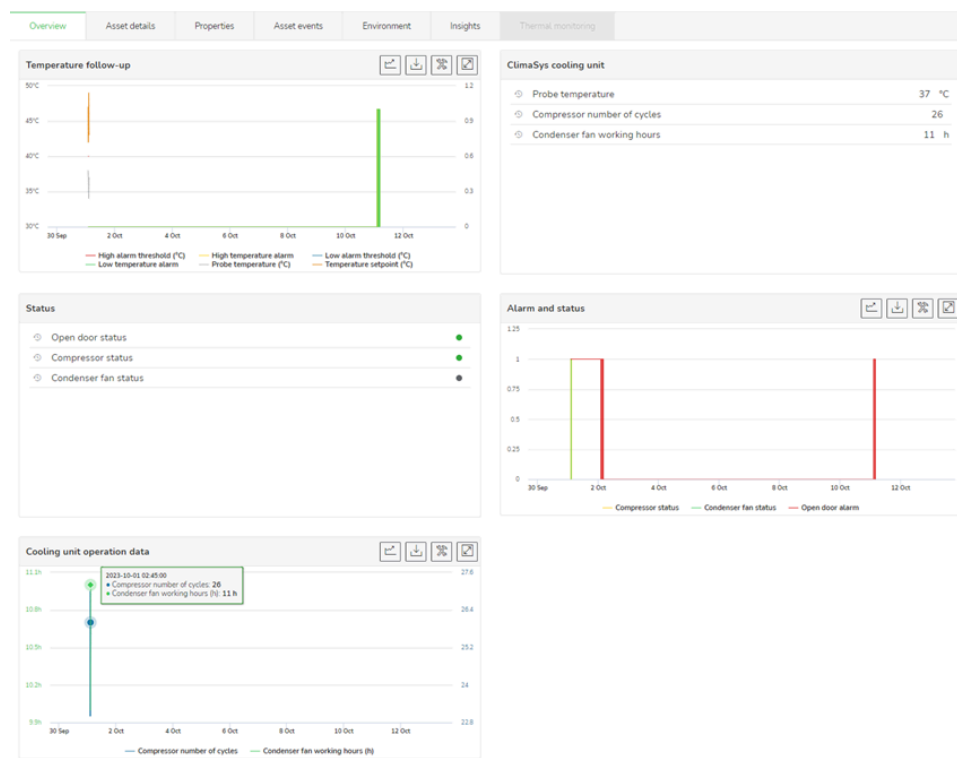
Screens in OMD

The creation of the new asset type **ClimaSys cooling unit** has an impact on the following screens of the EAA web portal.

Overview Tab

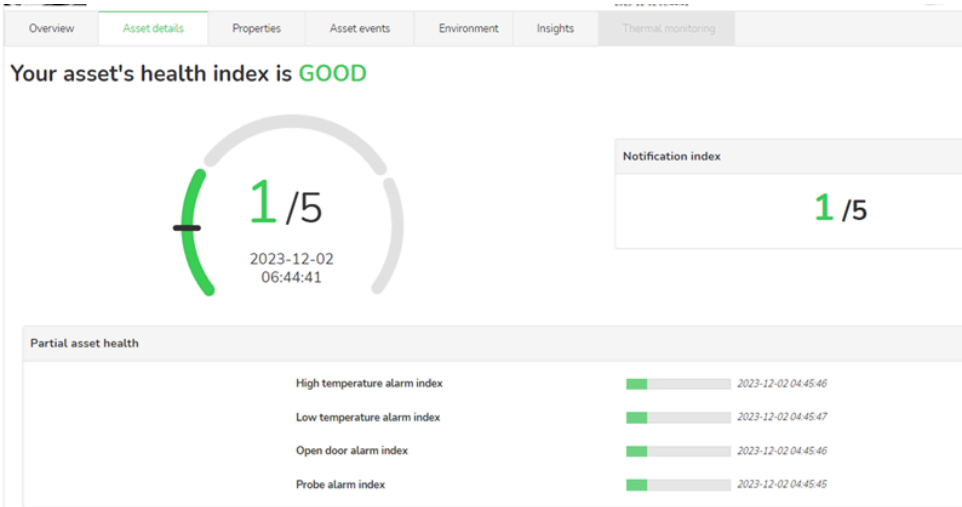
In OMD, the **Overview** tab includes:

- Temperature tracking and thresholds
- Operating values from ClymaSys (last value and historical records)
- Status:
 - Green: active
 - Grey: inactive
- A chart with status history and records for **Open door alarm**
- A chart displaying the **Compressor number of cycles** and the **Condenser fan working hours**



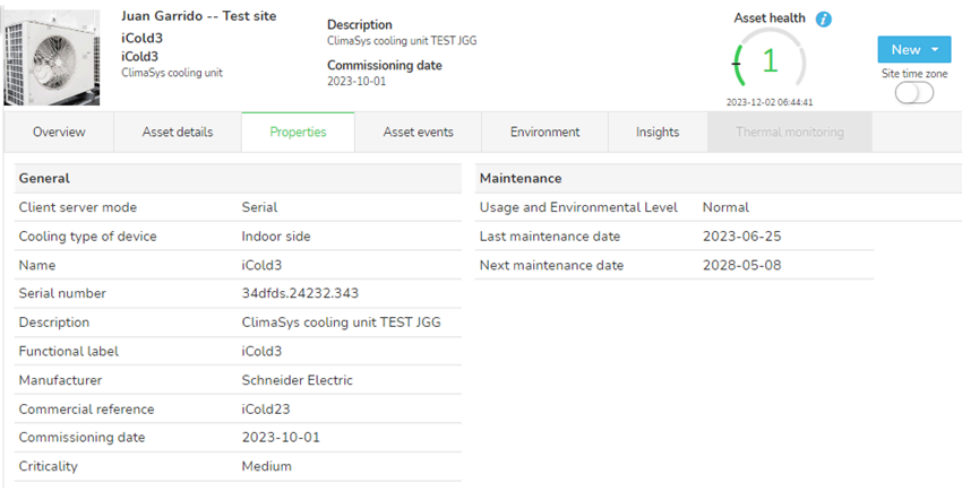
Asset Details Tab

For the new asset type **ClimaSys cooling unit**, there is a new typical layout for the **Asset details** tab, including partial health indexes.



Properties Tab

The **Properties** tab displays the main properties and attributes of the **ClimaSys cooling unit** asset type.



Insights Tab

In the **Insights** tab, it is possible to add a customized widget by selecting any of the new indicators created.

Create your own widget

Choose your indicators

Filter

Measured

CU Start command	Last value : 28 (2023-10-01 02:45:00)
CU Stop command	Last value : 20 (2023-10-01 02:45:00)
CU external signal	Last value : 0 (2023-10-11 04:15:00)
CU stand-by status	Last value : 1 (2023-10-01 03:45:00)
Compressor number of cycles	Last value : 26 (2023-10-01 02:45:00)
Compressor status	Last value : 1 (2023-10-01 02:45:00)
Compressor status output	Last value : 0 (2023-10-01 02:45:00)
Condenser fan status	Last value : 0 (2023-10-01 02:45:00)
Condenser fan status output	Last value : 1 (2023-10-01 02:45:00)
Condenser fan working hours	Last value : 11 h (2023-10-01 02:45:00)
High temperature alarm	Last value : 0 (2023-10-11 04:15:00)
Low alarm threshold	Last value : 35 °C (2023-10-01 02:45:00)
Low temperature alarm	Last value : 0 (2023-10-11 04:15:00)
Open door alarm	Last value : 0 (2023-10-11 04:15:00)
Open door status	Last value : 1 (2023-10-01 02:45:00)
Probe alarm	Last value : 0 (2023-10-11 04:15:00)
Probe temperature	Last value : 37 °C (2023-10-01 02:45:00)
Temperature Alarm activation differential	Last value : 9 °C (2023-10-01 02:45:00)
Temperature setpoint	Last value : 43 °C (2023-10-01 02:45:00)

Computed

Health index	Last value : 1 (2023-12-21 06:24:35)
Health index high temperature alarm	Last value : 1 (2023-10-11 02:00:00)
Health index low temperature alarm	Last value : 1 (2023-10-11 02:00:00)
Health index open door alarm	Last value : 1 (2023-10-11 02:00:00)
Health index probe alarm	Last value : 1 (2023-10-11 02:00:00)
High temperature alarm index	Last value : 1 (2023-12-21 04:34:15)
Low temperature alarm index	Last value : 1 (2023-12-21 04:34:16)
Open door alarm index	Last value : 1 (2023-12-21 04:34:15)
Probe alarm index	Last value : 1 (2023-12-21 04:34:15)

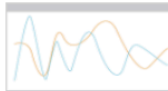
Linked

Ambient humidity (Container 1 Functional label)	Last value : 16 % (2023-06-01 04:45:00)
Ambient temperature (Container 1 Functional label)	Last value : 17 °C (2023-06-01 05:45:00)
Corrosive gas level (Container 1 Functional label)	Last value : 1 (2022-06-23 00:00:00)
Dust level (Container 1 Functional label)	Last value : 1 (2022-06-23 00:00:00)
Salty atmosphere level (Container 1 Functional label)	Last value : 1 (2022-06-23 00:00:00)

Selected widget

Type *

Chart
 Alarm
 Chart
 Last value



Curve

Provide all data for selected indicators between two dates.
Can be used with most indicators.

Next

Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

Spanish Translation Updated for Fire Index, Monitoring Level and Matrix Help Function

In the window **Fire Index Matrix**, the Spanish translation has been changed to improve consistency with index names on the screens: **Monitoring level** was translated into **Nivel de Observacion** and **Fire Index** remains in English.

Fire Index Matrix

La matriz del Fire index proporciona una visión global de los factores que pueden causar incendio eléctrico de cada activo y su nivel de observacion.

La cifra que aparece en cada posición es el número de activos que cumplen estos criterios.

Fire Index: Índice que refiere la posibilidad de incendio eléctrico, proporciona una estimación global basada en las posibles causas de incendio eléctrico.

- 0: Insignificante
- 1: Baja: Tener en cuenta la estimación del indice en cada columna durante el próximo mantenimiento.
- 2: Medio: Visita rápida a la instalación para su mantenimiento.
- 3: Alto: Compruebe la instalación inmediatamente.

Nivel de Observacion (del **Fire Index**) ofrece una visión general de los sensores que están conectados en el activo, frente a lo que se recomienda como óptimo.

- 0: No hay suficientes sensores conectados y operativos para mostrar el Fire Index.
- 1: Bajo: Los datos disponibles son los mínimos para calcular el Fire Index.
- 2: Medio: Los datos disponibles permiten un cálculo fiable del Fire Index.
- 3: Excelente: Los datos disponibles permiten el cálculo del Fire Index con un alto grado de confianza.

Actualice la página para ver el último valor de **Fire index matrix**.

Minor Improvements

An issue with the thresholds rule has been fixed.

Notifications on EAA Mobile Application

No updates on mobile application delivered for this release.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.14

EAA Web Portal New Features

Dry Transformer: Dynamic Condition Based Maintenance

For dry transformer asset type, a new algorithm provides dynamic Condition Based Maintenance (for ESP Prime and ESP Predict) at the same level as for oil transformer asset type.

Updates on the Data Model

To support the new algorithm, 27 data feeds which are used to calculate aging modes have been created. Those data feeds are required to compute in sequence:

1. The output of the GAF algorithm on the dry transformer
2. The partial health index
3. The partial maintenance index
4. The asset **Maintenance index**, considering all partial indexes

Detail for: [DryTransformerMaintenanceIndex](#)

Label	Maintenance index	Asset type(s)
Description		<ul style="list-style-type: none"> Dry Transformer
	This algorithm computes the maintenance index at asset level and notifies according to it.	Active at global level
		Type Diagnostic
		Trigger Daily
Input indicator(s)	Output indicator(s)	
LV connection phase 1 insulation aging maintenance index LV connection phase 2 insulation aging maintenance index LV connection phase 3 insulation aging maintenance index LV connection phase N insulation aging maintenance index LV winding phase 1 insulation aging maintenance index LV winding phase 1 mechanical aging maintenance index LV winding phase 2 insulation aging maintenance index LV winding phase 2 mechanical aging maintenance index LV winding phase 3 insulation aging maintenance index LV winding phase 3 mechanical aging maintenance index MV connection down 1 insulation aging maintenance index MV connection down 2 insulation aging maintenance index MV connection down 3 insulation aging maintenance index MV connection tap 1 insulation aging maintenance index MV connection tap 2 insulation aging maintenance index MV connection tap 3 insulation aging maintenance index MV connection up 1 insulation aging maintenance index MV connection up 2 insulation aging maintenance index MV connection up 3 insulation aging maintenance index MV winding phase 1 insulation aging maintenance index MV winding phase 1 mechanical aging maintenance index MV winding phase 2 insulation aging maintenance index MV winding phase 2 mechanical aging maintenance index MV winding phase 3 insulation aging maintenance index MV winding phase 3 mechanical aging maintenance index Magnetic core insulation aging maintenance index Thermal relay calendar aging maintenance index	Maintenance index	

Depending on the sensors fitted in dry transformers, new assemblies are selected to complement configuration. Then, any assembly attaches some of the 27 new data feeds to the asset model. In turn, they activate corresponding indicators to compute aging by GAF.

Assemblies

DryTransfo_7.13_Demo - Assemblies

☒

Low Voltage Terminal Connection Point

☒

Medium Voltage Terminal Connection Point (Down)

☒

Medium Voltage Terminal Connection Point (Tap)

☒

Medium Voltage Terminal Connection Point (Up)

☐

Medium Voltage Winding

New settings are required to configure the dry transformer asset type:

- Device range, name device: this information is used to identify which models are available for GAF computation.
- Usage and environmental level
- Last maintenance and next maintenance dates

A new indicator, which tracks magnetic core temperature in the dry transformer, is required to perform GAF computation properly.

Screens in OMD

When dry transformer is properly configured, the application starts running algorithms to display partial health indexes in the **Asset details** tab.

CM_SITE_1_Preventive
DryTransfo7.13QA
DryTransfo7.13QA
Dry Transformer

Commissioning date
2023-09-18

Asset health ?

4

2023-11-23 04:14:26

New ▼
Site time zone

Asset details

Properties

Asset events

Environment

Insights

Thermal monitoring

Maintenance logs

Your asset's health index is MEDIUM

4 / 5

2023-11-23 04:14:26

Notification index

1 / 5

Partial asset health

Thermal relay calendar aging index	<div></div>	2023-11-23 08:16:14
Magnetic core insulation aging index	<div></div>	2023-11-23 08:16:20
LV connection phase 1 insulation aging index	<div></div>	2023-11-23 08:16:12
LV connection phase 2 insulation aging index	<div></div>	2023-11-23 08:16:12
LV connection phase 3 insulation aging index	<div></div>	2023-11-23 08:16:13
LV connection phase N insulation aging index	<div></div>	2023-11-23 08:16:15
LV winding phase 1 insulation aging index	<div></div>	2023-11-23 08:16:15

A new maintenance log is available to document any maintenance tasks performed during the asset lifecycle.

CM_SITE_1_Preventive
DryTransfo7.13QA
DryTransfo7.13QA
Dry Transformer

Commissioning date
2023-09-18

Asset health
4
2023-11-23 04:14:26

New
Site time zone

Asset detailsPropertiesAsset eventsEnvironmentInsightsThermal monitoringMaintenance logs

Event type
-1-Restart of the equipment after a s...
0-Nothing done
1-Maintenance (Tightening control a...

Event date
Start date mm/dd/yyyy
End date mm/dd/yyyy

Apply FilterReset

Event date	E...	Event name	Event des...	Operator ...	Creation ...	Creation ...	Update d...	Update u...
2023-09-17 15:5...	1	test eventee	Maintenance (Tig...	cyriaque	2023-09-18 15:5...	CYRIAQUE MAZE...	2023-09-18 15:5...	CYRIAQUE MAZE...
2023-09-16 15:5...	3	test2	Winding refurbish...		2023-09-18 15:5...	CYRIAQUE MAZE...		

1 to 2 of 2 entriesItems per page 50Page 1 / 1

EAA web portal calculates a **Maintenance index** based on the partial maintenance indexes available. This allows the user to schedule maintenance actions according to the asset condition.

CM_SITE_1_Preventive
DryTransfo7.13QA
DryTransfo7.13QA
Dry Transformer

Commissioning date
2023-09-18

Asset health
4
2023-11-23 04:14:26

New
Site time zone

PropertiesAsset eventsEnvironmentInsightsThermal monitoringMaintenance logsMaintenance

The maintenance plan has to be reviewed with the support of SE experts.

Maintenance index
2 / 5

Next maintenance date
2024-06-01

Commissioning date
2023-09-18

Last maintenance date
2021-06-01

Partial maintenance index

LV winding phase 1 insulation aging maintenance index		2023-09-16 00:00:00
LV winding phase 1 mechanical aging maintenance index		2023-11-07 19:05:00

Interface to Integrate Time Series From Aveva Data Hub via ETP

- A new option is available when creating a new gateway: Aveva Data Hub interface allows the user to integrate data into EAA web portal via ETP.

New Gateway

Gateway informationAssetsUnmatching indicators

Gateway details

General

Name
Name
Commissioning date
01/08/2023
Description optional

Site
Aveva DataHub


Product

External Gateway ID
External Gateway ID

Communication settings

Record frequency
15
Publication frequency
60
Alarm threshold
150
Interplatform data copy
Unavailable

- New storage of data files and new data processing: in the **Communication monitoring** tab, it is possible to **Download last measurements**.



Test site
Site - ESP Predict
Address
City, France

Assets under monitoring:
94

Overview

Communication monitoring

Insights

Reports

Notebook

Maintenance

Test 15 sept

Aveva

Download last measurements

Name	Aveva
Commissioning date	2023-09-19
Record frequency	15 min
Publication frequency	15 min
Alarm threshold	180 min
External Gateway ID	ext
Reception date	2023-10-19

Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

GAF Initialization Extended to Other Asset Types

GAF initialization has been extended to other asset types:

- MV circuit breaker
- Oil transformer
- Dry transformer
- UPS

Minor Improvements

In the site **Overview** tab, the **Reports** widget displays crosshatched if quarterly analysis and summary expert reports are not available.

Notifications on EAA Mobile Application

No updates on mobile application delivered for this release.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.13

EAA Web Portal New Features

Temperature Discrepancy Widgets for Oil/Dry Transformer

- New indicators are computed for each position of thermal sensors:
 - For oil transformers:
 - Delta temperature for LV connection
 - Delta temperature for MV connection
 - For dry transformers:
 - Delta temperature for LV connection
 - Delta temperature for MV tapping link
 - Delta temperature for MV downstream connection
 - Delta temperature for MV upstream connection

Oil Transfo. 1

Oil Transformer | Asset validation date: Unknown at Unknown by: Unknown

Offer
ESP Prime

Information	Initial State	Indicators	Technical device	Algorithm management										
<div>Add</div> <table><tr><td>M</td><td>Delta temperature LV connection</td><td>4.00 °C</td><td>Jul 26,2023 12:00:00 AM</td><td><div></div></td></tr><tr><td>M</td><td>Delta temperature MV connection</td><td>4.20 °C</td><td>Jul 27,2023 4:10:00 AM</td><td><div></div></td></tr></table>					M	Delta temperature LV connection	4.00 °C	Jul 26,2023 12:00:00 AM	<div></div>	M	Delta temperature MV connection	4.20 °C	Jul 27,2023 4:10:00 AM	<div></div>
M	Delta temperature LV connection	4.00 °C	Jul 26,2023 12:00:00 AM	<div></div>										
M	Delta temperature MV connection	4.20 °C	Jul 27,2023 4:10:00 AM	<div></div>										

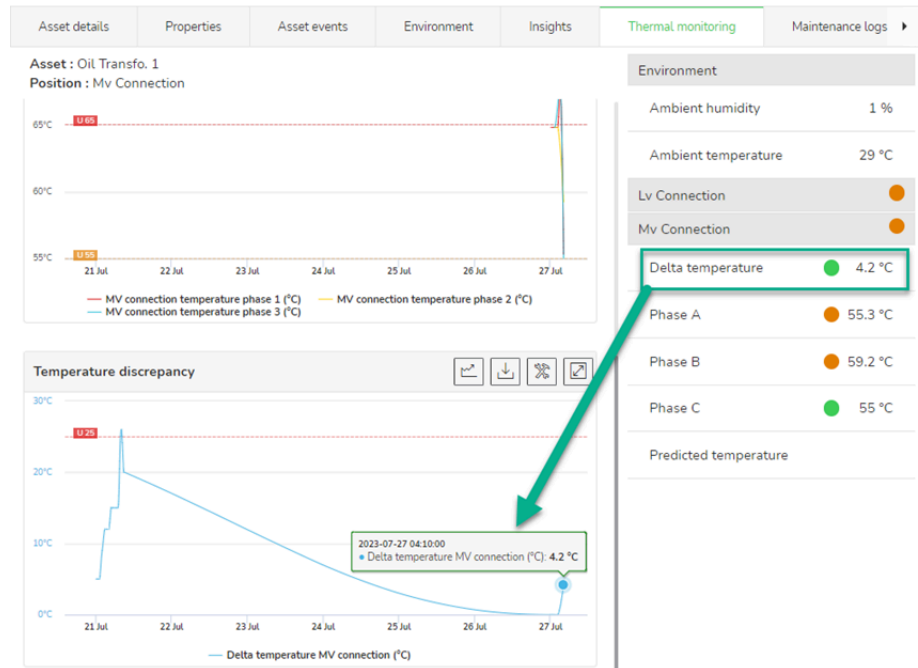
- There is a new algorithm related to each of the new indicators: temperature discrepancy.

Dry Transfo. n°1

Dry Transformer | Offer: ESP Prime

Condition monitoring	Power	Properties	Indicators browser	Health index	AMS Tickets 1	Notebook	Maintenance logs	Algorithm																
<div><div>Temperature discrepancy LV connection</div><div>Ready</div><div>Nov 21,2023 10:17:12 AM</div></div> <table><tr><td>Delta temperature LV connection</td><td></td><td>9°C</td><td>Nov 21,2023 9:00:00 AM</td></tr></table> <div><div>Temperature discrepancy MV Tapping Link</div><div>Ready</div><div>Nov 21,2023 10:37:13 AM</div></div> <table><tr><td>Delta temperature MV tapping link</td><td></td><td>18°C</td><td>Nov 21,2023 9:00:00 AM</td></tr></table> <div><div>Temperature discrepancy MV connection downstream</div><div>Ready</div><div>Nov 21,2023 10:20:20 AM</div></div> <table><tr><td>Delta temperature MV connection down</td><td></td><td>13°C</td><td>Nov 21,2023 9:00:00 AM</td></tr></table> <div><div>Temperature discrepancy MV connection upstream</div><div>Ready</div><div>Nov 21,2023 10:20:20 AM</div></div> <table><tr><td>Delta temperature MV connection up</td><td></td><td>17°C</td><td>Nov 21,2023 9:00:00 AM</td></tr></table>									Delta temperature LV connection		9°C	Nov 21,2023 9:00:00 AM	Delta temperature MV tapping link		18°C	Nov 21,2023 9:00:00 AM	Delta temperature MV connection down		13°C	Nov 21,2023 9:00:00 AM	Delta temperature MV connection up		17°C	Nov 21,2023 9:00:00 AM
Delta temperature LV connection		9°C	Nov 21,2023 9:00:00 AM																					
Delta temperature MV tapping link		18°C	Nov 21,2023 9:00:00 AM																					
Delta temperature MV connection down		13°C	Nov 21,2023 9:00:00 AM																					
Delta temperature MV connection up		17°C	Nov 21,2023 9:00:00 AM																					

- The **Thermal monitoring** tab displays the temperature discrepancy:
 - On a new line in the accordion menu, called **Delta temperature**, available for oil and dry transformers.
 - On a new widget with a **Temperature discrepancy** chart. No default threshold is set on the widget.

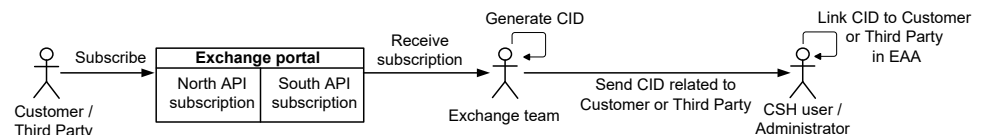


Management of Tokens for Northbound and Southbound APIs

As an external user (customer or third party), you have access to the Exchange portal to subscribe to Northbound (customer) or Southbound API (third party).

The management of tokens for Northbound and Southbound APIs is the following:

1. You submit a request for subscription to the Exchange support team.
2. The Exchange support team generates a customer identifier (CID) associated with your subscription.
3. The Exchange support team sends the CID to the EAA-ED team (an administrator or a CSH user).
4. A link is established between the CID and your account in EAA-ED application.
5. You can generate a personal access token (PAT) associated with your CID and your name/e-mail address.
6. The PAT allows you to connect to the Northbound or Southbound API.



Refer to the Developer Portal in Schneider Electric Exchange.

Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

Electric Fire Prevention

- Spanish translation has been added in the help function accessed from the **Electric fire prevention** tab.
- The template **Electric fire prevention** report has been updated:
 - Minor layout modifications
 - New design of the **New events** chart:
 - A histogram displays the open tickets.
 - Each color corresponds to a status of tickets.
 - A line curve displays the number of closed tickets.



Site Supervisor Name

The **Contact** support window displays the name of the **Site supervisor** on each site. Site supervisor is not recorded as a new contact.

Contact

Juan Garrido - Test Site

Site supervisor
 Juan Garrido Gonzalez
 juan.garrido@se.com invalid

Customer contact

new contact AMS
 Contact support
 Business hours - Escalation level 1
 323423233 AMS@test.fr.es

aa aaa
 test
 Business hours - Escalation level 2
 aaa@aaa.com

Schneider Electric contact

Juan Garrido Gonzalez
 Administrator
 24/7 - Escalation level 1
 juan.garrido@se.com invalid

SE Contact Support
 SE Support official
 24/7 - Escalation level 1
 SEContact.Support@se.com

Quarterly Modular Data Center Report

For sites configured with EcoCare service offers, for MDC feature, a new option allows you to upload a specific report type (**Quarterly MDC** report).

On the **New report** popup, a new field has been added: **Next quarterly MDC date**.

New report

The file size must not exceed 15MB * Attach A File

Start date *

End date *

Report type *

Do you want to update the next report information? ☐

Next summary report date

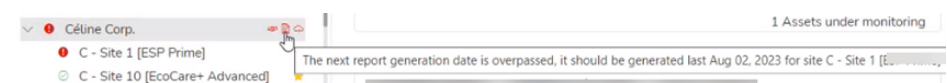
Summary report frequency

Next quarterly communication date

Next quarterly MDC date

Save

If the date has passed, the **Site** tree view is flagged for action and a tooltip gives detailed information.



Thermal Monitoring Point Specification

- The **Thermal monitoring** tab displays:
 - Neutral current phase
 - Content in the accordion menu in alphabetical order, for the thermal points and within any thermal point.

Thermal monitoring		
▲ Busbar		●
Cable 1		●
▲ Cable 2		●
Connection Downstream		●
Connection Upstream		●
Delta temperature	●	6 °C
Phase A	●	2 °C
Phase B	●	32 °C
Phase C	●	45 °C
Predicted temperature		

- **Thermal Monitoring Point** can be attached to new asset types: **Iv column** and generic asset.

1A1-Busbar

Thermal Monitoring Point | Asset validation date: Unknown at Unknown by: Unknown

Information	Initial State	Indicators	Technical device	Algorithm management
Asset Details				
General				
Name		Related asset (optional)		
1A1-Busbar		Breaker-1A1 FN		
Description (optional)		Breaker-1A1 FN Breaker-2B1 Breaker-2B2 Breaker-2B3 Copy of TEST 6884 DPA Import 1 Iv column LV Cubicle LVCB lib Min LVCB PHI test		
Thermal monitoring point image position				
X position (optional)				
2000				

Minor Improvements

- For oil transformer, on the **Advanced Monitoring** tab:
 - On polar widgets, indicators are displayed with a value from 1 to 5 (from 0 to 5 previously).
 - The widget with breakdown voltage level has been removed.
- In the **Insights** tab: correct translation into Portuguese for some indicators.

Notifications on EAA Mobile Application

Updates on EAA mobile application delivered for this release include an update required to keep the application publication in Play Store.

Cybersecurity

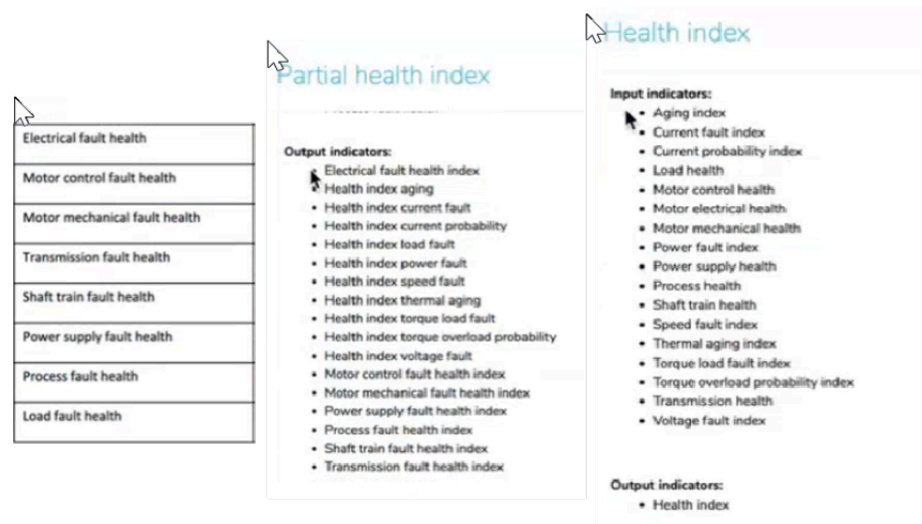
No specific development in this release.

EAA Web Portal Version 7.12

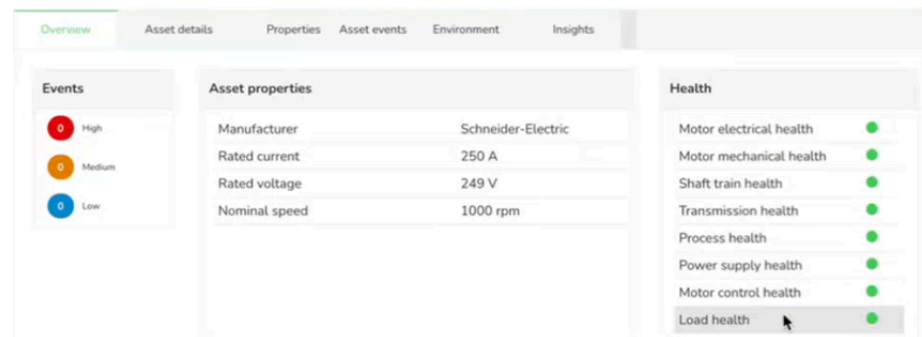
EAA Web Portal New Features

MV Motor Health Indexes

- For MV motor health indexes, eight health indicators were added, as they were already computed for LV induction motors.
- Those eight new indicators have an impact on the calculation of the **Partial health index**:



- A **Health** widget has been added in the **Overview** tab for MV motor.



ESP Electric Fire Prevention Offer Renamed to Digital Monitoring - Fire Prevention

The **ESP Electric Fire Prevention** offer was renamed to **Digital Monitoring - Fire Prevention**. This has an impact on:

- The banner of each site, the drop-down lists, and the pop-up menus.
- The table with offer levels.

Reworked Tickets for Each LV Drive Event Code

For LV drive asset type, EAA web portal triggers specific tickets with actionable information. The list of main event codes triggering specific content is the following:

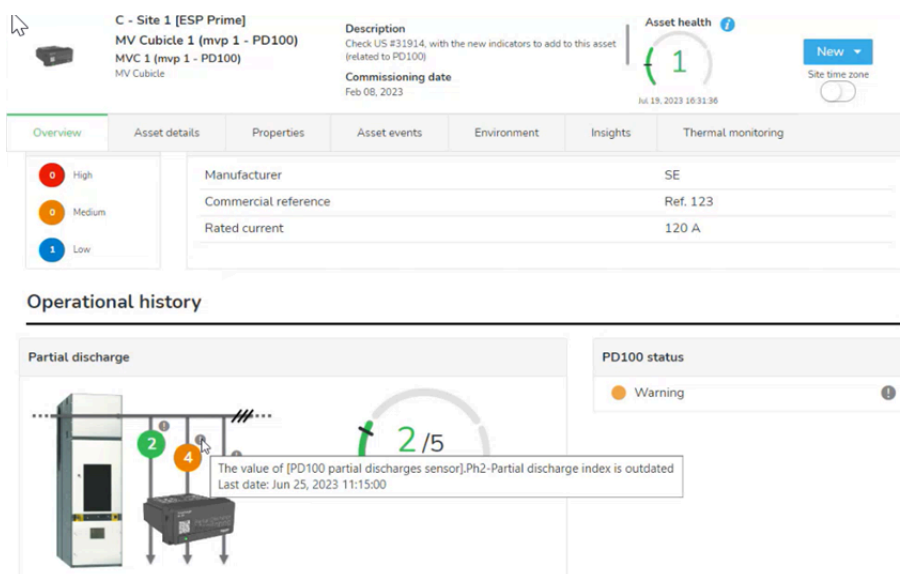
- **Cabinet Overheat Error**
- **Input Overheating**
- **DC Bus Overvoltage**
- **Overcurrent**
- **Drive Overheating**
- **Process Overload**
- **Motor Overload**
- **Output Phase Loss**
- **Supply Mains Overvoltage**
- **Input Phase Loss**
- **Motor Short Circuit**
- **Ground Short Circuit**
- **IGBT Overheating**

Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

Graphical View of the Assessment Performed by the PD100 Device

- The **Overview** tab for MV cubicles fitted with a PD100 partial discharge monitoring device has been enhanced by the representation of a cubicle with a PD100 device in the **Partial discharge** widget. This representation provides the following information for each phase:
 - A bubble that represents the partial discharge index for each phase. The bubble color depends on the index value.
 - Indicators names displayed in tooltips.
 - Exclamation marks if the last measurement is older than 48 hours. In this case, a tooltip displays the last reception date for the indicator, and the indicator name.

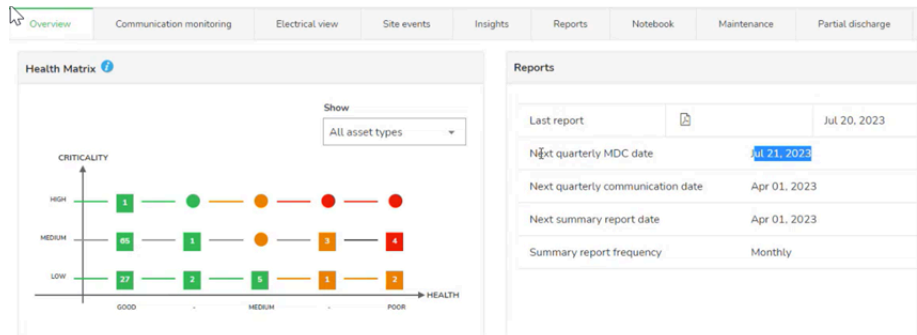


Updates on Fire Prevention Template Report

- Template report front page includes a new offer name: **ESP Electric Fire Prevention** was renamed to **Digital Monitoring - Fire Prevention**.
- The number of assets without fire index are displayed.
- The **New events** chart was updated to improve results display.

New Quarterly Modular Data Center Report

- On the **Overview** tab, in the **Reports** widget, the **Next quarterly MDC date** is added.



- On site level, in the **Overview** tab:
 - In the **Reports** tab, the **Quarterly MDC** option has been added in the drop-down list in **Report type** field. A tooltip allows the user to read the full name of the report type.

The 'New report' form includes fields for Start date, End date, Report type, and various dates. The 'Report type' dropdown menu is open, showing the following options:

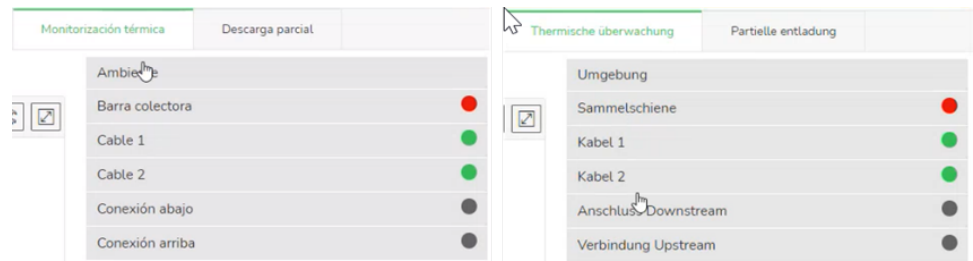
- Customer presentation
- Electric fire prevention
- Other
- Quarterly communication
- Quarterly MDC
- Summary report

A tooltip is visible next to the 'Quarterly MDC' option, displaying its full name.

NOTE: The new report type is not available yet.

Changes in the Thermal Monitoring Tab

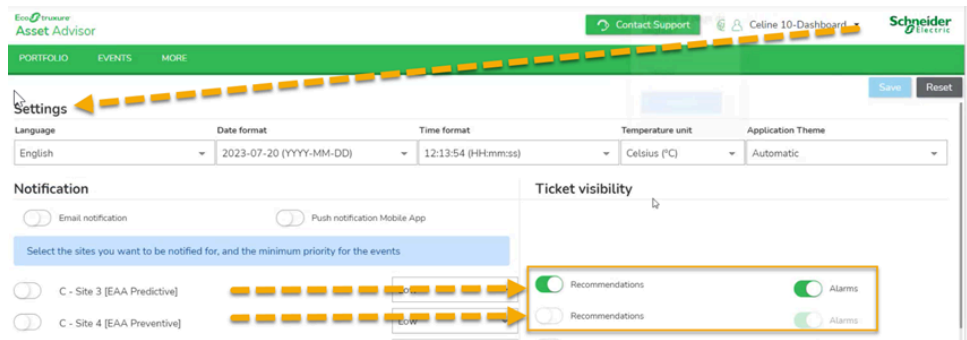
- The menu items are now displayed in alphabetical order.
- The menu is now translated into the EAA web portal language selected by the user. This applies to MV cubicles, oil and dry transformers and LV panels.



New Settings in User Dashboard

Some default values are proposed for the **Ticket visibility** configuration:

- For any site under **Predictive** level, or equivalent, **Recommendations** and **Alarms** ticket types are enabled.
- For any site under **Preventive** level, or equivalent, **Recommendations** and **Alarms** ticket types are disabled.



Third Party API Improvements

With information provided through the new southbound API, four optional fields are added:

- **siteID**
- **siteName**
- **customerId**
- **customerName**

siteId	string (a site identifier)
siteName	string (A string containing the name of the site covered by the message)
customerId	string (A GUID provided by Schneider to uniquely identify the source of the message)
customerName	string (A string containing the name of the entity sending the message)

Notifications on EAA Mobile Application

Updates on EAA mobile application delivered as v 2.3.1 include a simplified login process.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.11

EAA Web Portal New Features

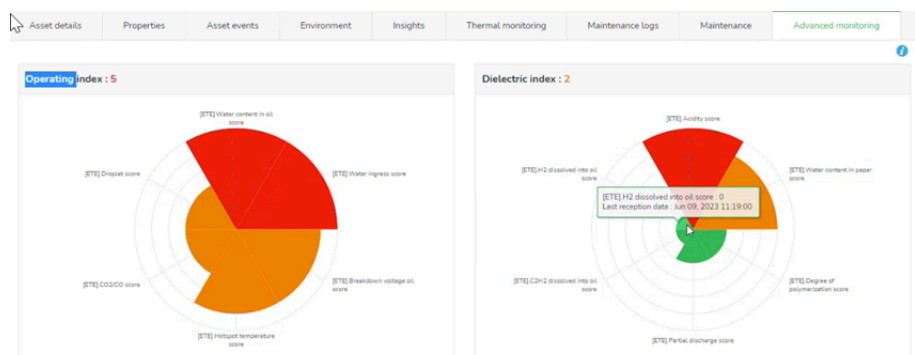
Advanced Monitoring for Oil Transformer

With the EcoStruxure Transformer Expert (ETE) integration into EcoStruxure Asset Advisor, the new **Advanced monitoring** tab is added to manage data relating to the oil transformer asset type. It consists of a compilation of data computed by the ETE cloud solution, adding a broad range of analytical results. This tab displays the following features:

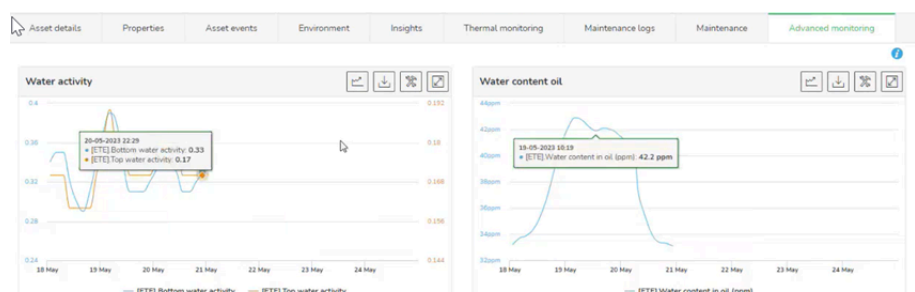
- Four new polar chart widgets:
 - **Solid insulation index**
 - **Aging index**
 - **Operating index**
 - **Dielectric index**

Each widget displays following information:

- An overall value for the index.
- A maximum of six indicators, from which the overall value is calculated.
- Each indicator has the same date as the overall value and is ordered from the highest to the lowest value in a clockwise direction.
- The color of each section in the polar chart widgets depends on the value of each indicator. The overall value in the title of each index is colored according to the same criteria.
- A tooltip provides the name, the value, and the last reception date of the indicator.



- Line chart widgets for **Water activity** and **Water content oil**.



- Last value widget for **Breakdown voltage oil**.

Breakdown voltage oil		
⊞	[ETE].Minimum bottom breakdown voltage lifetime	32 %
⊞	[ETE].Minimum bottom breakdown voltage month	27 %
⊞	[ETE].Minimum bottom breakdown voltage week	17 %
⊞	[ETE].Minimum top breakdown voltage lifetime	28 %
⊞	[ETE].Minimum top breakdown voltage month	23 %
⊞	[ETE].Minimum top breakdown voltage week	15 %

- An information icon that provides additional information about the new indexes:

⊞
Interpretation of Advanced Monitoring indexes
ⓧ

This tab displays information about the measurement from EcoStruxure Transformer Expert (ETE) sensor.

In Asset Advisor application, that sensor is configured as **technical device**.

In the polar widget, the system displays the top six sub-indices with the most recent date of the main indicator. Only the worst-case sub-indices are considered.

If the indicator has a value different than the expected then, the system won't display it.

Below, the interpretation of the measurement from ETE.

1	As a new condition
2	Good condition
3	Acceptable condition
4	Poor condition
5	Extremely serious condition

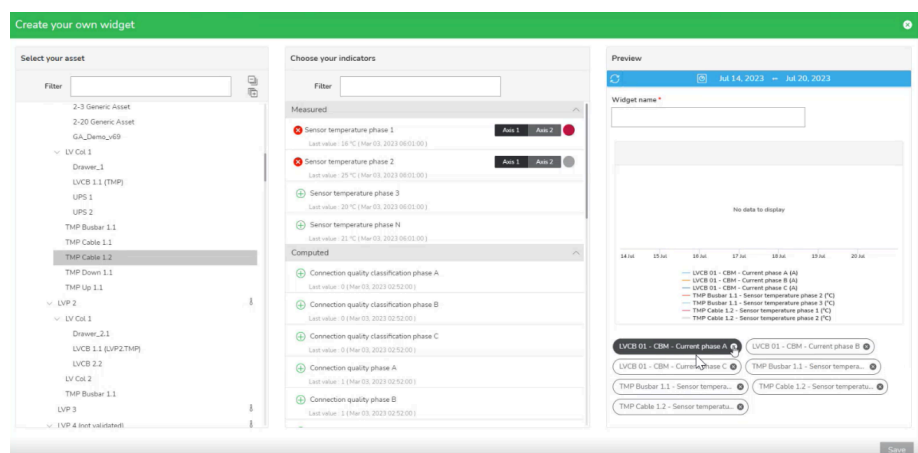
Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

Improvements for Insights Tab at Site Level

The **Insights** tab has been improved with the following features:

- A reset button can be used to remove any widget created at site level. After removal, the **Insights** tab returns to the default configuration.
- At site and asset level, the edited and saved widgets keep the same position in the tab.
- At site level, from the **Create your own widget** window, the user can remove an indicator by clicking the corresponding remove icon at the bottom of the **Preview** sub-window. A tooltip also displays the full name of the indicators with longer names.



Other Improvements and Support for Pilot Offers

The following automated summary reports are available by default for Preventive offer levels:

- EAA Preventive
- ESP Prevent
- ESP Plus
- EcoCare Essential

Notifications on EAA Mobile Application

No updates on mobile application delivered for this release.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.10

EAA Web Portal New Features

Generic API: Southbound Connection

Generic connections keep evolving with southbound connection to retrieve data from other cloud platforms. A southbound connection allows a higher-level network component to send commands to lower-level network components.

EAA web portal evolution consists of third party software. This third party software is provided by a company owned by Schneider Electric. The software makes calculations and helps data ingress into EAA web portal, through the API, to complement EAA analytical capabilities in a seamless user experience. To complete data flow, it is necessary to consider the following elements:

- External data that reaches the Schneider Electric ecosystem through the API supported by Exchange Open EcoStruxure, with a REST API, built as per the following documentation: <https://exchange.se.com/devportal/api/ecostruxure-asset-advisor-api#section/Overview>
- The CSH user has to create a third party gateway selecting **ETE**.

The screenshot shows the 'Gateway Information' tab in the EAA Web Portal. A dropdown menu is open, listing various gateway types: PME, ComX, Other, PaS, PME through Power Advisor, EPAS, PIZCloud, SamotichLabs, DCS Advisor, and ThirdParty (which is checked). An orange arrow points from the 'ThirdParty' option in the dropdown to the '3rd Party' dropdown in the 'Product' section, which is currently set to 'ETE'. The 'Commissioning date' is 16/05/2023, and the 'Description' is 'ThirdParty gateway, to test the communication with AURTRA & the "ETE" TD.'

- Recommended sampling rate: not less than 10 minutes.
- Recommended publication rate: between 30 minutes and 120 minutes.
- The CSH user configures the API with the **External Gateway Id** and individual physical addresses (following naming convention rules) to enable the mapping of gathered data with the data model stored under the corresponding site and assets. The site and assets are identified by their unique IDs across the process.
- The API sends data automatically.
- Any data or measurement sent by the API is stored automatically. The data is displayed using new or existing widgets. Some indexes computation may be impacted by new indicators. Refer to advanced transformer monitoring feature, page 67 to follow the first application of this API.

Thermal Monitoring Points Displayed with Their Own Menu

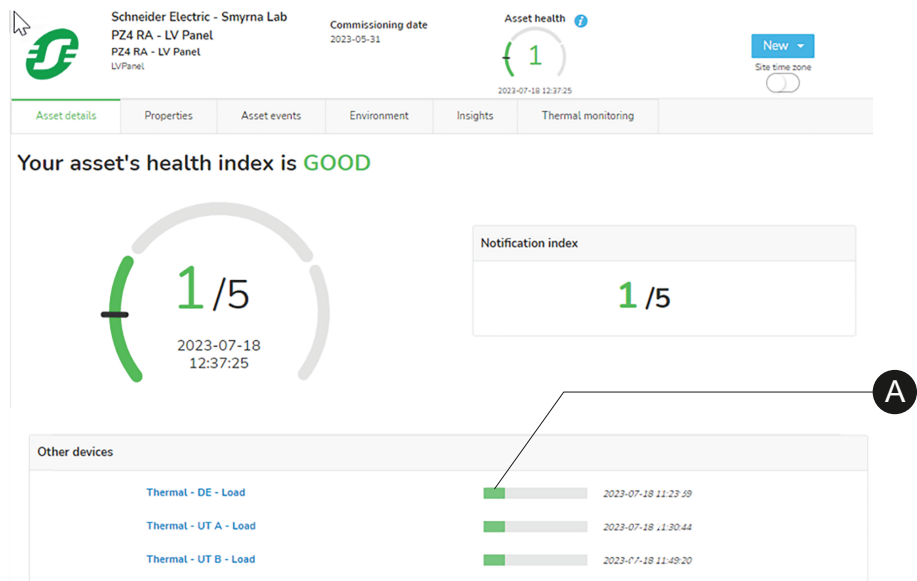
In previous releases, it was only possible to access the thermal monitoring points from the **Site events** tab (from the **Asset** column in the grid), and through a link triggering the **Insights** tab.

The access to thermal monitoring points information has been facilitated.

It is now possible to access thermal monitoring points information from a complete set of tabs (**Asset details**, **Properties**, **Asset events**, **Environment**, **Insights**).

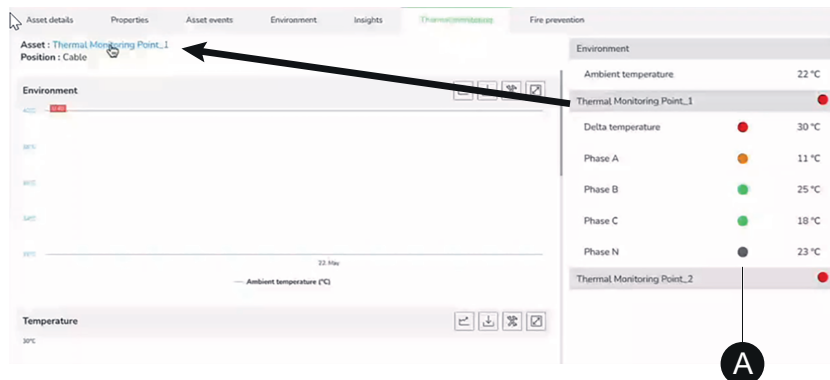
To get such content, the options are as follows:

- For LV panel and ATV600 transformer sub-assets: in the **Asset details** tab, the section **Other devices** shows the list of thermal monitoring points. A link directly displays the new **Insights** tab for the thermal monitoring point.



A. The bar color indicates severity on tickets **In progress**.

- For LV panel and ATV6000 transformer sub-assets (any asset type fitted with sensors): in the **Thermal monitoring** tab, upon selection of a thermal monitoring point in the accordion menu, the name and the position of the thermal monitoring point is displayed on top of the chart.

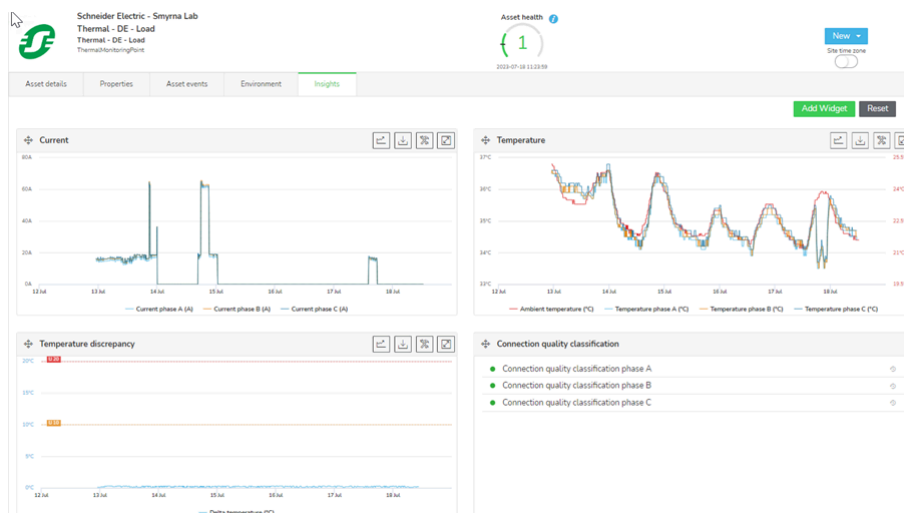


A. Bubble color indicates if the threshold value is exceeded.

Clicking on the name of the thermal monitoring point, and selecting the **Insights** tab displays the following widgets by default:

- Current** for each phase
- Temperature** for each phase
- Predicted temperature** for each phase, applicable when the thermal point is connected to ECTM.
- Temperature discrepancy** with delta temperature among phases

- **Connection quality classification with three indicators**

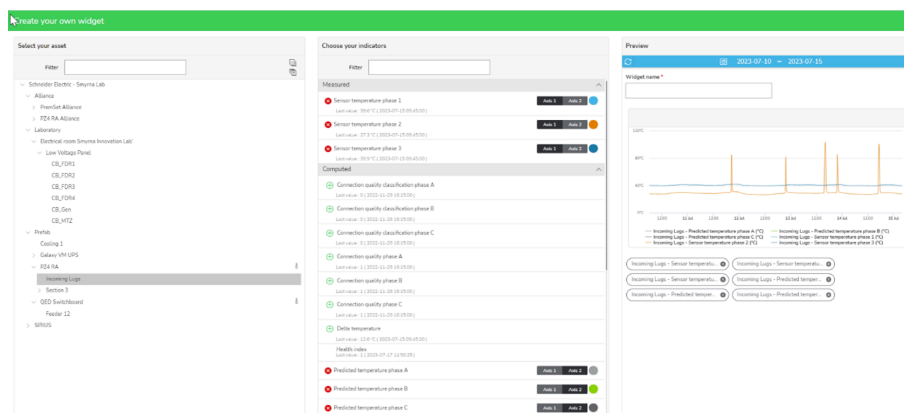


Insights Tab at Site Level to Deliver Indicators Browser

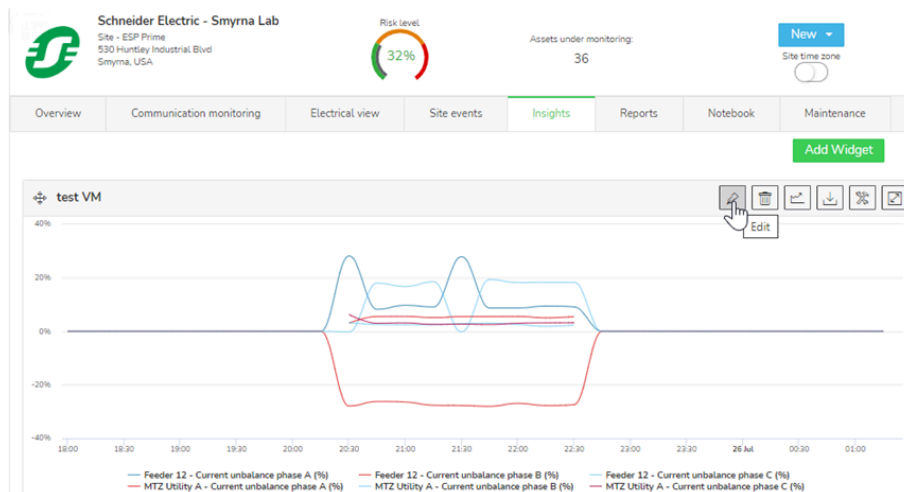
At site level, the new **Insights** tab allows the users to create a custom line chart widget, using multiple indicators from several assets.

Example:

1. The user selects an asset. The indicators column displays the asset indicators. There is a symbol in front of indicators having historical data. The user can customize the new widget (name, axis, curve color, time frame for data).



2. The user saves the created widget. It is displayed in the **Insights** tab. This customized widget can be updated or deleted.

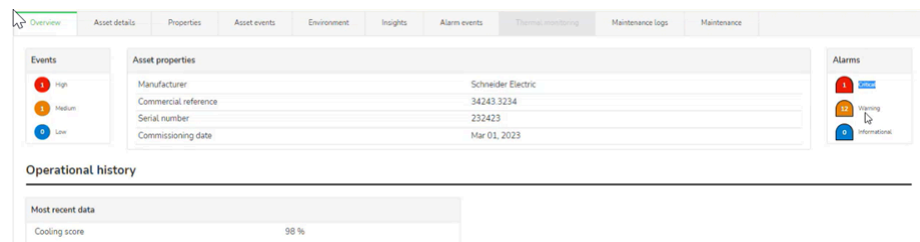


Improvements to EAA Web Portal

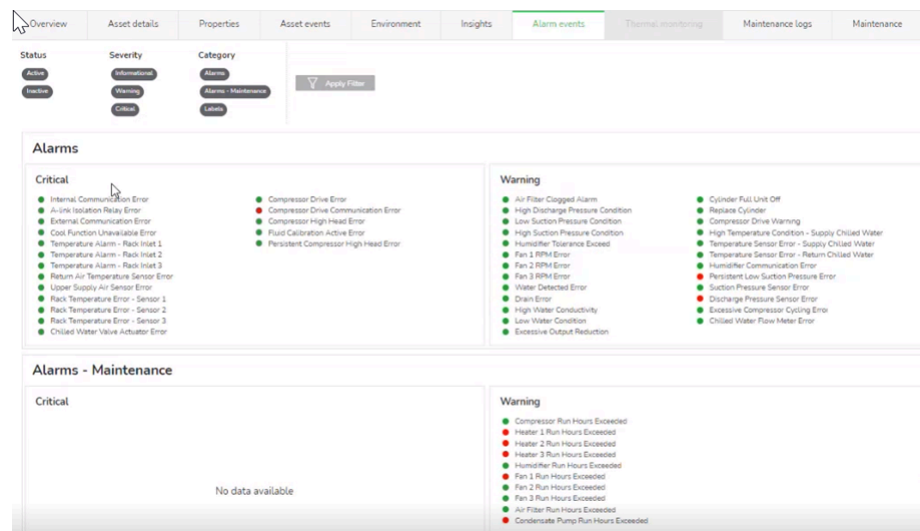
Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

Cooling Asset

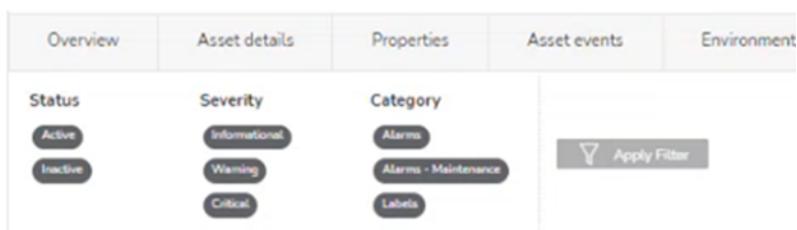
- In the **Overview** tab, the number of active alarms, grouped by their severity, can be displayed. This setting is defined at the alarm level within the cooling asset type.



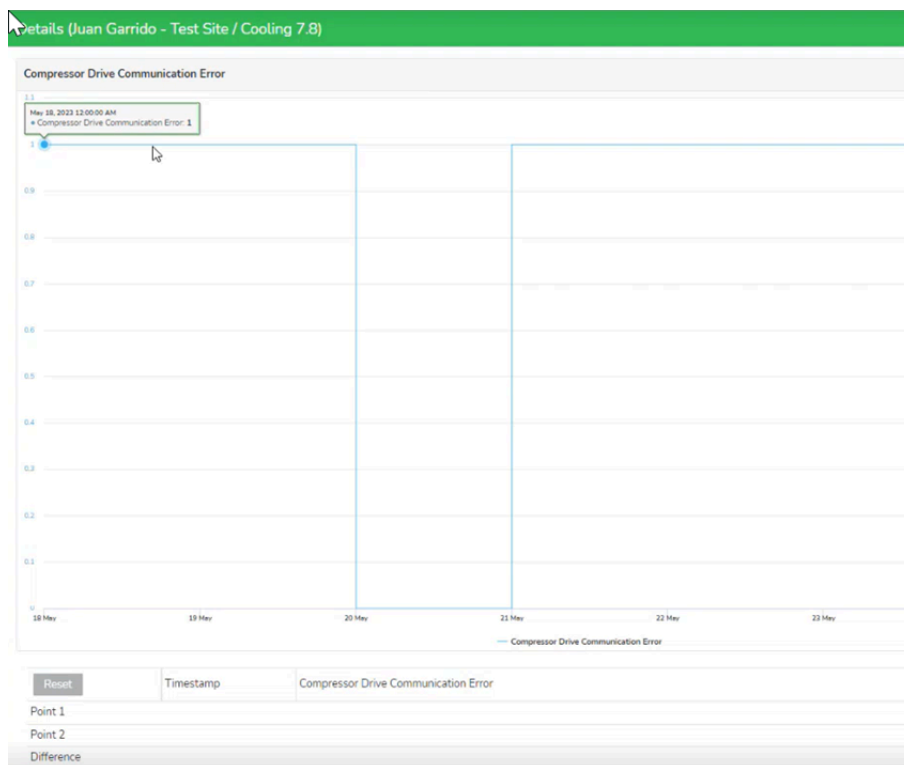
- A new **Alarm events** tab displays the following characteristics: all the alarms defined for the cooling asset.



- The user can filter the alarms by the following characteristics:
 - **Status:**
 - Active
 - Inactive
 - **Severity:**
 - Informational
 - Warning
 - Critical
 - **Category:**
 - Alarms
 - Alarms - Maintenance
 - Labels



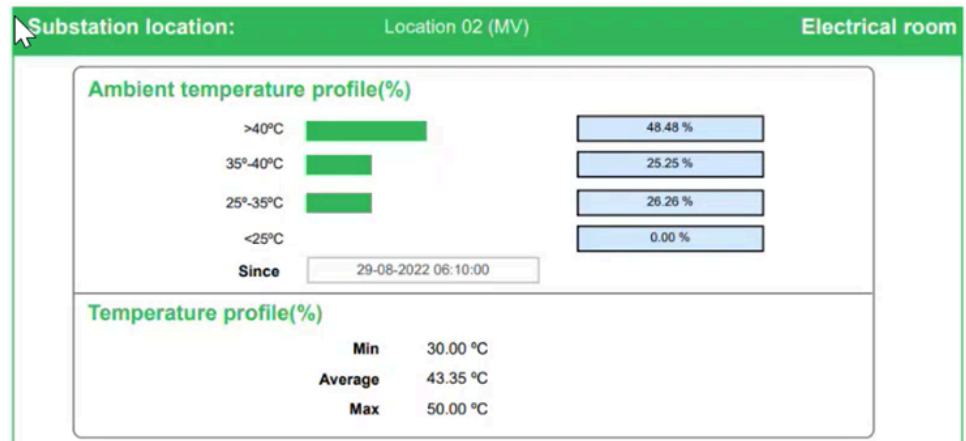
- By selecting the alarm, the user can display a specific history chart with alarm values along the time.



Update of the Report Template for ESP Electric Fire Prevention Offer

The report template has been updated. In the section related to the location, the report displays:

- The profile related to ambient temperature and ambient humidity.
- The minimum, average and maximum values related to temperature profile and ambient humidity.



Notifications on EAA Mobile Application

No updates on mobile application delivered for this release.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.9

EAA Web Portal New Features

Generic API Evolution for Northbound Connection

EAA web portal can deliver information via system-to-system interface under standardized API. The generic API used by customers has been improved with the **webhook** subscription. Customers can subscribe to the **webhook** subscriptions mechanism, in order to pull data timely from the API and get all the information from EcoStruxure Asset Advisor. With the new feature, it is possible to configure predefined calls which retrieve data anytime a certain variable has changed its value. EcoStruxure Asset Advisor pushes those new values immediately, without waiting for the next batch of information. This mechanism reduces time to get updates and overall data flows.

- Customers can subscribe to the specific events that are most appropriate to their needs: ticket, asset health, site risk level.
- The platform reports any updates with notifications on subscribed items directly to the URL (callback) provided.

Within standard API, there are different methods to manage subscriptions:

- To set new subscriptions
- To get relevant updates from those subscriptions
- To cancel subscriptions
- To use parameters like sites to filter information

Those methods are applicable to three types of objects to get subscribed:

- **Ticket** subscription:
 - **Get ticket subscriptions** (filtering all tickets by priority and lifecycle status)
 - **Create ticket subscription**
 - **Get ticket subscription** (one particular subscription)
 - **Update ticket subscription**
 - **Delete ticket subscription**
- **Health** subscription:
 - **Get asset health subscriptions** already set for health indexes
 - **Create asset health subscription** (using index level to get notification as a parameter)
 - **Get asset health subscription**
 - **Update asset health subscription**
 - **Delete asset health subscription**
- **Site Risk Level** subscription:
 - **Get site risk level subscriptions** (to get all subscriptions)
 - **Create site risk level subscription**
 - **Get site risk level subscription** (to get a specific subscription)
 - **Update site risk level subscription**
 - **Delete site risk level subscription**

To support development effort by our customers, a dedicated web page provides documentation and access to support:

- Product page in Exchange Developer Portal: <https://exchange.se.com/develop/developer-resources/asset-advisor-api>
- Documentation page in Exchange Developer Portal: <https://exchange.se.com/devportal/api/ecostruxure-asset-advisor-api>

ManageSubscriptionsApi Manage the Subscriptions and Filters related to Notifications sent to your platform			^
GET	/webhooks/subscriptions	Get Subscriptions	▼ 🔒
POST	/webhooks/subscriptions	Set all Subscriptions	▼ 🔒
PUT	/webhooks/subscriptions/tickets	Update the tickets subscription for the current user	▼ 🔒
PUT	/webhooks/subscriptions/healthIndex	Update the health index subscription for the current user	▼ 🔒
PUT	/webhooks/subscriptions/globalRiskLevel	Update the global risk level subscription for the current user	▼ 🔒
ManageWebHooksApi Get, Set and Test Webhooks for the current customer			^
GET	/webhooks/events	Get Events WebHook	▼ 🔒
POST	/webhooks/events	Set Events WebHook	▼ 🔒

Temperatures in Fahrenheit (°F)

The EAA web portal can display temperatures in Fahrenheit degrees, according to the user profile settings.

- In **Edit settings**, a new field has been included to allow the user to choose the temperature unit to be displayed in the EAA web portal:
 - Celsius (°C)**, or
 - Fahrenheit (°F)**
- When Fahrenheit (°F) is the selected option, all temperature charts display temperatures in Fahrenheit. Data storage remains in Celsius (°C).

[Contact Support](#)
English ▼
Juan Garrido Gonzalez ▼

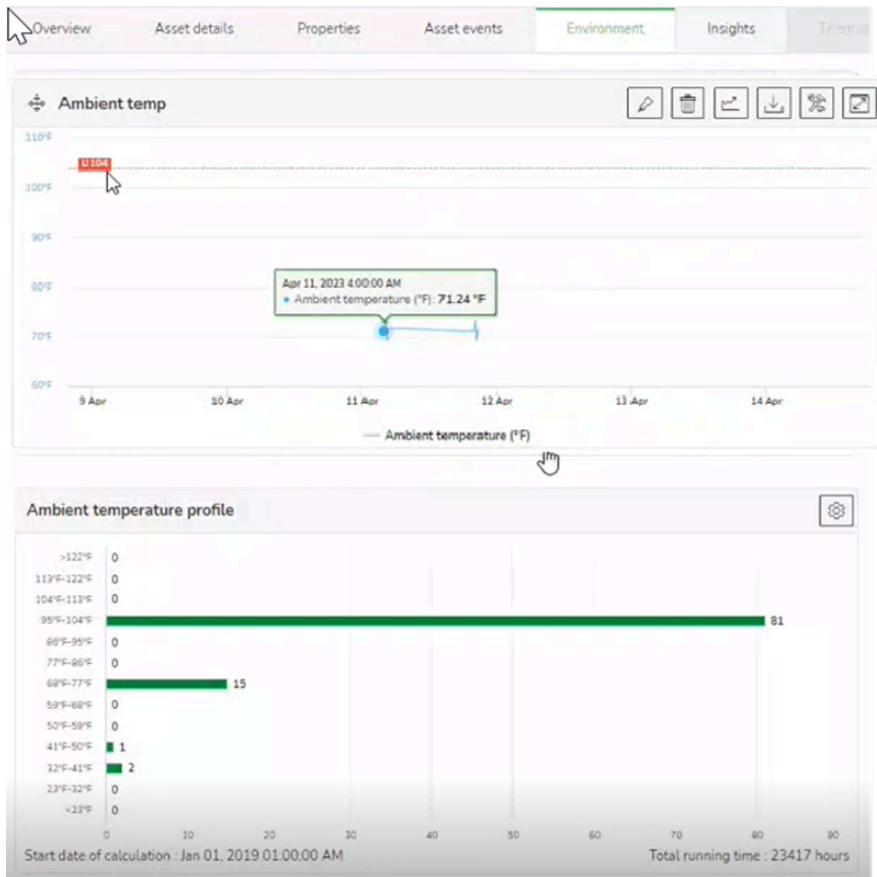
Temperature unit

Celsius (°C)
Celsius (°C)
Fahrenheit (°F)

Application Theme

Automatic

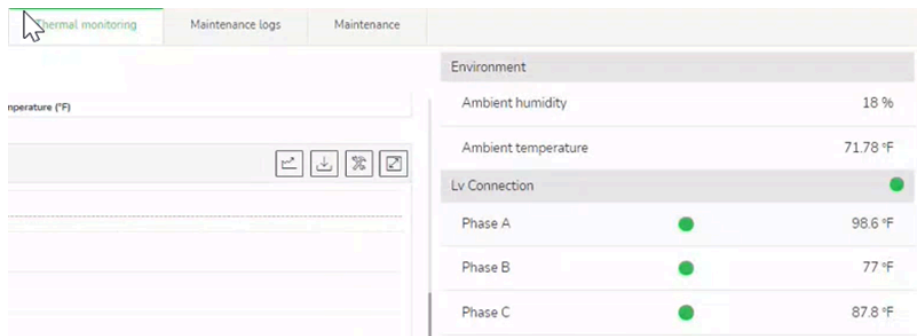
- Conversion is visible for indicators and measurements of temperature and temperature discrepancy. In the EAA web portal, the Fahrenheit unit is visible for:
 - Time series charting, including tooltip, and threshold lines
 - Thresholds settings, and historical tracking on them
 - Trend calculations
 - Temperature profile bands



- Conversion to Fahrenheit also applies to asset properties.

Thermal	Corrosion class	Thermal class
Maximum ambient temperature 104 °F	Class C3	Average winding to average oil 68 °F
	Metal Steel	Enclosure affect cooling False
		Enclosure rise 32 °F
		Hot spot temperature rise 73.4 °F
		Top oil temperature rise 140 °F
		Winding temperature rise 149 °F

- Fahrenheit is also visible under the **Thermal monitoring** tab, within the accordion menu and for the specific widgets, including **Predicted temperature** chart.

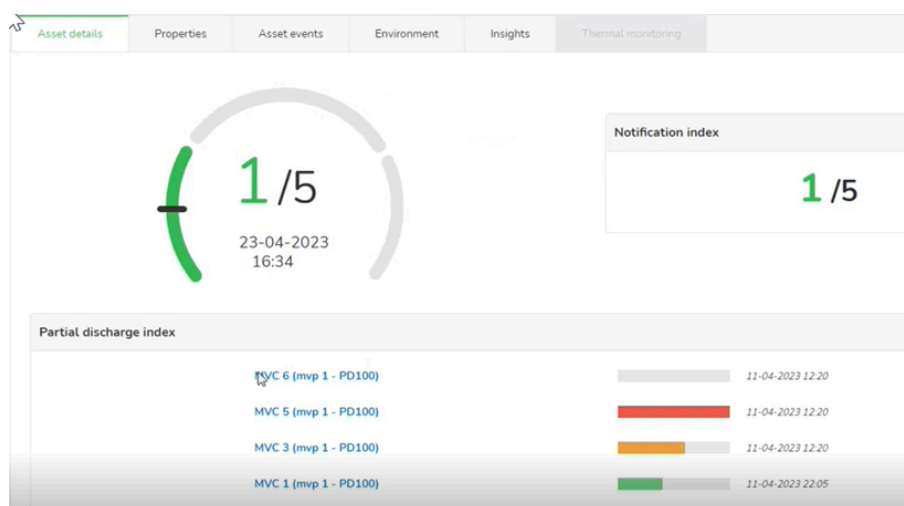


Partial Discharge Evolution

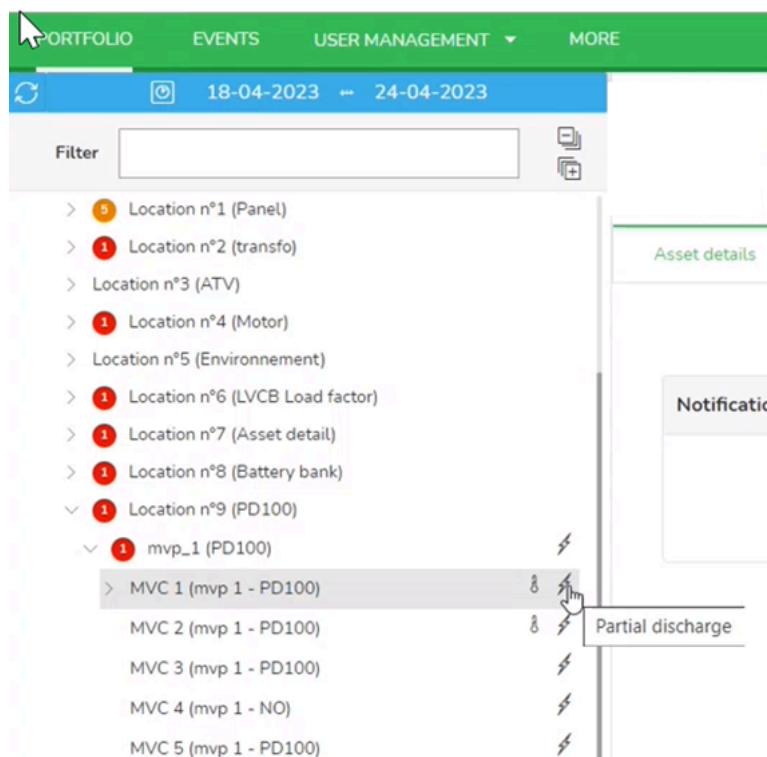
The EAA web portal displays additional functionalities around MV cubicles equipped with the PD100 partial discharge monitoring device:

- For the MV panel, the **Asset details** tab displays a new section named **Partial discharge index**. For each MV cubicle (child asset type under MV panel), the following information is displayed in the **Partial discharge index** area:
 - a progress bar showing the index value
 - the last reception time

When the user clicks on any MV cubicle name, the corresponding MV cubicle **Overview** tab is prompted automatically.



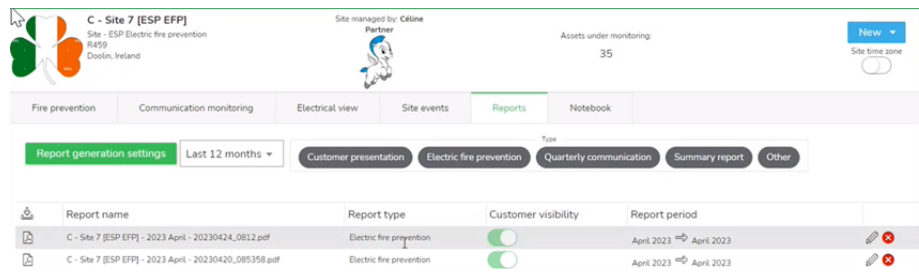
- At site level, a new tab is displayed: **Partial discharge**. This tab shows the same single line diagram as the one in **Electrical view**, and fetches any MV cubicle with a partial discharge monitoring device, and their **Partial discharge index** with a specific color regarding the index value. When the user clicks on any MV cubicle colored icon, the **Partial discharge** window opens.
- At site level, the user identifies those MV cubicles having a partial discharge monitoring device by a specific icon.



New Report for ESP for Fire Prevention Offer

For sites with ESP offer for Fire Prevention, the EAA web portal allows the user to generate a new **Electric fire prevention** report.

- Clicking on the **New** button, then on **New report** triggers an automated report for the time frame selected in the dates picker.
- After a few minutes, the report comes up into the **Reports** tab for the site.



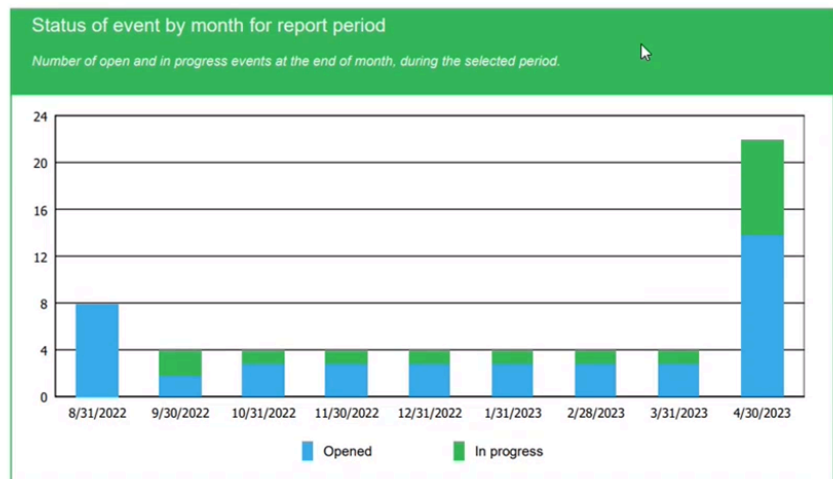
- The report displays a new layout:
 - On the front page:
 - New report title, with service offer name.
 - Dates: selected time frame for content selection, and creation date.
 - Name of the user who generated the report.
 - Customer (end user) and site name, and the picture associated to the customer when available.
 - Partner name managing this customer site, and the picture of the partner if applicable.



- There is a table of contents that displays the following information:
 - Summary sections with connections information: contract starting date, number of assets connected, communications status and date when data started to flow (Go live date).
 - The **Fire Index Matrix** for the period selected, with informational text about the matrix.
 - The fire index history during the selected period, only if there were events with status update. Only if the fire index and monitoring level are different from zero, the picture in **Electrical view**(single line diagram) without the assets condition bubble.
 - Summary table with events sorted by priority and status.
 - Chart to summarize the number of events that are **Open** or **In progress** at the time the report was created.
 - Chart to summarize the number of events that were new during the report time frame.
 - Environmental information.

Number of events that are open or in progress

22

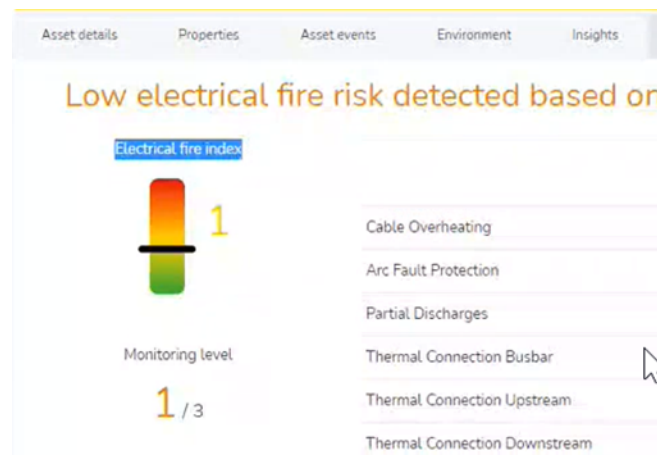


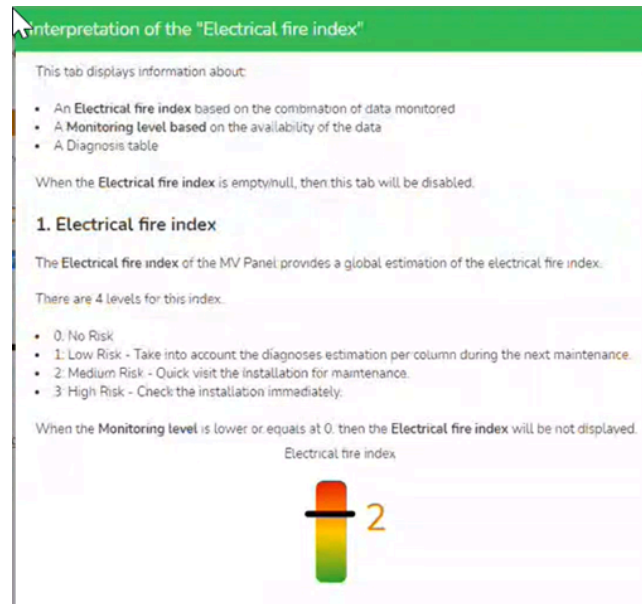
Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

Fire Risk Index Renaming

The **Fire risk index** has been renamed to **Fire index**. No changes were made to the content or to the index calculation method.



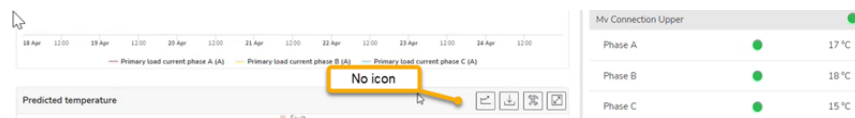


Thermal Monitoring Tab

In the **Thermal monitoring** tab, a few improvements facilitate the access to the right information:

- When selecting a position, the accordion menu opens, with the different temperatures values. It is possible to expand the view for the temperatures, which are sorted alphabetically.
- The neutral phase temperatures are not displayed if there is no data recorded.

In the **Thermal monitoring** tab, in the **Predicted temperature** widget, the icon to analyze used to be displayed to all users. It is now limited to internal users (CSH and partner users).



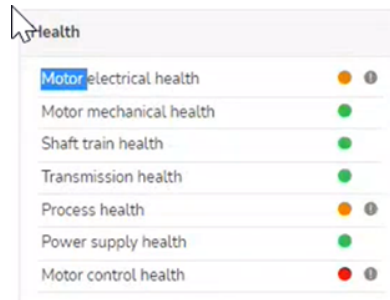
LV Circuit Breaker Position in the Overview Tab

- In the **Overview** tab, a new line has been included in the widget **Operations and trips**: the indicator **Circuit breaker closed** (Boolean type).
- The information displayed is a green button when the circuit breaker is in the closed position.
- By clicking on the value, the user can visualize the evolution of the indicator over time (functionality available for any indicator).

Total operation number	4 Op
Number of SDE trips (Computed)	0 Op
Number of trips cumulated	0 Op
Circuit breaker closed	●

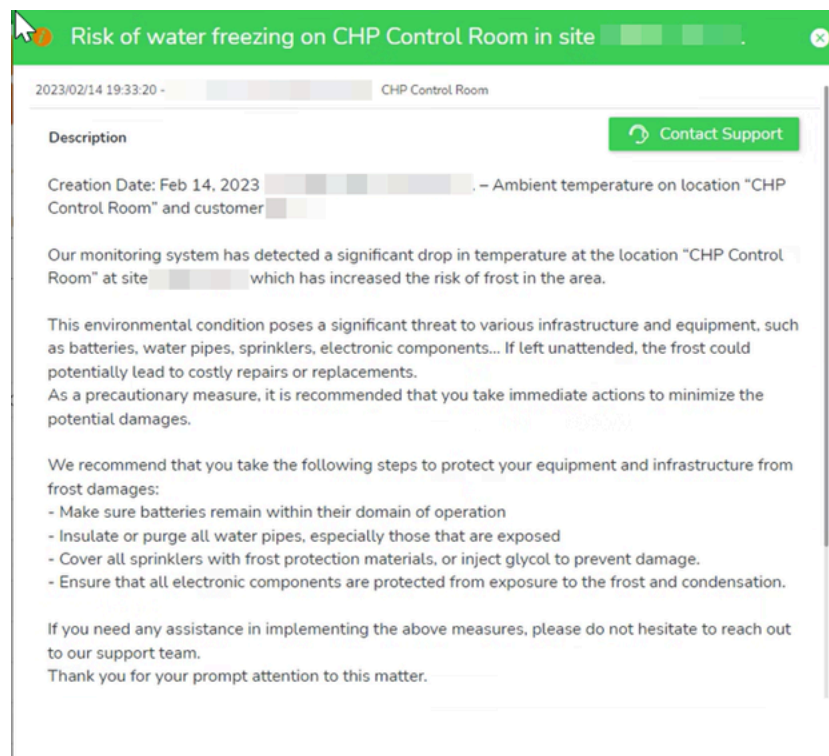
Electrical Health for Induction Motor

For the induction motor asset type, the **Electrical health** indicator has been renamed to **Motor electrical health**, to avoid confusion with other drive train components.



Other Improvements

- Related to the method to compute connection quality and temperature discrepancy for the three phases, monitoring level is now considering the whole information in a more consistent way to compute all items and assign monitoring level.
- In the threshold pop-up window, the trends can now be added independently from the status being active.
- For water freezing detection, a new rule identifies when ambient temperature drops below 0 °C. This allows the user to identify the potential issues:
 - For facility in general.
 - For water based systems in particular, such as sprinklers and water pipes.
 In such a case, an alarm is triggered.



Notifications on EAA Mobile Application

No updates on mobile application delivered for this release.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.8

EAA Web Portal New Features

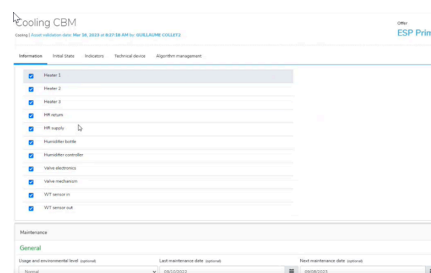
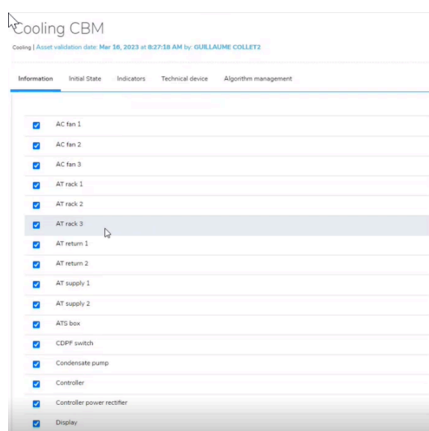
EcoCare Offer Levels

EcoCare offer levels (Essential, Advanced, Advanced+) are part of the services matrix. Specific content for the new EcoCare offer is not within the scope of this release note.

- EcoCare offer levels are available but the EcoCare subscriptions will be deployed with different contents, at different times. The CSH is able to select the optional features linked to each new level, similarly as they do for EcoStruxure Service Plan.
- The first offer to be configured is EcoCare for modular data centers, which has been extensively documented in previous release notes. Some features have been added for:
 - Specific asset types (UPS, cooling unit, container)
 - PME through Power Advisor (PA) gateway configurations
 - Assisted provisioning

Cooling Unit Evolution

- Evolution of data model, with 35 subcomponents or subassemblies, maintenance dates and environmental conditions information.



- EAA web portal computes the aging for each assembly, based on cooling unit type and model. It gathers information from the cooling unit (operating times, temperatures, rack inlet temperatures and ambient temperature) and from some new asset parameters (cooling water parameters, number of failovers, fan speed).

GAF aging

Input indicators:

- Circulation pump operating time
- Condensate pump operating time
- Dust level
- Entering chilled water temperature
- Fan 1 operating time
- Fan 2 operating time
- Fan 3 operating time
- Fan power supply 1 operating time
- Fan power supply 2 operating time
- Fan speed
- Glycol percentage
- Heater 1 operating time
- Heater 2 operating time
- Heater 3 operating time
- Leaving chilled water temperature
- Number of failover
- Rack inlet temperature 1
- Rack inlet temperature 2
- Rack inlet temperature 3
- Return air relative humidity
- Return air temperature
- Supply air relative humidity
- Supply air temperature
- Unit operating time
- Water quality

- A **Maintenance logs** tab has been added to report maintenance operations such as product replacement, restart of equipment, or replacement of any sub-assembly, and other equipment maintenance tasks.

More

Lattes

Cooling test GAF

Commissioning date

Asset health

Maintenance log for: Cooling test GAF

Created by: Victor Marina Ramirez 2023-04-15 11:45:43

Event date *

03/30/2023 11:45 AM

Event name *

Restart

Event code

-1-Restart of the equipment after a shutdown

0-Nothing done

1-Maintenance

2-Product replacement

11-AC fan 1 replacement

12-AC fan 2 replacement

13-AC fan 3 replacement

14-Display replacement

15-AT supply 1 replacement

16-AT supply 2 replacement

17-AT return 1 replacement

18-AT return 2 replacement

19-AT rack 1 replacement

20-AT rack 2 replacement

21-AT rack 3 replacement

22-WT sensor in replacement

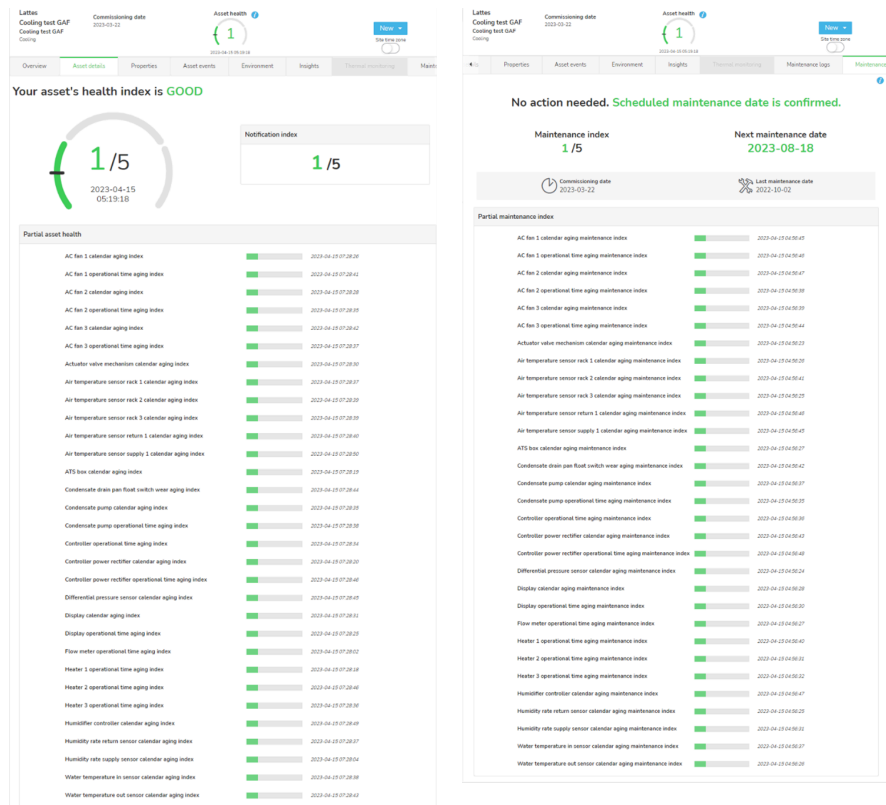
23-WT sensor out replacement

24-HR supply replacement

25-HR return replacement

Save Cancel

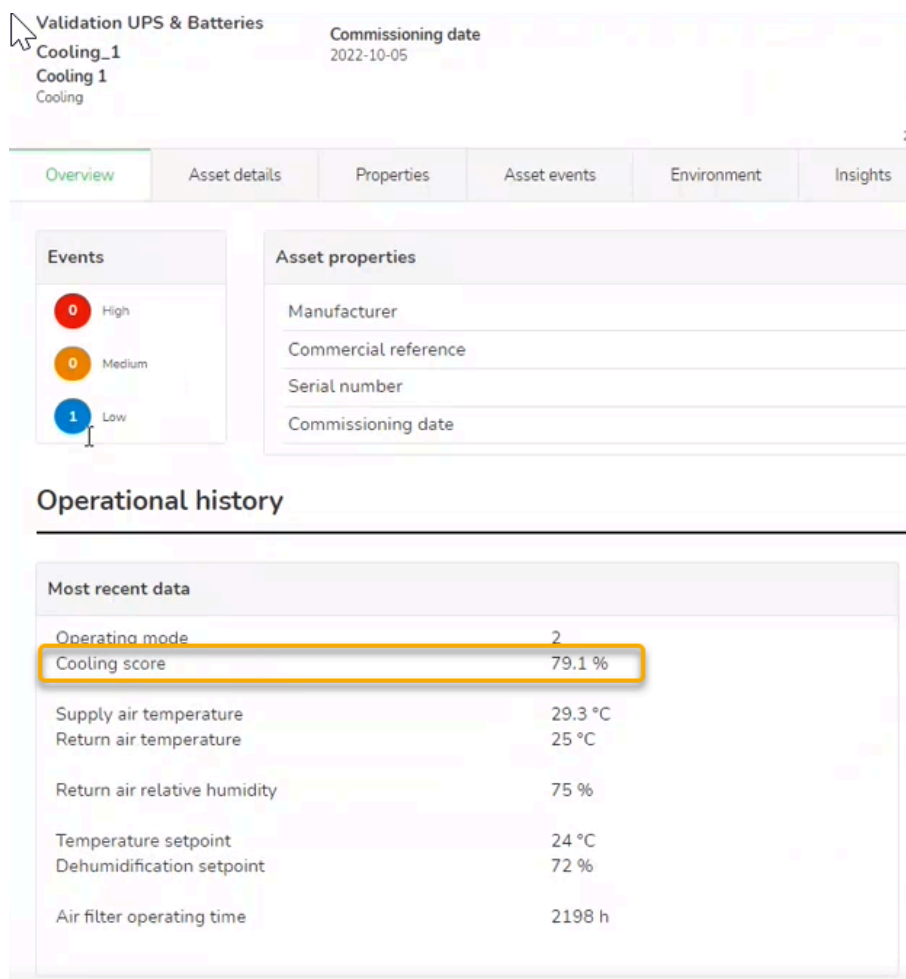
- Based on aging indicators, EAA web portal computes:
 - Partial health indexes
 - Asset health indexes
 - Partial maintenance indexes
 - Asset maintenance indexes
 - Next maintenance dates based on cooling unit condition



- The computed information is aggregated at container, location and site levels for **Maintenance**, **Asset events** and **Overview** tabs.

- A new technical device has been added to support asset health computation, with information from cooling unit alarms.

This technical device includes algorithms that process events and alarms, and store results in intermediate variables called **Alarm words**. **Alarm words** are used to calculate the cooling score, which in turn is used to calculate the health index of the cooling unit.



New Technical Device: PD100

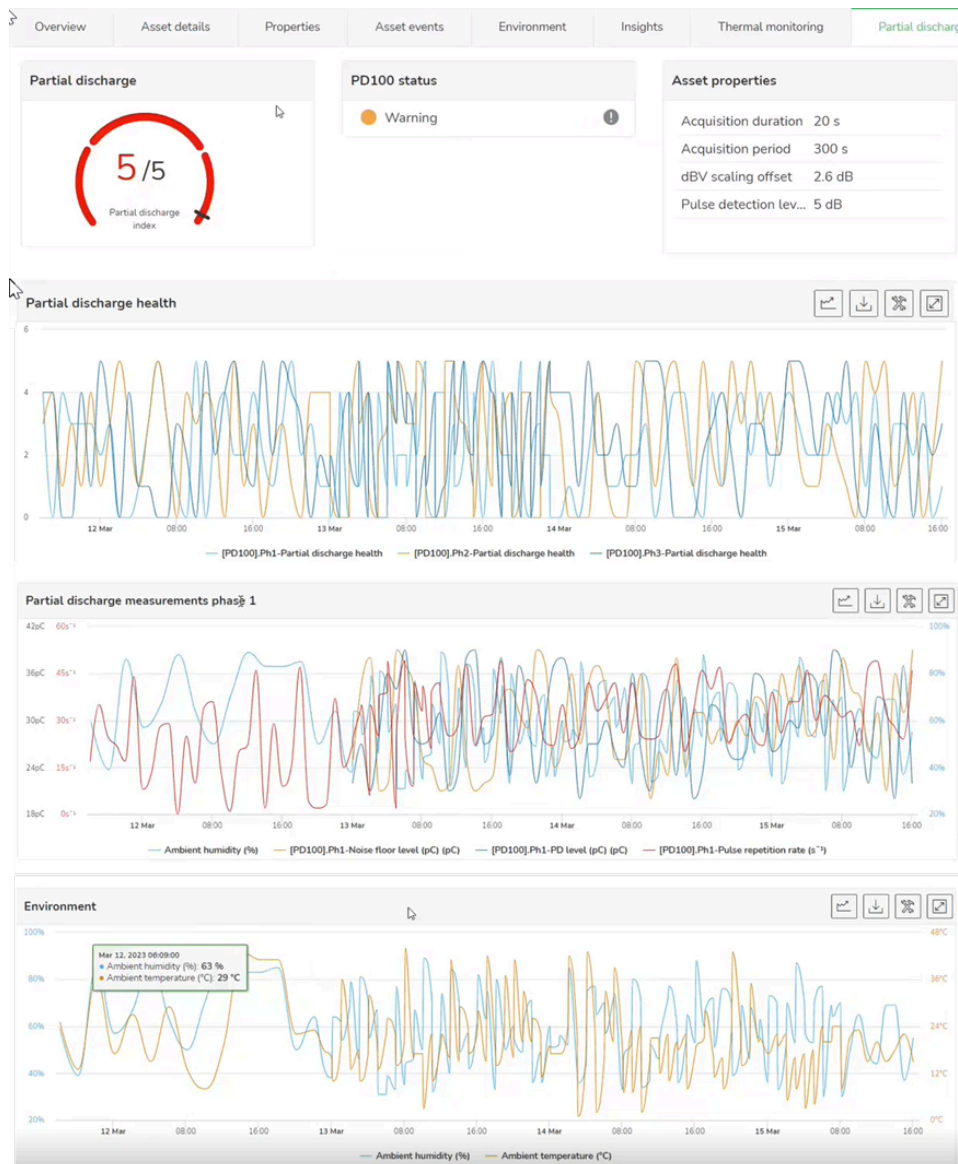
The PD100 partial discharge monitoring device has been integrated in the EAA web portal. It is a Schneider Electric product to monitor partial discharges across MV insulations in MV switchgears.

For MV cubicles where a PD100 monitoring device is installed, the EAA web portal displays:

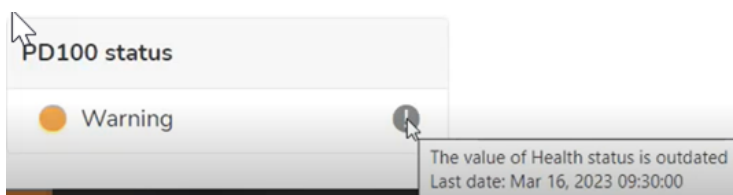
- A new tab to view all information related to PD100 monitoring device in several new widgets.
- Partial discharge** index (displayed as a gauge), corresponding to the new index computed for the cubicle.
- PD100 status** read from the PD100 monitoring device (last value) with a colored bubble and some text related to the partial discharge status.
- Asset properties** (only properties with a configured value).
- Partial discharge health** for any phase, displayed against time.
- Other measurements for each phase in a widget with 3 vertical axes:
 - PD level** and **Noise floor level** (in pC)
 - Pulse repetition rate** (in s⁻¹)
 - Ambient humidity** (in %)

- **Environment:**
 - **Ambient humidity** (in %)
 - **Ambient temperature** (in °C)

All these indexes represent an initial step in the analytics of partial discharge monitoring when a PD100 monitoring device is installed. These widgets do not apply to partial discharge monitoring devices other than the PD100 monitoring device.



- Of these new widgets, two are copied in the **Overview** tab for MV cubicle:
 - **Partial discharge** index (displayed as a gauge),
 - **PD100 status**. In addition to the colored bubble, an exclamation mark is displayed if the last value computed is older than two days.

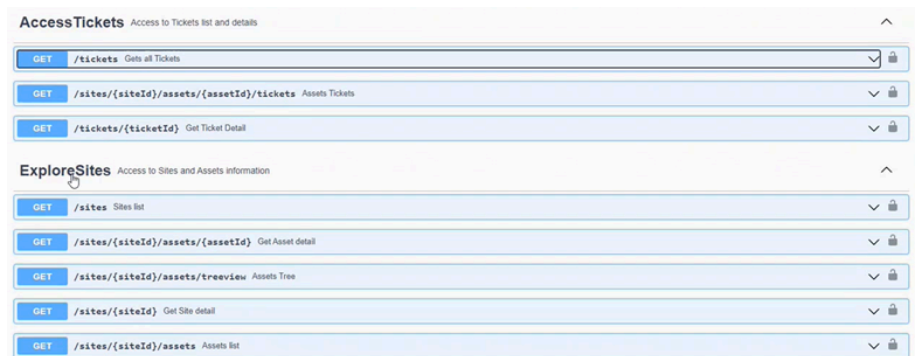


Generic Northbound API for Customers

The goal is to provide a northbound API to customers so that they can retrieve their data, and eventually integrate it into their own asset management systems (a Machine-to-Machine service). A southbound API will come later to bring data into the EAA web portal, focused on partners with analytics.

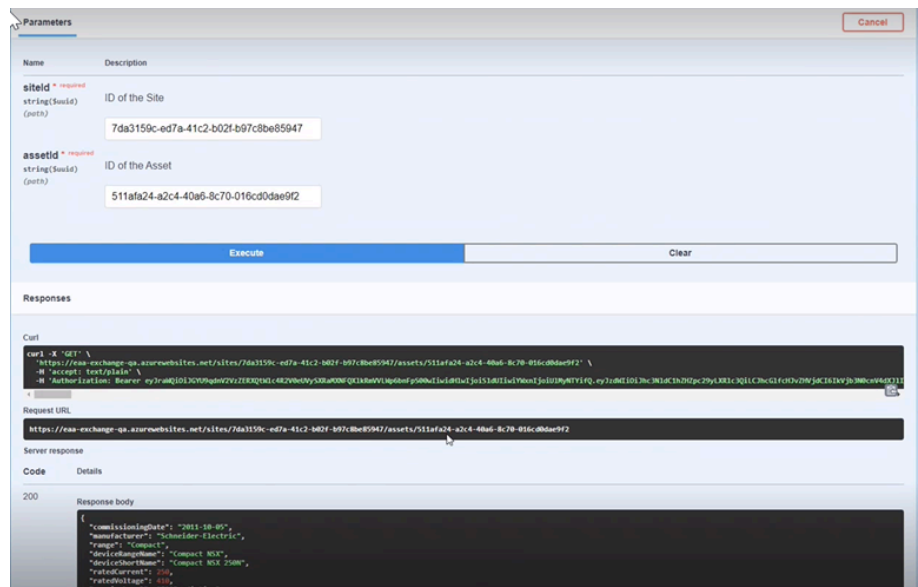
Throughout the previous releases, there were different evolutions for the northbound connection. They are summarized in this release note:

- Customers can use the following methods to retrieve data from the EAA web portal:
 - Get sites list for a defined time frame.
 - Get all tickets for a defined severity within a defined time frame.
 - Get site detail.
 - For a defined site, get the asset detail, asset tree, asset list.
 - For a defined site and asset, get asset tickets, ticket detail.



- Customers have to develop their own software code:
 1. To get authorization, in order to connect with the Schneider Electric Exchange service.
 2. To apply the methods listed above.

The software code can be tested on the swagger page, for example asset details:



Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

Visibility on Thermal Monitoring Points

- In the **Asset events** tab, the LV panel asset type displays all the tickets related to the thermal monitoring points of the LV panel.

The screenshot shows the 'Asset events' tab for a 'LV Panel' asset. The top navigation bar includes 'Asset details', 'Properties', 'Asset events' (selected), 'Environment', 'Insights', 'Thermal monitoring', and 'Fire prevention'. A warning banner at the top states: 'The communication with the device has been lost since Nov 27, 2022 02:25:00 PM'. Below the navigation bar, there are filters for Ticket ID, Status (Pending, Open, In Progress), Priority (High, Medium, Low), Type (Alarm, Recommendation), Visibility (Visible, Not Visible), Date (Start date, End date), and Opened by me. A table lists the following events:

Priority	Id	Type	Asset	Ticket	Status	Ticket Owner	Creation Date	Detail	Action
High	23044	Recommendation	1A1-Busbar	Error updating model for Virtu...	Pending	Ticket Owner	Mar 23, 2023 01:01:08 AM	Since 103 hours and 42 minutes	Open
High	24856	Recommendation	Breaker-1A1 FN	Next maintenance date must b...	Pending		Mar 08, 2023 03:21:21 AM	Since 461 hours and 20 minutes	Open
High	23823	Recommendation	Breaker-2B1	Ticket created for asset 'Break...	Pending		Feb 08, 2023 03:08:12 AM	Since 1133 hours and 33 minu...	Open
High	18384	Recommendation	test indicators	test indicators maintenance in...	In Progress	Garrido Gonzalez Juan	Nov 18, 2022 05:28:20 PM	Not visible	Close
High	14449	Alarm	Breaker-2B1	Communication issue in Break...	Opened		Sep 30, 2022 02:00:36 PM	Opened by	Acknowledge Close
High	13403	Recommendation	Breaker-2B1	Adjust the hysteresis	In Progress	Garrido Gonzalez Juan	Sep 07, 2022 04:49:14 PM	Visible	Close

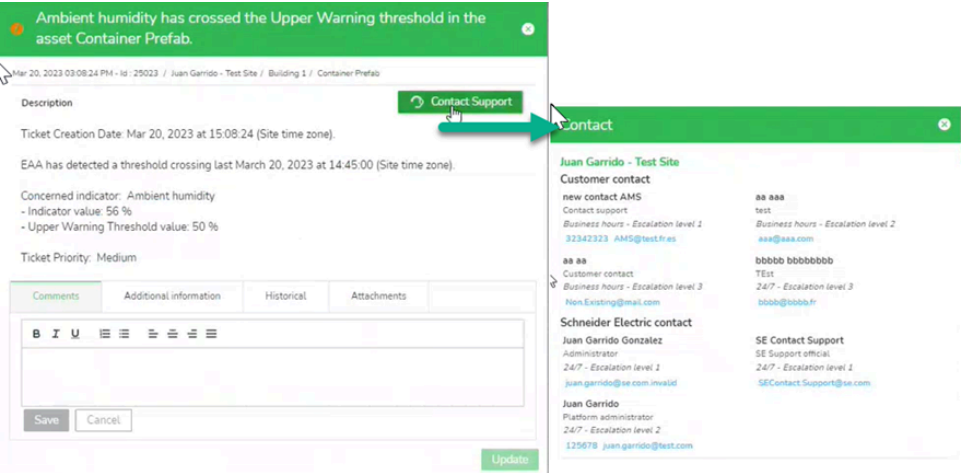
- It is possible to jump from these event lines to the thermal monitoring point widgets by clicking on the asset name hyperlink. This action opens a specific **Insights** tab. From here, it is possible to add custom widgets for thermal monitoring points.

The screenshot shows the 'Insights' tab for the same 'LV Panel' asset. The top navigation bar includes 'Asset details', 'Properties', 'Asset events', 'Environment', 'Insights' (selected), 'Thermal monitoring', and 'Fire prevention'. A warning banner at the top states: 'The communication with the device has been lost since Mar 16, 2023 01:45:00 PM'. Below the navigation bar, there are buttons for 'Add Widget' and 'Reset'. The main area displays four widgets:

- Current**: A line chart showing current phase A (A), current phase B (B), and current phase C (C) over time. The chart shows 'No data to display'.
- Temperature**: A line chart showing temperature phase A (A), temperature phase B (B), temperature phase C (C), and ambient temperature (T) over time. The chart shows 'No data to display'.
- Predicted temperatures**: A line chart showing predicted temperature phase A (A), predicted temperature phase B (B), and predicted temperature phase C (C) over time. The chart shows 'No data to display'.
- Temperature discrepancy**: A line chart showing delta temperature (T) over time. The chart shows 'No data to display'.

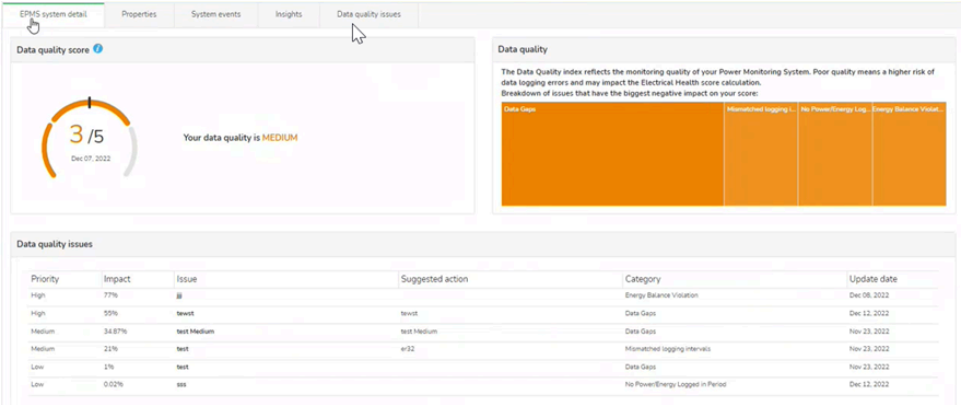
Contact Support Button

A **Contact Support** button is displayed in the ticket details window, to facilitate access to contact details during ticket resolution.



PMS Asset Type Renamed to EPMS

Power Monitoring System (PMS) asset type has been renamed to EPMS (Electrical Power Monitoring System) (offer ESP for Power and Asset Management).



Other Improvements and Support for Pilot Offers

Minor Improvements on Thermal Monitoring Tab

- In the **Thermal Monitoring** tab, the time to display the accordion menu has been reduced.
- When a thermal point is selected on the accordion menu, widgets are displayed only if the indicator has historical data.
- Minor improvements have been applied and some bugs have been fixed.

Notifications on EAA Mobile Application

Updates on [EAA](#) mobile application delivered as v 2.3.0 include an update certificated by security.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.7

EAA Web Portal New Features

ECTM Analytics

ECTM analytics is the tool which is used to predict temperatures on an electrical connection thermal point. This predicted temperature is now visible from a widget in the **Thermal monitoring** tab:

- A widget displays the predicted temperatures for all users, including end user and CSH viewers.
- The widget also displays confirmed faults.



Cooling Unit Asset Type

There are new features for the cooling unit asset type:

- Additional properties or settings on the **Properties** widget: **Range**, **Device range name**, **Device short name** (linked to previous value when using drop down lists).

The screenshot shows the 'Properties' widget for a Cooling Unit Asset Type. The 'Product' section includes fields for Manufacturer (optional), Commercial reference (optional), and Serial number (optional). The 'Range' section includes a dropdown for Range (optional) and a dropdown for Device range name (optional). The 'Single line diagram' section includes fields for X-axis coordinate (optional) and Y-axis coordinate (optional). A dropdown menu is open for 'Device short name (optional)', showing options: Unifair ACRC 602, Unifair ACRC 602, and Other.

- Additional measured indicators: compressor 1 operating time, fan operating time for 1, 2 and 3 fan units, and the heater operating time for 1, 2 and 3 heater units.
- New computed indicators: two logic inputs to collect the alarms from the cooling unit.
- Computed indicators: **Cooling score**, **Health index** and **Health index cooling score** (validated index), have an impact on the **Health index** of the asset. For these three indicators, there are three relative algorithms.

Cooling new indicators

Asset validation date: Feb 14, 2023 at 2:58:18 PM by: unknown

Other: ESP Power & Asset management

Information				
Information	Initial state	Indicators	Technical device	Algorithm management
Computed				
Core				
Name	Last value	Last computation date		
Alarm word 1				
Alarm word 2				
Cooling score	93.76 %	Feb 13, 2023 12:00:00 AM		
Cooling score index	3.00	Feb 27, 2023 2:58:47 AM		
Health index	3.00	Feb 27, 2023 3:04:20 AM		
Health index cooling score	3.00	Feb 2, 2023 1:00:00 AM		

- For **Partial health index** (based on the **Health index cooling score**) results are ranked in the opposite way as usual: a 100% value means that it is totally fine. The corresponding **Health index** is set to 1. When the score goes down, **Partial health index** goes up.

Index	Value
0	NULL
5	34
4	50
3	67
2	84
1	NULL

Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

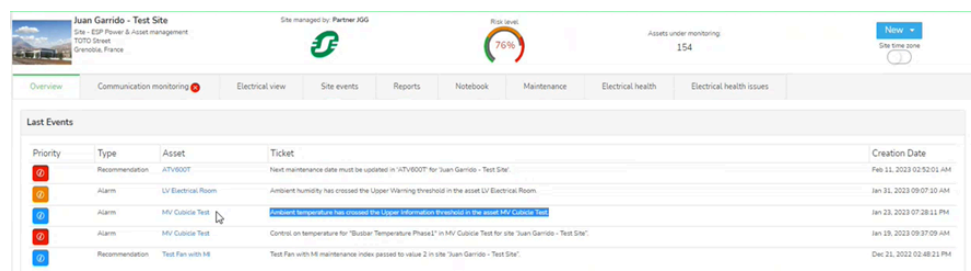
New Variable Speed Drive (VSD) Models

New Variable Speed Drive (VSD) models have been added to platform configuration options, including the drop down list of drive model:

- New values for drive model: ATV650F and ATV950F, and their corresponding drive sizes (1P and 2P)
- Configuration of algorithms has been updated consequently:
 - Field failure rate
 - Standardized thermal state

Site Overview Tab

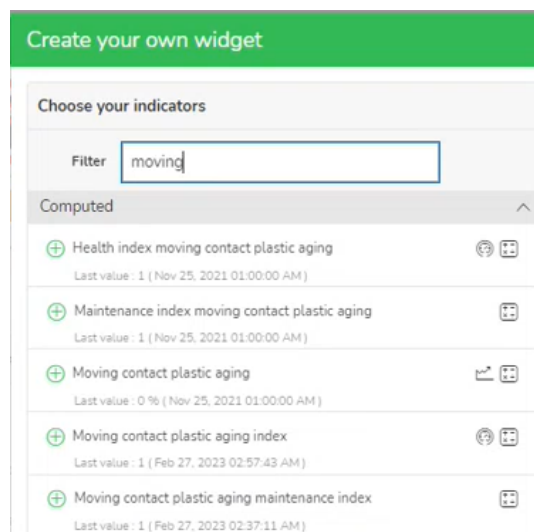
At site level, in the **Overview** tab, in the **Last Events** widget, the ticket title is now displayed.



Priority	Type	Asset	Ticket	Creation Date
Recommendation	ATV650F		Next maintenance date must be updated in 'ATV650F' for 'Juan Garrido - Test Site'.	Feb 11, 2023 02:52:01 AM
Alarm	LV Electrical Room		Ambient humidity has crossed the Upper Warning threshold in the asset LV Electrical Room.	Jan 31, 2023 09:07:10 AM
Alarm	MV Cubicle Test		Ambient temperature has crossed the Upper Warning threshold in the asset MV Cubicle Test.	Jan 23, 2023 07:28:11 PM
Alarm	MV Cubicle Test		Control on temperature for 'Busbar Temperature Phase2' in MV Cubicle Test for site 'Juan Garrido - Test Site'.	Jan 23, 2023 09:37:09 AM
Recommendation	Test Fan with H8		Test Fan with H8 maintenance index passed to value 2 in site 'Juan Garrido - Test Site'.	Dec 21, 2022 02:48:21 PM

LV Circuit Breaker

LV circuit breaker has a list of subassemblies reported in the **Partial health index** and described in the help function. The component **Mobile pole plastic** has been renamed **Moving contact plastic aging index**. This name appears in all the indexes related to this asset, for example in the partial maintenance index.



Create your own widget

Choose your indicators

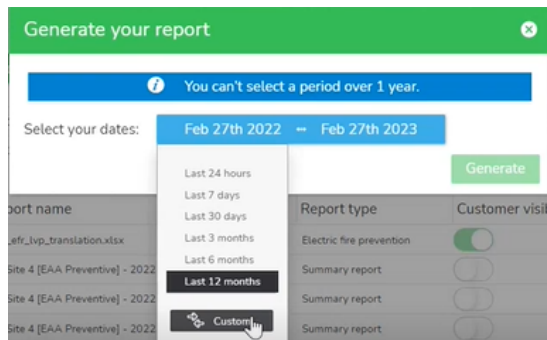
Filter: moving

Computed

- Health index moving contact plastic aging
Last value: 1 (Nov 25, 2021 01:00:00 AM)
- Maintenance index moving contact plastic aging
Last value: 1 (Nov 25, 2021 01:00:00 AM)
- Moving contact plastic aging
Last value: 0 % (Nov 25, 2021 01:00:00 AM)
- Moving contact plastic aging index
Last value: 1 (Feb 27, 2023 02:57:43 AM)
- Moving contact plastic aging maintenance index
Last value: 1 (Feb 27, 2023 02:37:11 AM)

Reporting Time Frame

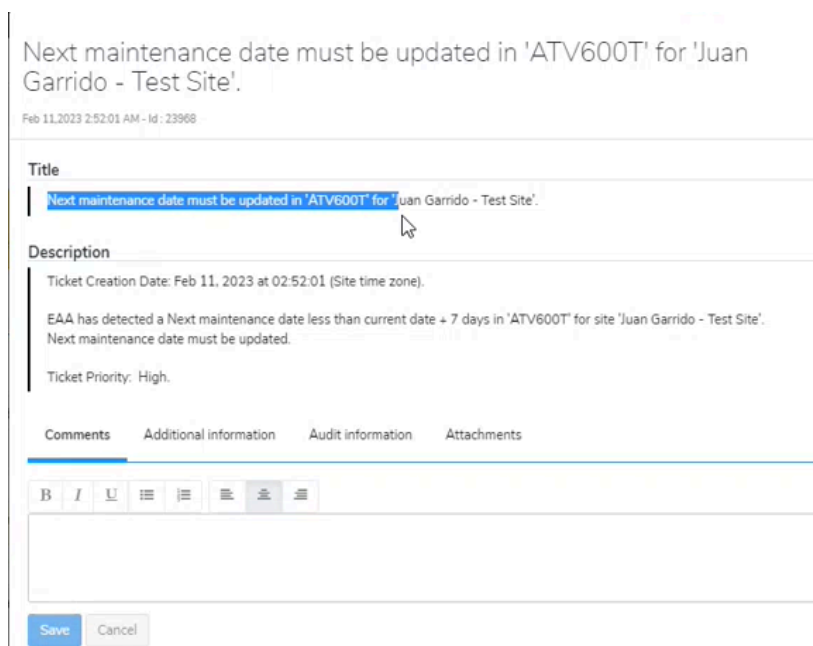
- From the **Reports** tab, when selecting **Report generation settings**, it is not possible to select a period longer than one year.
- If you select a period longer than one year, the **Generate** button is disabled.



Next Maintenance Date

Abnormal maintenance date computation has been updated for new entries:

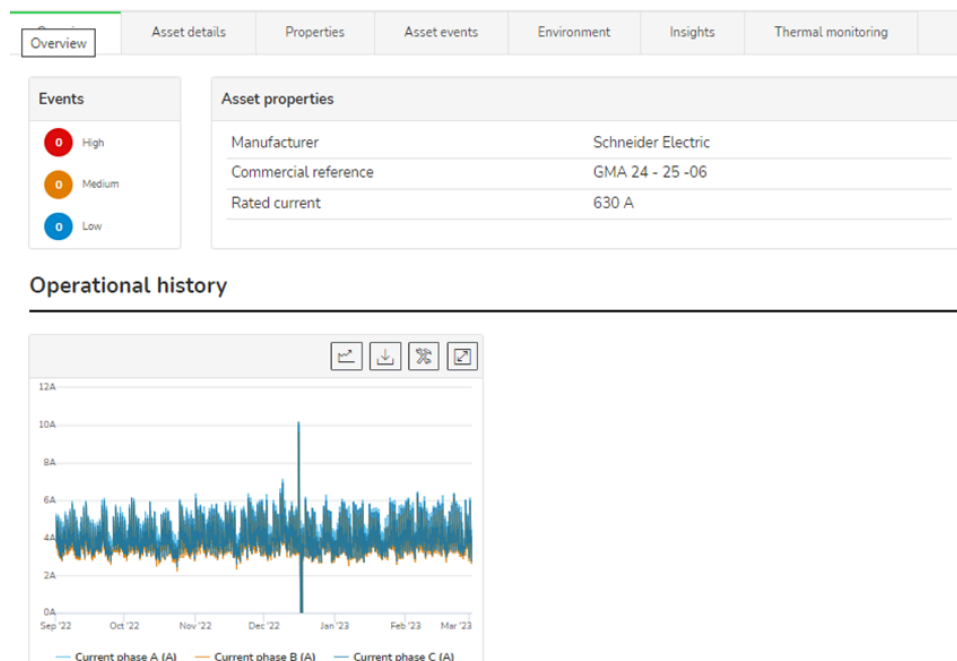
- It is not allowed to set a **Next maintenance date** earlier than the current date.
NOTE: If the previously recorded **Next maintenance date** is set in the past, then user edits are rejected, and a **Next maintenance date** error is displayed.
- If the **Next maintenance date** is before the current date plus seven days, the index is not computed. Instead, a ticket is raised in order to notify that the **Next maintenance date** must be updated in that asset.



Overview Tab for MV Cubicle Asset Type

For the MV cubicle asset type, there is a new tab: **Overview**. By default, this tab displays:

- The **Events** widget.
- The **Asset properties** widget.
- The **Operational history** widget, which displays the three MV cubicle current phases.



Widget for Oil Tank Temperatures

For the **Oil tank temperatures** widget, there was a swap between the name and the indicator for the top, bottom and tank temperature. Now the labels correspond to the right indicators.



Notifications on EAA Mobile Application

No updates on mobile application delivered as v 2.2.9.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.6

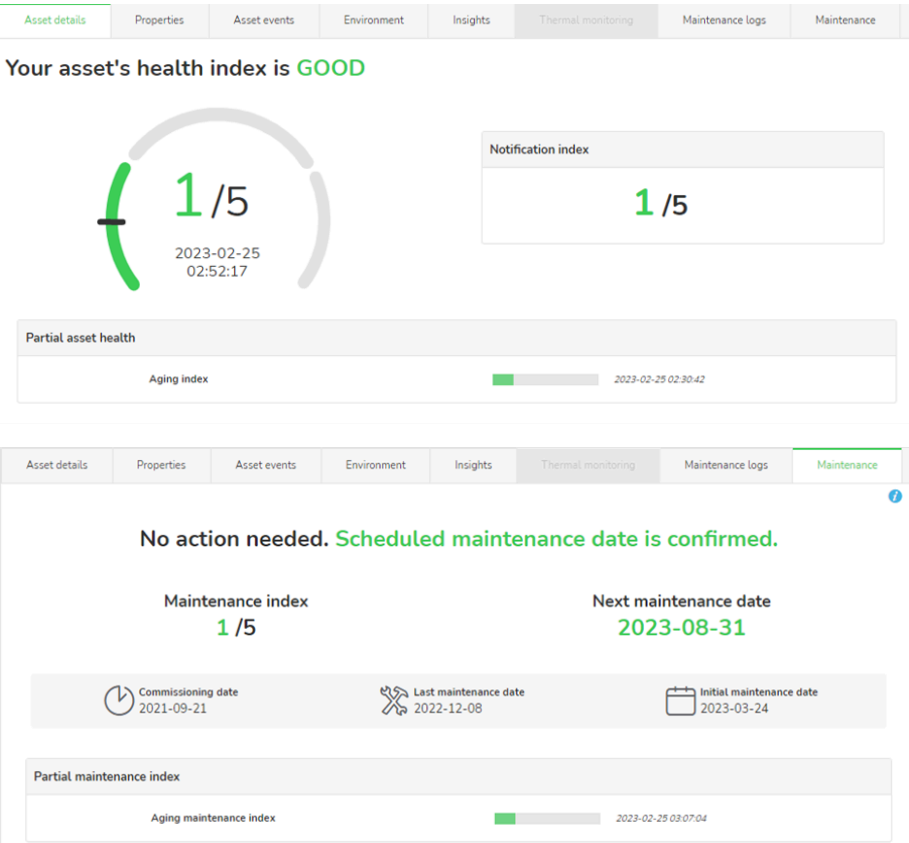
EAA Web Portal New Features

Dynamic CBM for MV Drives

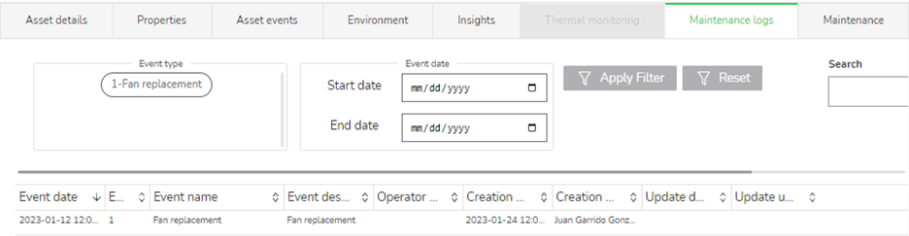
- Similarly to LV drive system, the **Maintenance index** is displayed for MV drive system, based on its fans aging.

A complete set of indicators is displayed, from fan aging to partial health index and **Maintenance index**.

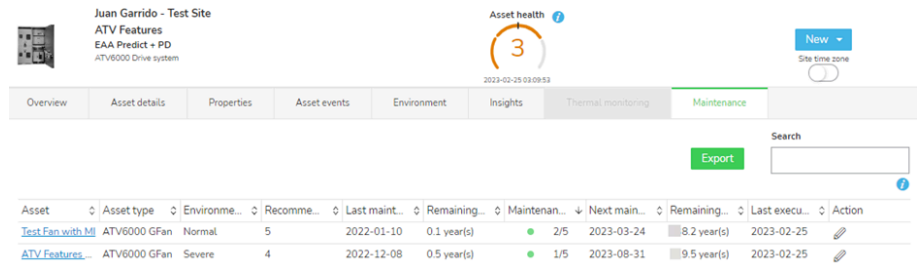
For the moment, this applies to fan components.



- For ESP Prime offer, several aspects of health and maintenance indexes are tracked and logged, including:
 - Last and next maintenance dates.
 - Performed maintenance tasks.



- MV drive system displays a list of all the subcomponents which affect the **Maintenance index**, at system level. The subcomponents are also displayed at site level, together with the rest of the assets within the same site.



- Indicators computed for the inverter (another MV drive system component) have been simplified:
 - The over voltage probability indicator has been removed.
 - Some indicators used as inputs have been impacted:
 - Drive inverter failure probability
 - Corresponding health index
- In turn, drive system indexes have been impacted.

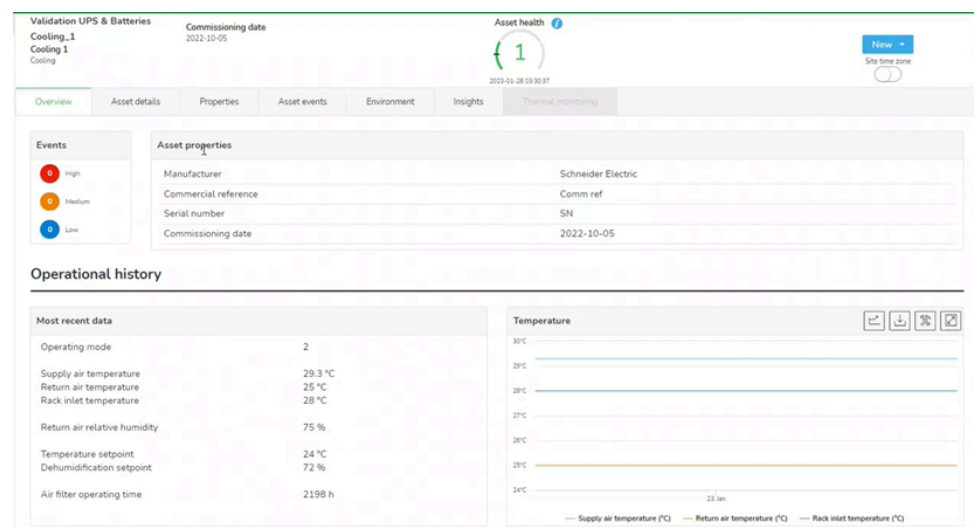
Cooling Unit Asset Type

A new asset type, the cooling unit, has been added to the platform.

Several screens have been added.

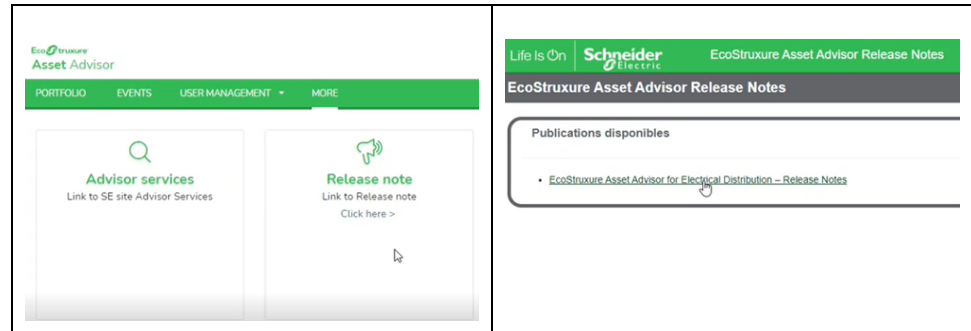
The **Overview** tab (the landing page when the user clicks the asset) contains:

- Summary of **Events**
- Main **Asset properties**
- Operational history**, which displays the most recent data for main indicators of the cooling unit asset. The main indicators include temperatures, system humidity and air filter operating time. The time stamp is displayed when you move the mouse over the values.
- An air temperature chart which displays the **Supply air temperature**, **Return air temperature** and **Rack inlet temperature**. A tooltip provides the details.

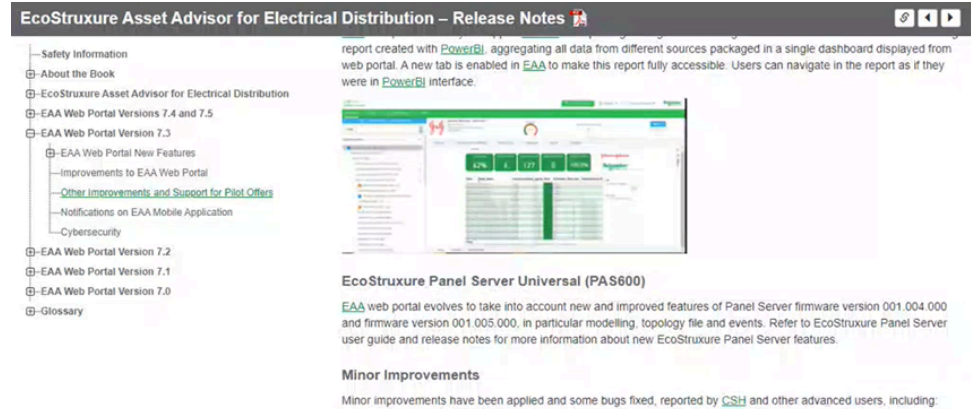


Release Note

A new section is available on the **MORE** page in the top menu: **Release note**. It gives access to release notes for end users.



By clicking on the link, an HTML file opens in a new browser page, with a tree view structure of chapters for each version.

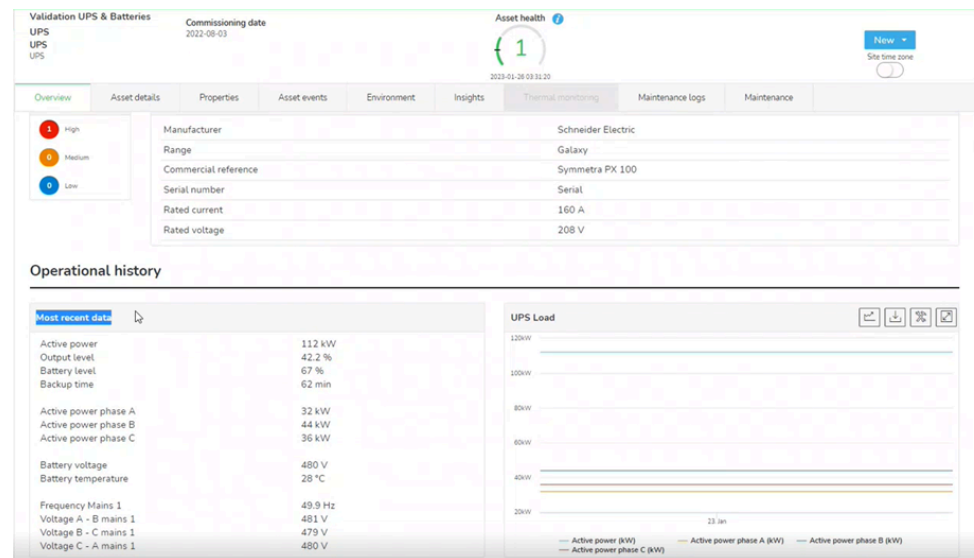


Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

UPS Asset Type

The **Overview** tab for UPS asset type has been updated with a layout similar to the new cooling unit asset type. The labelling and the tooltip functionality of detailed values and timestamps has been updated.

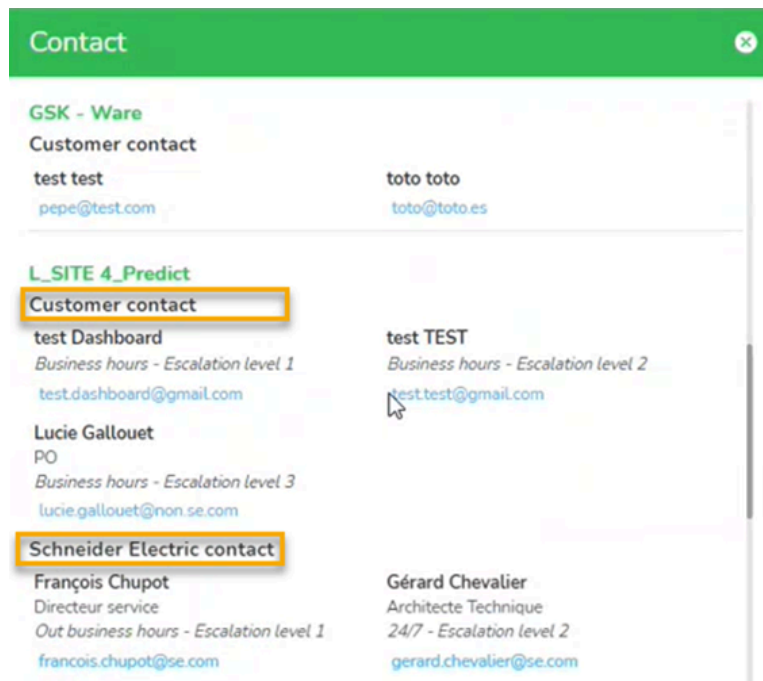


Support Contact Information

The **Contact** popup has been updated to display two groups:

- **Customer contact**
- **Schneider Electric contact**

Contacts are sorted by escalation level, or by alphabetical order if they are at the same level.

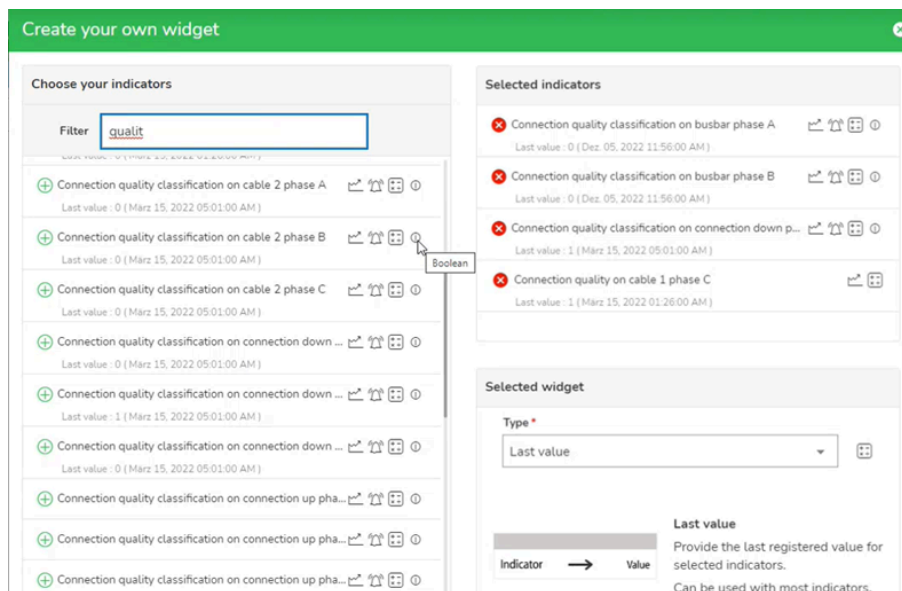


Last Value Widget and Alarm Widget

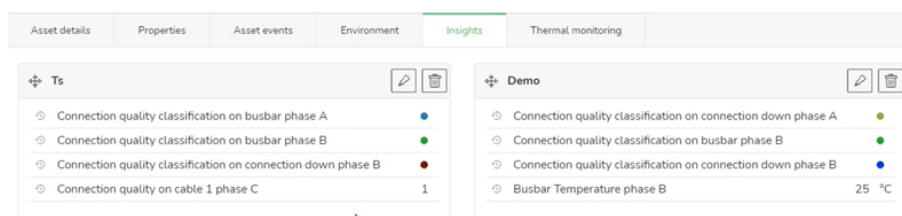
Last value widget is now displayed as a proper colored bubble, intended for boolean indicators.

To create a **Last value** widget:

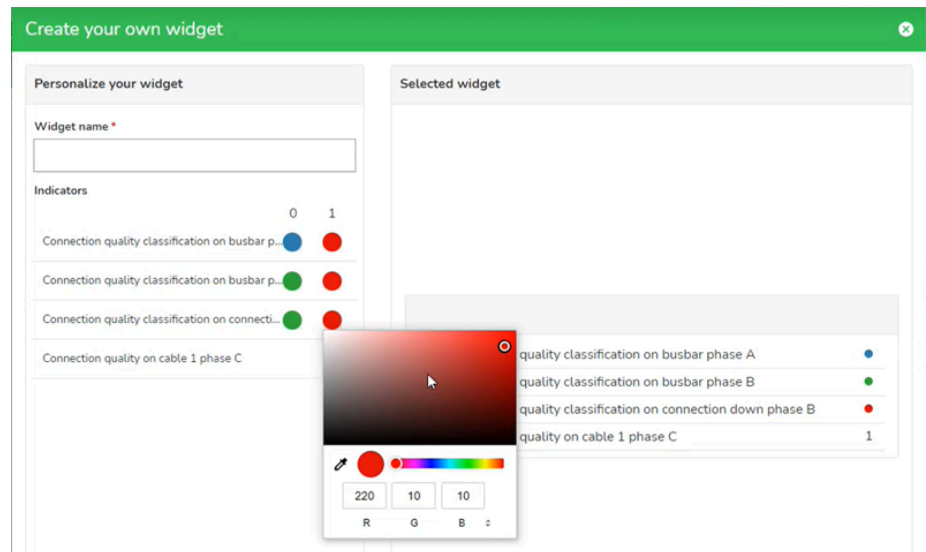
- On the window **Create your own widget**, indicators with boolean type are identified by the **Boolean** tooltip message on the icon. Click the **+** symbol to select an indicator.



- In the next window, select the colors for the bubble displayed on the widget. Colors must be different for values **0** and **1**. By default, green applies to **0** and red applies to **1**.

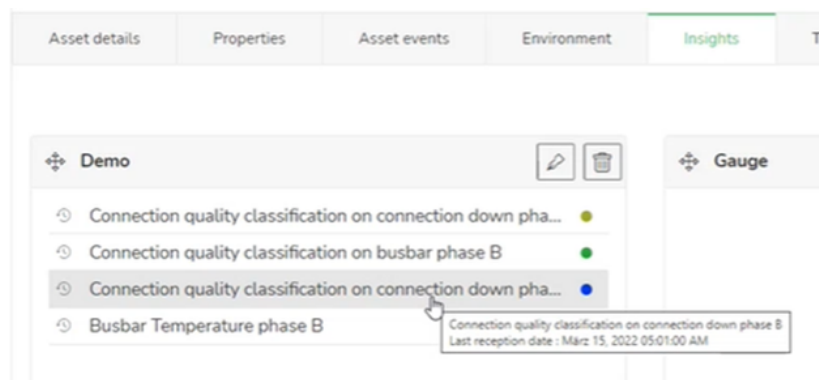


NOTE: If a variable is not of Boolean type, it can be added to **Last value** widget, with no bubble display.



The **Insights** tab displays the new **Last value** widget with a colored bubble selected for each indicator value.

- The space allowed for the indicator name is longer. If the space is not long enough, a tooltip allows you to display the full name when passing the mouse on the name.
- The same improvement applies to the widget displaying alarms, adding the latest reception date.



Reports

A new report type has been added to the **New report** page. On the **USER MANAGEMENT** page:

- Click **New** at the top left of the page. Select **Upload Report**. On the **New report** page popup, **Electric fire prevention** is available in the **Report type** menu.
- On the **Reports** tab, **Electric fire prevention** as a filter of report types.

The **New report** popup displays new report frequencies:

- **Quarterly**
- **Semesterly**

This information is displayed on **Reports** widgets or the **Reports** tab.

New report

The file size must not exceed 15MB *

Attach A File *

Start date *

End date *

Report type *

Do you want to update the next report information? ☒

Next summary report date *

Summary report frequency *

Next quarterly communication date *

Save

Threshold Window and Widgets

The threshold settings window has been simplified by toggle buttons for upper and lower thresholds activation. In case of errors, the errors are displayed in the language of the web portal.

Schwellwerte

Indikatoren Historisch

Untere Alarmschwelle muss niedriger sein als die anderen
 Untere Warnschwelle muss zwischen Warnung und Info liegen
 Untere Infoschwelle muss zwischen unterer Warnung und oberer Info liegen
 Obere Informationsschwelle muss zwischen unterem Alarm und oberer Warnung liegen

Umgebungstemperatur Luftfeuchtigkeit

Aktiver oberer/unterer Schwellenwert ☒ ☒

Oberer Schwellwert

	Alarm	Warnung	Info
Umgebungstemperatur	85	65	50
Luftfeuchtigkeit	85	55	50

Unterer Schwellwert

	Alarm	Warnung	Info
Umgebungstemperatur	15	20	25
Luftfeuchtigkeit	15	20	25

Trendschwellwerte

Speichern Zurücksetzen

The bug with the **Connection thermal indicator** on the **Insights** tab has been fixed. Previously, a scale alignment issue occurred when changing the Y axis from the primary (left) side of the chart to the secondary (right) side of the chart. Thresholds are displayed properly now, whatever the Y-axis used.

Other Improvements and Support for Pilot Offers

EcoStruxure Panel Server Universal (PAS600) and Other Gateways

Panel Server firmware version 001.005.001 was released in February 2023. For more information about new EcoStruxure Panel Server features, refer to EcoStruxure Panel Server user guide and release notes, page 11.

Minor Improvements

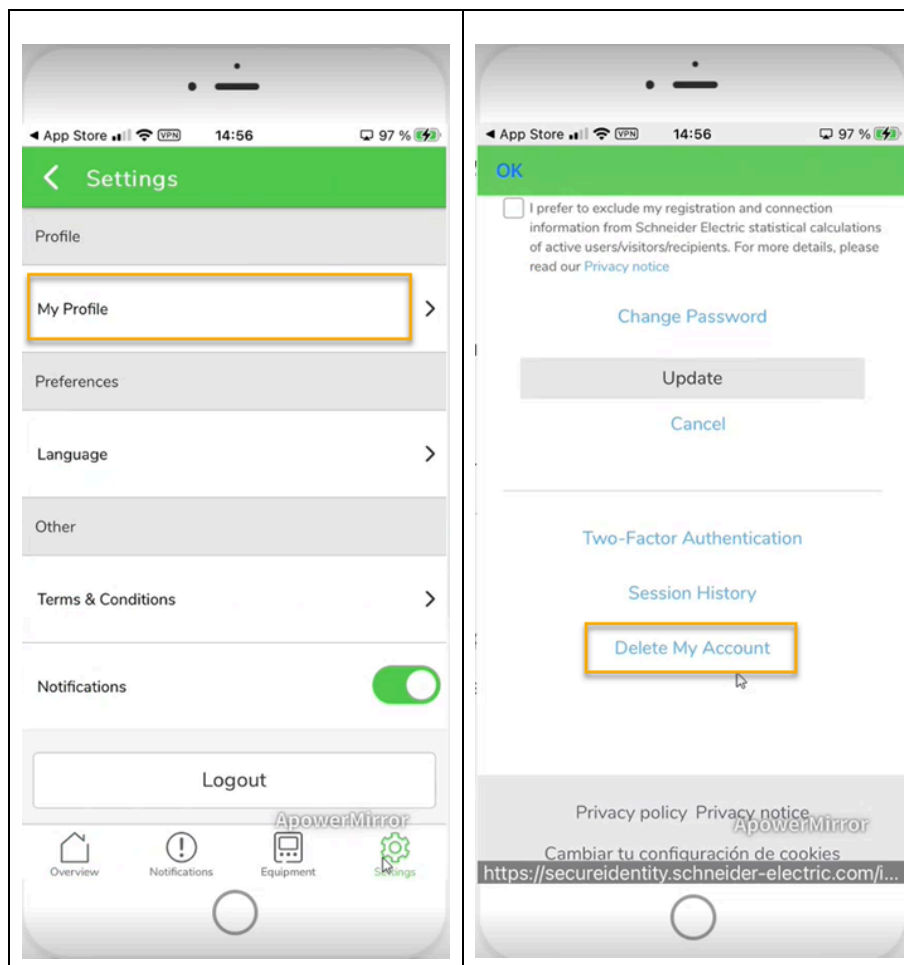
Minor improvements have been applied and some bugs, reported by CSH and other advanced users, have been fixed. These include:

- Electrical Fire Risk Prevention (EFRP) index for MV Panel upgrade internal calculation, with ECTM faults detected by ETCM advanced analytics (using machine learning) for any of MV panel connections.
- The labeling of the **Fire Index Matrix** is translated into the web portal language.
- When the system creates a ticket related to an indicator from a technical device, the name of the technical device is displayed.
- On the Spanish version, in the **Overview** tab of a site, in the **Health Matrix** widget, axis for health has been corrected from **Equivocado** to **Pobre**.
- For oil transformer, French translation has been corrected, so that it is the same translation in **View** mode and **Edit** mode.
- After using dates picker for time frame selection, clicking on another dashboard area results in automatic closure of the calendar. Previously, the calendar remained open until it was clicked for closure.
- The **Thermal monitoring** tab is now displaying measurement with value **0**.
- The **Historical** tab has been temporarily disabled from the **Events detail** window.
- Disabling algorithm at asset level was not working properly. This bug has been fixed.

Notifications on EAA Mobile Application

Updates on EAA mobile application delivered as v 2.2.7 include:

- On **My Profile** screen, the user can now delete the user account.



- Notifications in Android are refactored due to Google requirement for Android level 31.
- In **USER MANAGEMENT**, in **Notification** section, **Push notification** toggle has been renamed to **Push notification Mobile App**.

Cybersecurity

No specific development in this release.

EAA Web Portal Versions 7.4 and 7.5

EAA Web Portal New Features

ESP for Power and Asset Management

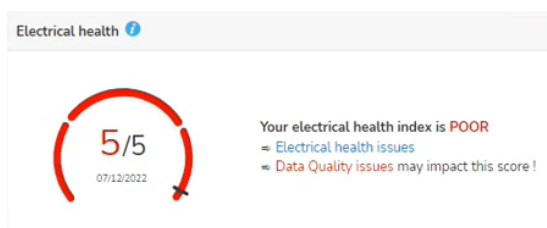
EAA web portal hosts a new offer, bundling EcoStruxure Service Plan Prime with PA outcomes. Main features delivered are the following:

- New entry on the Offers table, that can be configured and displayed accordingly.
- New asset type: Power Monitoring System (PMS) added to gather information from PA.

New Indicators

New indicators and algorithms for that asset type are stored in the EAA web portal, to be updated with PA report every six months:

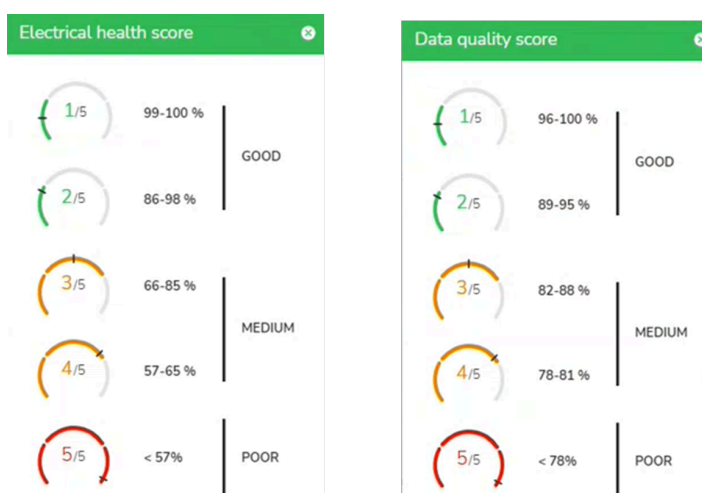
- **Electrical health index** at site level, considering electrical health issues, with links to the electrical issues list. In case of a poor health index, a link to **Data Quality** overview is displayed. Electrical health index works as asset health index. It is used to feed **Health Matrix** on site view.



- **Data quality score**, considering all data quality issues.

If **Data quality score** is low, **Electrical health score** may be impacted by the poor quality of existing data.

Computation for **Data quality score** and **Electrical health score** is available in the help icon. They use different ranges.

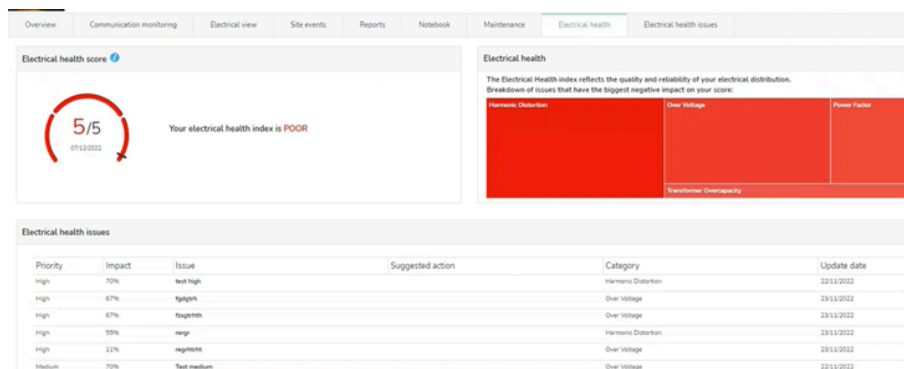


- **Site Risk level** is not impacted by the new indicators.
- **Health Matrix** displays a new asset type: PMS system.

New Tabs and Widgets

- Site level tab: new **Electrical health score** and top 10 issues with negative impact on that score are displayed together, with new tiles chart.

If **Electrical health score** is poor or medium, a small icon is displayed in the tree view, close to PMS system asset type.



- Asset level tabs:
 - PMS system detail tab: same layout as **Electrical health** tab, accessible from PMS system asset perspective, including:
 - Data quality score
 - Data quality tiles
 - Data quality top 10 issues
 - Properties**: for PMS system description and reference data
 - System Events**: to report the normal tickets out of EAA web portal. For example, for thresholds setting, manually created tickets.
 - Insights**: to display widgets (customizable), for instance **Data quality score** time series
- For **Electrical health** (site level) and PMS system detail (asset level) tabs, there are two new types of widgets:
 - Tiles chart: provides a quick view on issues, grouped under categories (six for **Electrical health issues** and 24 for **Data quality issues**). Moving the mouse over the chart displays the number of issues under the selected category.
 - List of top 10 issues: ranked by priority, impact (decreasing %) and creation date (older on top). Updates are made by CSH only.

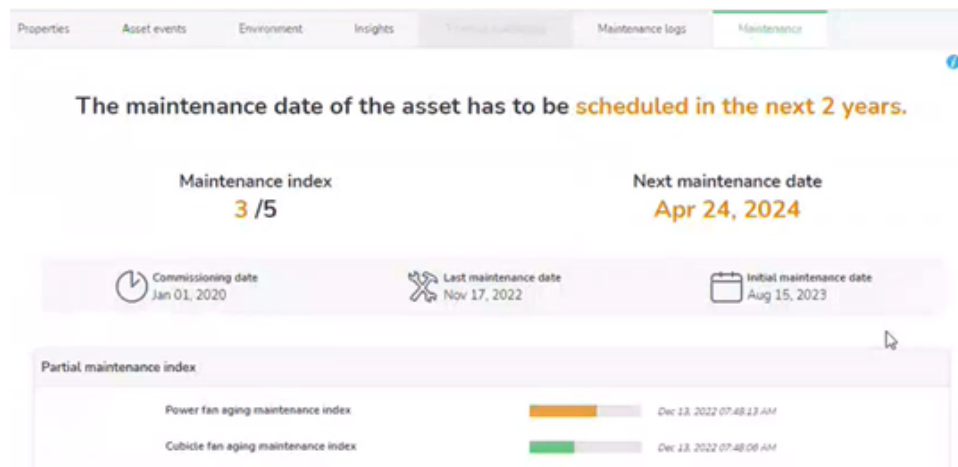
Data quality issues

Priority	Impact	Issue	Suggested action	Category	Update date
High	90%	FGN9	de nouvelles US pour plus tard, genre en attente, je crée : 1 sept 2014 à 10h00	Configuring Cam Settings	12/12/2022
High	50%	555	de nouvelles US pour plus tard, genre en attente, je crée : 1 sept 2014 à 10h00	All Zero Values	12/12/2022
High	43%	de nouvelles US pour plus tard, genre en attente, je crée : 1 sept 2014 à 10h00	de nouvelles US pour plus tard, genre en attente, je crée : 1 sept 2014 à 10h00	All Zero Values	12/12/2022
Medium	2222%	OSRPREZ	de nouvelles US pour plus tard, genre en attente, je crée : 1 sept 2014 à 10h00	No Power/Energy Logged in Period	07/12/2022
Medium	33%	SRPDP	de nouvelles US pour plus tard, genre en attente, je crée : 1 sept 2014 à 10h00	Date Gaps	12/12/2022
Medium	11%	SRPFG	de nouvelles US pour plus tard, genre en attente, je crée : 1 sept 2014 à 10h00	Date Gaps	12/12/2022
Low	33%	de nouvelles US pour plus tard, genre en attente, je crée : 1 sept 2014 à 10h00	de nouvelles US pour plus tard, genre en attente, je crée : 1 sept 2014 à 10h00	Mismatched logging intervals	12/12/2022

Dynamic CBM for LV Drives

Dynamic Condition Based Maintenance for LV drives is ready to support ESP for drives:

- New aging indicators (based on the power fan and cubicle fan) and settings (last and next maintenance dates, usage and environmental level)
- New algorithms to compute partial maintenance index for fans, and drive **Maintenance index**
- New **Maintenance** dashboard for LV Drive
- Updates for site **Maintenance** tab, including the new asset type with that option enabled. It applies to offer level ESP Prime.



Dynamic CBM for UPS

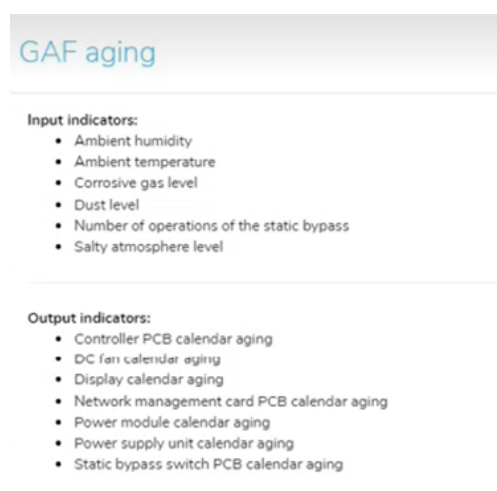
New Components

The following components or subassemblies are added to allow more in-depth analysis of UPS devices:

- Controller PCB
- DC fan
- Display
- Network management card PCB
- Power module
- Power supply unit
- Static bypass switch PCB

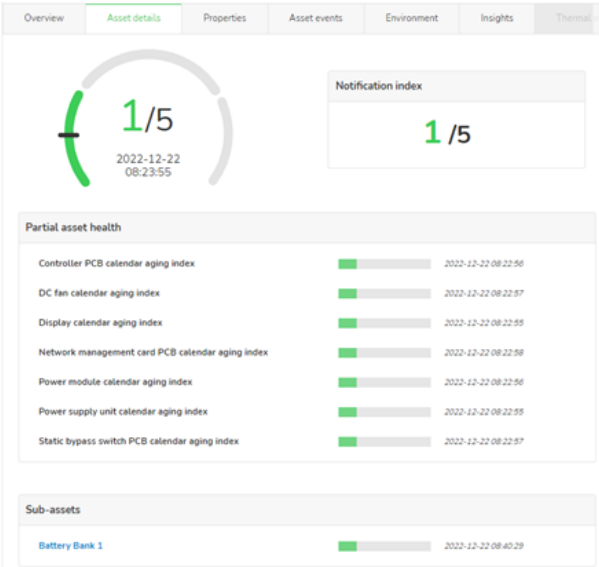
For some product ranges, not all components would apply.

- Battery banks are considered as a child asset.

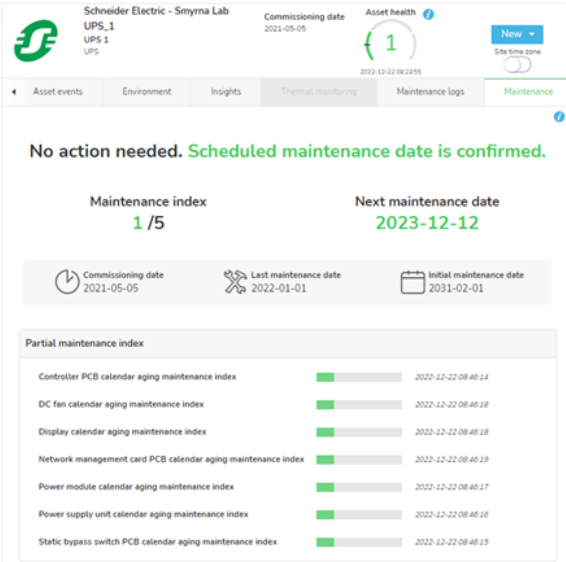


UPS Analytics

Aging indicators provided by GAF are converted into **Partial asset health** indexes.



Partial asset health indexes are used to compute partial maintenance indexes, together with maintenance dates and maintenance logs.



Maintenance log is a list of predefined events, focused on:

- any subassembly replacement
- restart after shutdown
- full product replacement

These indicators are aggregated upstream in assets located above in the tree hierarchy, particularly container asset type. At site level, **Maintenance** tab displays UPS with **Maintenance index** value, in grid.

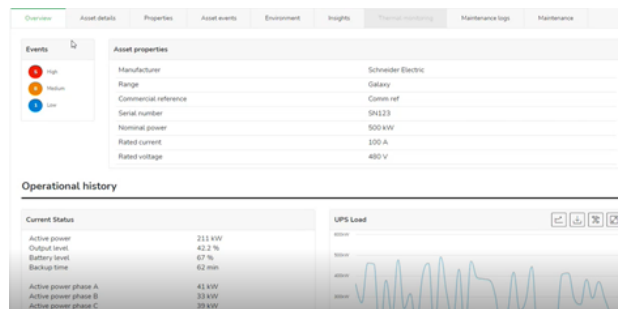
In case of battery banks already installed in Galaxy or Symetra ranges, EAA web portal facilitates reading parameters required by GAF, avoiding full battery bank configuration as brand new (child) asset.

UPS Overview

Primary dashboard to display UPS is an **Overview** tab, containing:

- Summary of **Events**
- Key manufacturing properties

- **Operational history:**
 - Status (value of UPS parameters)
 - **UPS Load** along time (active power)



ECTM for Transformer Thermal Points

New analytics based on machine learning for connected oil and dry transformers, when having thermal sensors fitted. EAA web portal provides indicators for predicted temperatures on following locations:

- Dry transformer: LV connection, MV upper connection
- Oil transformer: LV connection, MV connection

Measurement for thermal monitoring LV-Neutral was added in oil transformer asset type.

Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

Maintenance Log Fed from Onsite Report

Maintenance logs recording the maintenance history are automatically generated in the field.

Information from the OnSite system report (used by Schneider Electric Field Service Representatives after their field intervention) is imported into maintenance logs to incorporate key activities, without any manual intervention.

It applies to LV and MV circuit breakers.

Maintenance log for: LG demo onsite

Created by: Administrator Administrator Aug 19, 2022 03:00 AM, Updated by: Lucie Gallouet Dec 12, 2022 05:00 PM

Event date *
19/08/2022 03:00

Event name *
Activity preventive maintenance

Event code
19-Grease Rails

Event description
Grease Rails

Manual comment

WO number
789955

Operator name

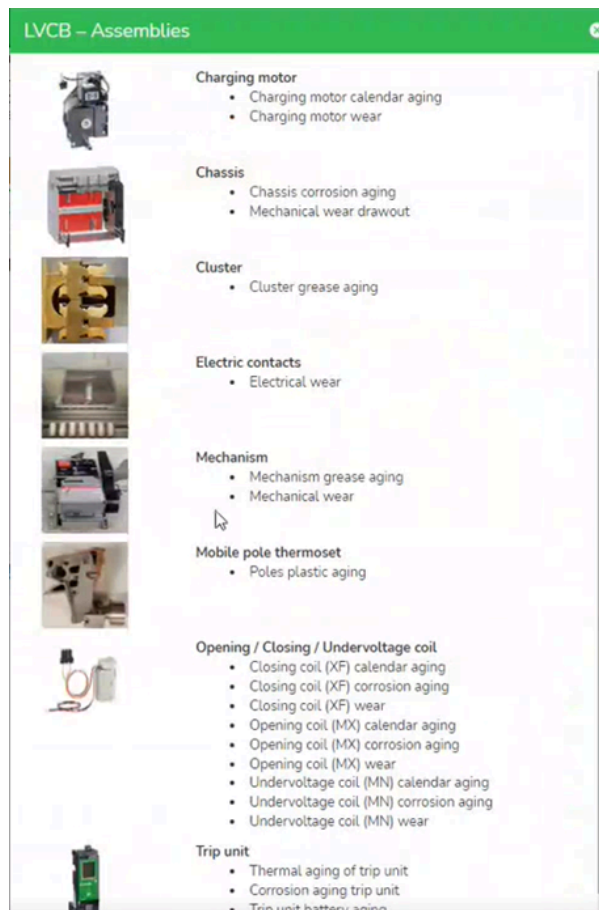
Save **Cancel**

Connection to OnSite (via bFS) provides valuable records already stored to compute next maintenance needs. It is a significant gain for dynamic Condition Based Maintenance.

Improvements on LV Circuit Breaker

New component or assembly added: trip unit battery. It needs to be activated during provisioning to enable corresponding partial health and maintenance index computation.

New information under help button displays picture for main subassemblies on LV and web portal indicators related. Help available from **Asset details** or **Asset maintenance** tabs.



Improvements on Thermal Monitoring

- New label on the screen to indicate the location of the thermal point. The label includes the site name and the asset name.
- Thermal monitoring accordion menu displaying functional name of related asset, as per tree view hierarchy name.
- Winding temperatures (Dry transformer) added to accordion menu, with widgets displaying:
 - three phases temperature
 - three phases current

Improvements on Rotating Equipment

- New indicators for rotating equipment, with a revisited process to feed indicators after incident reception from Samotics interface.
- Load health indicator added.

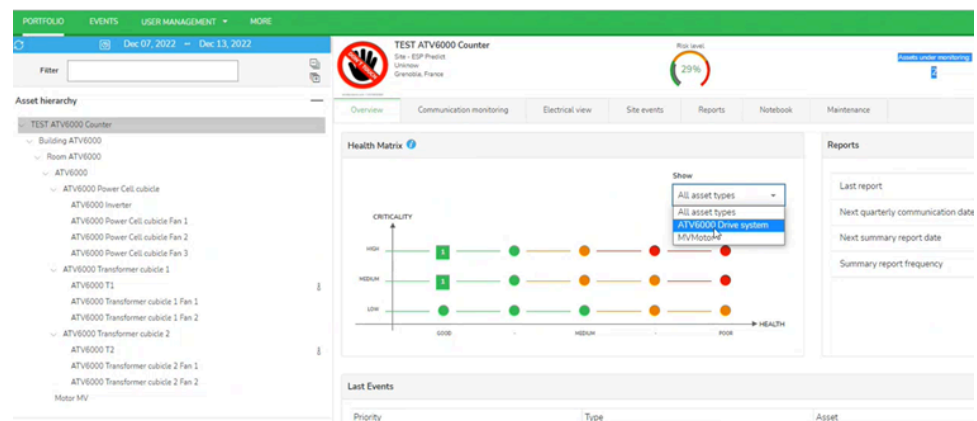
Health	
Electrical health	●
Motor mechanical health	●
Shaft train health	●
Transmission health	●
Process health	●
Motor control health	●
Load health	●

- For MV motor dashboards:
 - **Overview** tab: **Current** replaced by **Current Standard**
 - **Insight** tab: **Induction motor** replaced by **Motor**

ATV 6000

Creation of ATV6000 with one fan per cubicle is allowed. Previously, the minimum number of fans required was two.

ATV6000 tree view kept with subcomponents. ATV6000 is counted as one single asset for **Health Matrix**, and for data extractions.



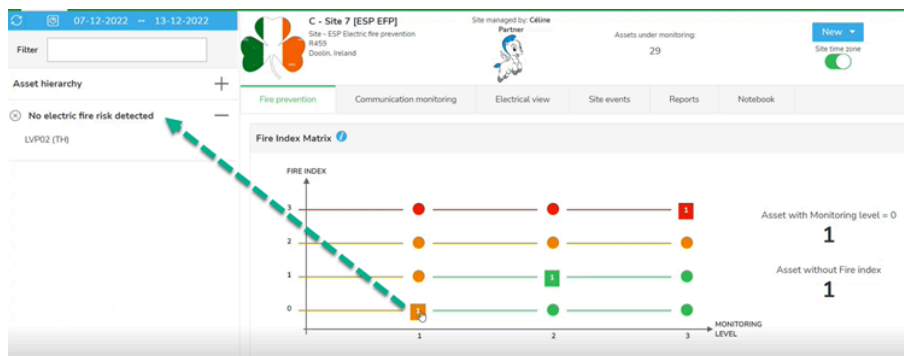
ESP for Electric Fire Prevention

MV panels compute EFRP score considering Electrical Connection Thermal Monitoring (ECTM) for thermal points.

Fire Index Matrix modifications:

- When selecting an asset into matrix, message on tree view corresponds to condition assessment provided in the **Fire prevention** tab.
- If **MONITORING LEVEL** is null, then EFRP index is null.

- Close to matrix, there is counter for assets with EFRP null and a new one for assets with Monitoring level =0. In turn, previous matrix column for monitoring level =0 has been removed, and their EFRP is not displayed.



- Two key indicators have been added into AMS tickets, except if **MONITORING LEVEL** is very low (= 0).

"High" Electrical Fire Risk on mv_panel3_3 in site "C - Site 4 [EAA Preventive]"

29-11-2022 21:56 - Id: 19117 / C - Site 4 [EAA Preventive] / Building 2 - EFR / Local 2 (H/V - EFRP) / mv_panel3_3

Reminder: In this type of offer, customer is just able to see the manual recommendations and alarms.

Description
Ticket Creation Date: Nov 30, 2022 at 10:56:05 (Site time zone).

Electrical fire risk detected is high, immediate action is required
Recommendation: Use the column diagnoses to guide the maintenance related to cables and/or connections.

Indicator date: Nov 30, 2022 at 10:56:00 (Site time zone).
EFR Index: 3
EFR **Monitoring level: 99%**

Ticket Priority: High

Widget Functionalities

- Within the setup window, there is a new option or tab to track history of:
 - Updated values: when, who and value updated; for upper and lower thresholds, and trends if any.
 - Drop-down list to select any indicator available in widget.

Thresholds

Indicators

History

Customized threshold historic of changes

Voltage A - B

		Thresholds		Lower Thresholds			Upper Thresholds		
Date	User	Active	Alarm	Warning	Info	Info	Warning	Alarm	
07-12-2...	Céline A...	True	50			350	450	500	
23-02-2...	Céline A...	True	50			350	450	500	
23-02-2...	Céline A...	True	50			350	450	500	
26-01-2...	Céline A...	True	50			350	450	500	
26-01-2...	Céline A...	True				350	450	500	
26-01-2...	Céline A...	True				349	450	500	
26-01-2...	Céline A...	True				450	490	500	
26-01-2...	Céline A...	True				450		500	
26-01-2...	Céline A...	True	190			450		500	
09-11-2...	Céline A...	True				450		500	

- When adding new widget, usability is improved by:
 - top filter able to find by indicator name, internal (meaning) name or technical device name. Results are ordered by indicator name.
 - displaying help for chart selection.

Maintenance Tab at Site Level

- Includes Container **Asset type** on the grid.
- Displays an icon when **Last maintenance date** is updated, to advise that **Maintenance index** will be computed later (daily cadence). Then, it is possible to update **Next maintenance date**.
- The recommended maintenance schedule takes into account the offer level: 4 years for ESP Plus and 5 years for ESP Prime.
- Export function is sensitive to **Site time zone** toggle button.

Specific Roles

- For Partner users:
 - Information in the Site banner on top of screens: partner name in bold and accessible to end user, and partner picture size reduced.
 - **Properties** tab: **Commissioning date (Control unit)** ruled by time zone toggle button.
 - Same icon for the **Attach A File** button for all alternatives to go into ticket details.
- For End users: **USER MANAGEMENT** menu has been disabled. The user should request updates to CSH contact.

Other Improvements and Support for Pilot Offers

EcoStruxure Panel Server Universal (PAS600) and Other Gateways

- Content of file received from gateway follows the following convention: EAA web portal is able to convert devices, time series, and/or events (so far, predefined events) into structured data.
- The processing of predefined events received from gateway by ticket templates is similar to the processing of Com'X custom events.
- Remote access commands to enable/disable remote access.
- Indication of frequencies for sampling and publication, set by CSH, for gateway update from web portal.
- During gateway configuration, new optional field: **Connection type** (4G, Ethernet). In case of mobile data line, it is possible to store IMEI for SIM card.

Gateway details

General

Name: B-PaS test Commissioning date: 25/02/2021

Type: PaS Connection type (optional): 3G/4G/5G router (on ETH)

SIM card IMEI (optional): SIM card IMEI

Product:

Connection type (optional) dropdown options:

- 3G/4G/5G (on Ethernet)
- Customer ETH network
- Customer Wi-Fi network
- Modem ETH
- Modem Wi-Fi
- Other

- Panel Server firmware version 001.005.000 released in November 2022. Several bugs fixed related to new PAS gateway testing and the auto-provisioning functionality.
- A few issues fixed with Site Server gateway.

Factory Provisioning

UPS evolution requires updates on Factory functionality to add them into Prefabricated Modular Data Centers:

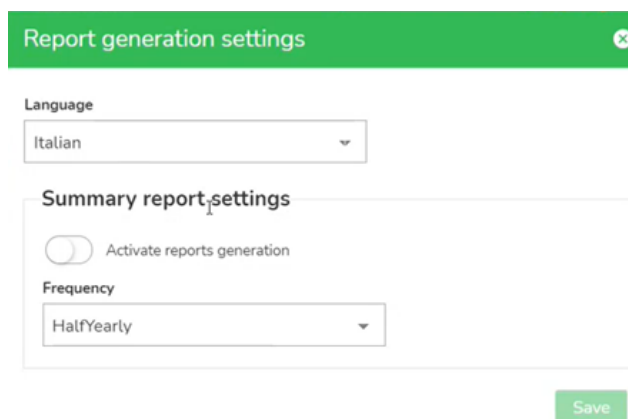
- Number of UPS. Are they connected in parallel?
- Range name, from limited options list: Symetra, Galaxy Smart-UPS
- Rated current and voltage
- Commercial reference

For same factory users, thermal monitoring for LV panels and circuit breakers can be disabled.

Minor Improvements

Minor improvements have been applied and some bugs fixed, reported by CSH and other advanced users, including:

- New segment names added to Segment list: Retail Chain and Engineering services.
- Evolution of battery block charge level algorithm, without impact on users.
- During Ticket/Event edition,
 - While adding a Comment, Formatting (alignment, enum) is now kept after saving.
 - If mandatory fields are empty, **Save** button disabled.
- **Asset health** widget is always visible, whatever the screen size.
- **Report generation settings** reorganized with new layout to simplify actions available.



Notifications on EAA Mobile Application

Updates on EAA mobile application delivered as v 2.2.7 include an update at Android level to allow publication in Play Store.

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.3

EAA Web Portal New Features

Electrical Connection Thermal Monitoring (ECTM)

ECTM provides temperature estimations based on data-driven models. New indicators are added for predicted temperatures per phase in MV cubicles. The EAA web portal runs a machine learning modelling behind ECTM Electrical Connection Thermal Monitoring.

New algorithms are run for MV cubicles, one per connection (three phases) at several predefined positions inside the cubicle:

- Busbar
- Cable 1
- Cable 2
- Circuit breaker arms connection, upstream and downstream

Drives Dashboards

Overview for MV drives, LV drives, and induction motors has been redesigned to increase value to users. Relevant metrics are displayed more clearly, so users can easily analyze the performance of these assets.

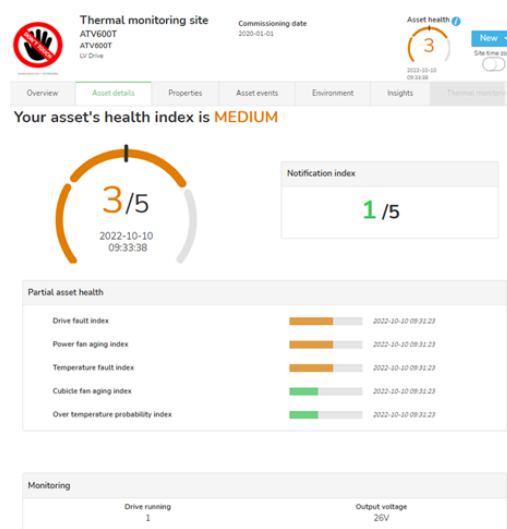
LV Drives

Asset type renamed to LV Drive.

New properties: Rated power (kW and HP).

New indicators:

- Fan aging (new algorithm)
- Output power (new algorithm)
- Output frequency (new algorithm)
- Motor torque in Drive mode
- Operating state
- Cubicle fan aging
- Power fan aging

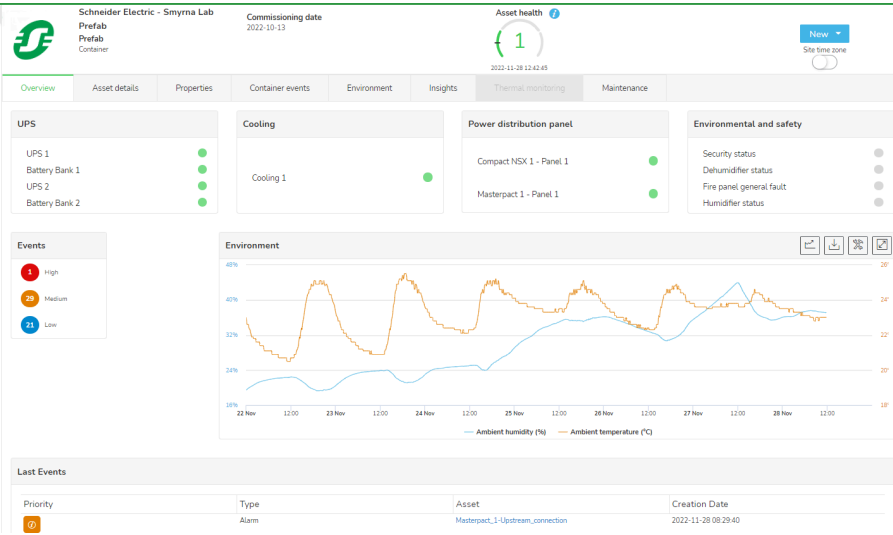


These indicators are used to calculate a partial health index for fan, and to improve existing ones. All indicators are used to calculate the new health index.

Fault detection and over temperature probability depend on the thermal state indicator. Some indicators related to overvoltage probability have been removed.

Maintenance logs are available, with a limited number of options.

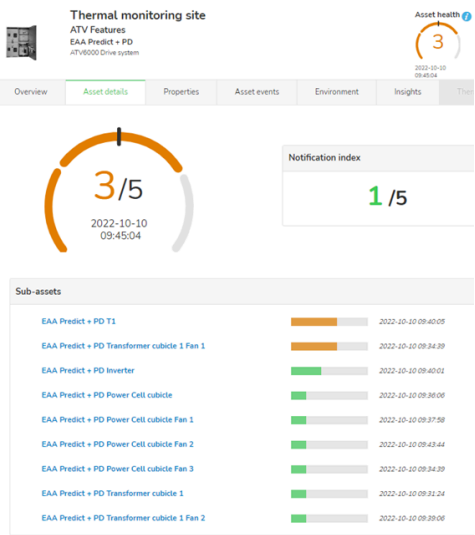
Layout changes of **Overview** tab are similar to the changes for asset types **MV drives** and **motors**.



MV Drives

In the case of the ATV6000 variable speed drive, tree information has been reorganized to have drive system at the top of the tree view, with sub-assets such as inverter, transformers, and fan cubicles.

Sub-assets display their own partial health index, in **Asset details** tab for drive system asset, and individually at sub-asset level. Overall health index is also computed for drive system.

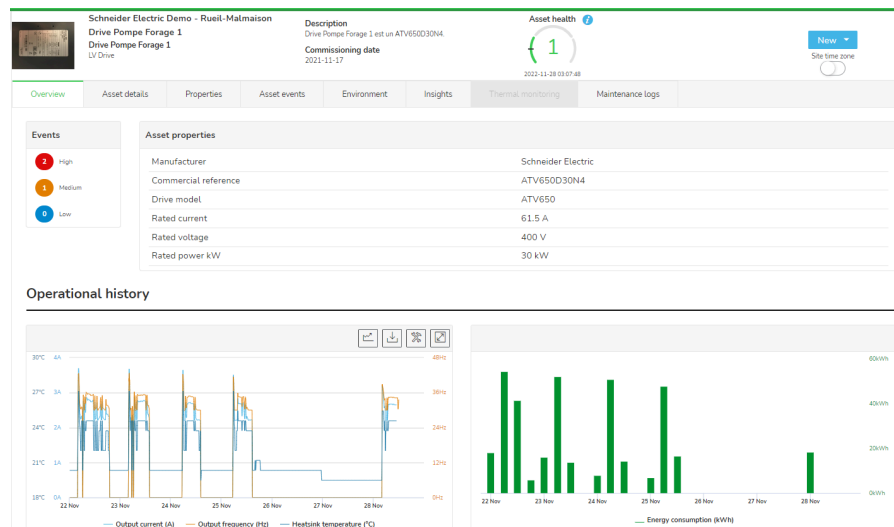


Additional indicators are linked to the drive system and are used to display information in the new **Overview** tab. The **Overview** tab displays events summary and properties related to different sub-assets (for example, **Rated power** is from rated power of transformer).

Widgets displaying operational information complement the **Overview** tab layout:

- Output information to motor (torque, frequency, voltage, current)
- Energy, and operating hours

- Air inlet temperature (for fans)
- Winding temperature (for transformers)



Motor Dashboards

The asset type **Motor** is renamed **Induction motor**.

Motor properties names are reworked.

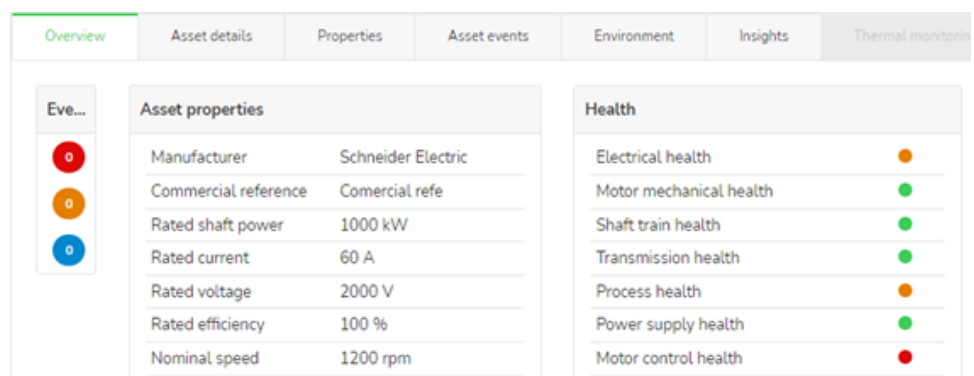
NOTE: The monitored and displayed data can come from VSD or SAM4 solution.

New partial health indexes are added to motor data model thanks to SAM4 API extension, treating new data as technical device in addition to the motor indicators:

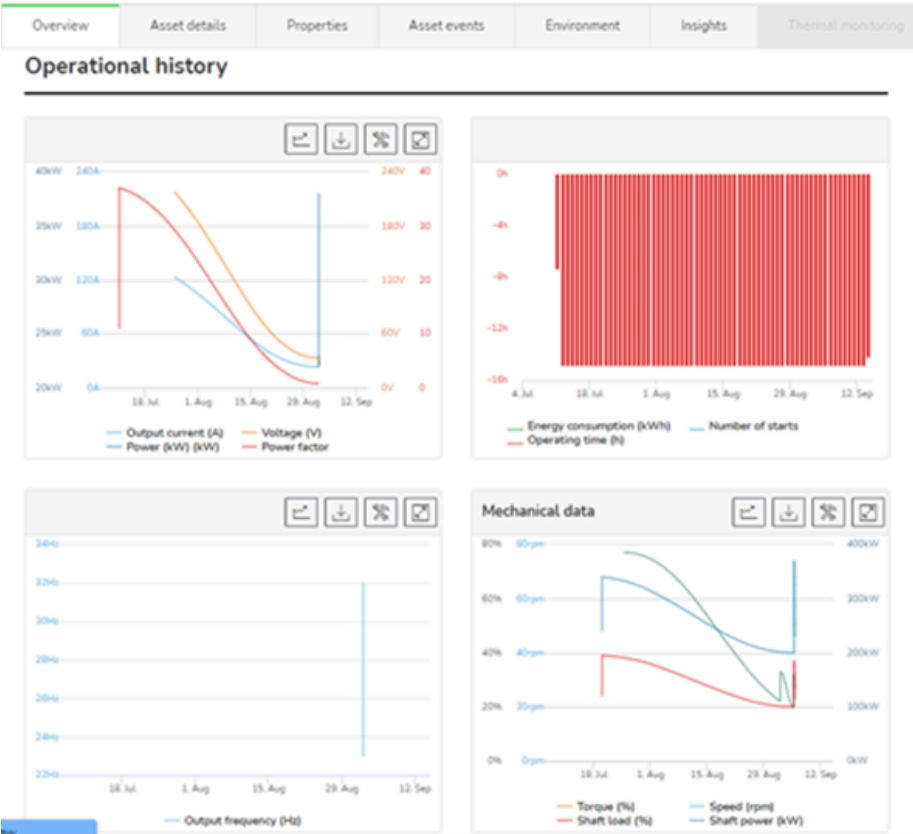
- Electrical health
- Load health
- Motor component health
- Motor control health
- Process health
- Shaft train health
- Transmission health

Degraded modes are immediately available by corresponding colored partial health indexes, in addition to overall health index.

NOTE: Corresponding indexes are available in **Insights** tab.



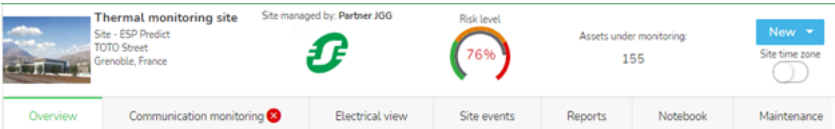
For all motors, **Overview** widgets are reworked to be similar to **Overview** widgets for drives: electrical parameters, energy and operating time with starts, **Output frequency** and mechanical data (**Torque**, **Speed**, **Shaft load** and **Shaft power**)



ESP for Electric Fire Prevention

New offer available in the offer table (refer to Service Levels, page 13), intended to deliver functionality to specific roles, in addition to CSH users and end users: partner role.

Specific area on top banner to display partner name and partner logo (if uploaded), on the right of end user logo/asset pictures.



Some specific views for combination of new offer and partner users:

During navigation, a new landing page is displayed for the site: **Fire prevention** tab (replacing **Overview** tab), having:

- **Fire Index Matrix** displays Electric Fire Risk Index (EFRP) and **MONITORING LEVEL**, and count of assets without index. Colors and numbers indicate risk and asset count on each matrix combination, plus a help function to provide description of matrix levels.



- New widget, **Critical events**, is a list of the top 5 critical events sorted by latest date.
- **Site contracts** widget is similar to general one created for partner users.

At asset level, navigation is updated as follows:

- Tabs open automatically in the following order, if the tabs are applicable: **Fire prevention > Thermal monitoring > Overview > Asset details** (default).



- In the ticket edition window, a new message reminds partner users to create Recommendations tickets manually if they require end-users to receive them.

Container Asset Type

Container asset type allows you to group together all assets with a common purpose. It consolidates information on health, events and other indicators.

It enables you to do the following actions:

- To create a new container with commercial reference, assign gateway (Site Server) and upload an SLD as one of the multiple SLD, and main assets inside container displayed on tree view.
- To assign templates available for LV circuit breakers, to speed up configuration.
- To create battery banks, as feature delivered from release 7.1.

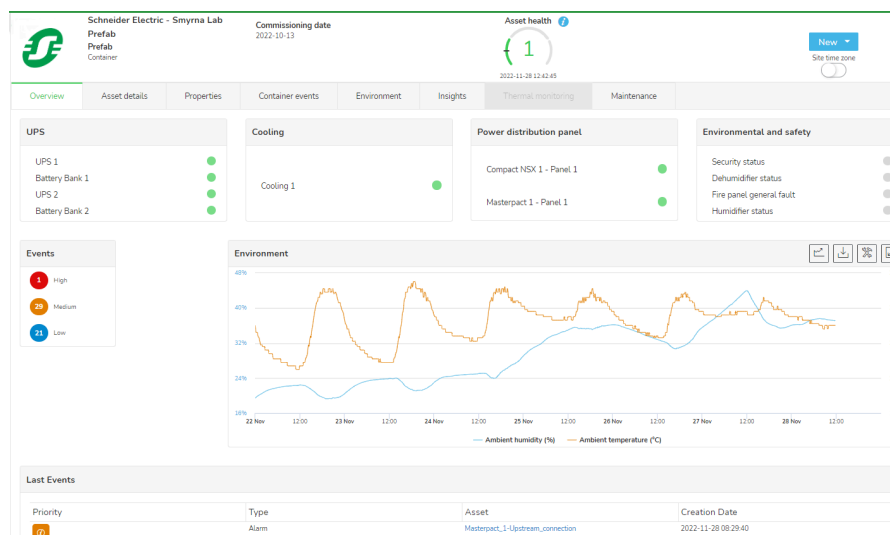
Cooling units are a new asset type.

There is an automated process to map indicators in web portal and telemetry from gateway with their physical addresses.

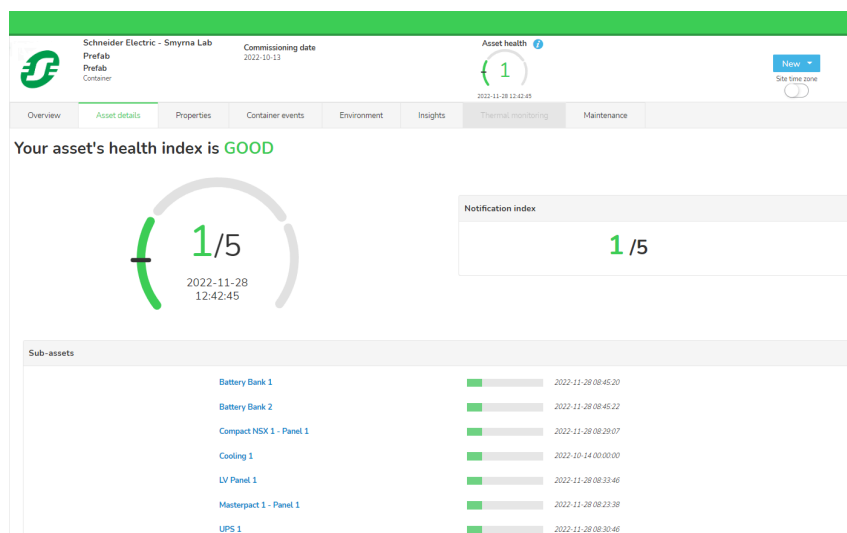
All that information gathered at factory is transferred to the web portal provisioning step, with a planned commissioning date.

The Container asset type has received some dashboard improvements:

- **Overview** tab provides health indication for all assets inside, summary of events by severity (last five events listed in order of severity), safety and environmental conditions tracking.



- **Asset details** tab provides more detailed information on overall asset health and on health of each sub-asset.



- **Container events** tab with all tickets from different assets and filtering options

Schneider Electric - Smyrna Lab
Prefab
Prefab
Container

Commissioning date
2022-10-13

Asset health 1
2022-11-28 12:42:45

Overview Asset details Properties **Container events** Environment Insights Thermal monitoring Maintenance

Ticket Id Status Priority Type Visibility Date Date Opened by me Search

Start date dd/mm/yyyy End date dd/mm/yyyy

Apply Filters

Prio...	Id	Type	Asset	Ticket	Status	Ticket Owner	Creation Date	Detail	Action
151713	Alarm	Masterpack_1-Upstream...	Control on temperature dis...	Opened		2022-11-28 08:29:40	Opened by Asset Advisor ...	Acknowledge Close	
149463	Alarm	UPS 1	Control on output voltages...	Opened		2022-11-22 17:28:32	Opened by Asset Advisor ...	Acknowledge Close	
149462	Alarm	UPS 1	Control on output voltages...	Opened		2022-11-22 17:28:32	Opened by Asset Advisor ...	Acknowledge Close	
149461	Alarm	UPS 1	Control on output voltages...	Opened		2022-11-22 17:28:32	Opened by Asset Advisor ...	Acknowledge Close	
149460	Alarm	UPS 1	U1N Output has crossed t...	Opened		2022-11-22 17:28:31	Opened by Asset Advisor ...	Acknowledge Close	

- **Maintenance** tab to display any maintenance jobs reported for any asset inside container.

Schneider Electric - Smyrna Lab
Prefab
Prefab
Container

Commissioning date
2022-10-13

Asset health 1
2022-11-28 12:42:45

Overview Asset details Properties Container events Environment Insights Thermal monitoring **Maintenance**

Export Search

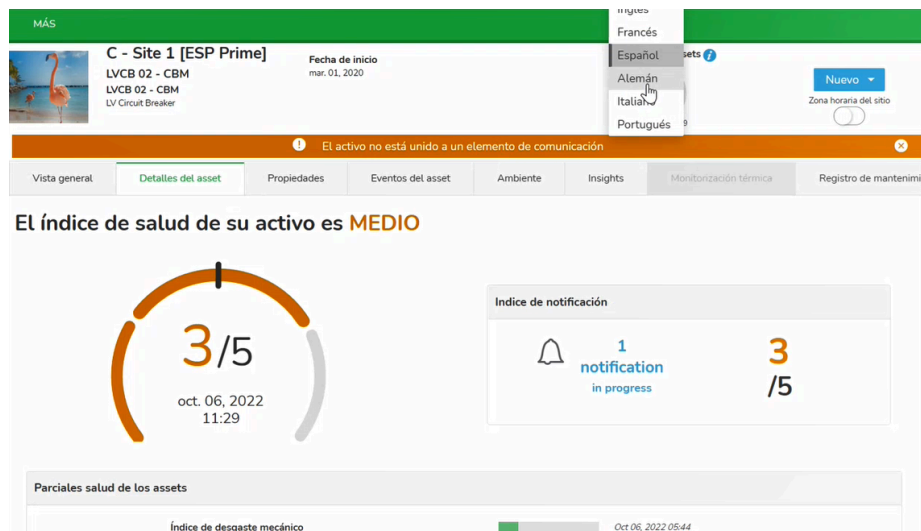
Asset	Asset type	Environment	Recommen...	Last mainten...	Remaining ti...	Maintenance ...	Next mainten...	Remaining us...	Last executio...	Action
Masterpack_1-Pa...	LV Circuit Breaker	Normal	5	2022-01-01	0.1 year(s)	1/5	2023-01-01	18.0 year(s)	2022-11-28	Edit
CompactNSX_1-P...	LV Circuit Breaker	Normal	5	2022-01-01	0.1 year(s)	1/5	2023-01-01	18.0 year(s)	2022-11-28	Edit

Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

General Improvements

- Translated pages displayed immediately when switching user language.
- Communication** tab is enabled to end users.




- Overview** tab
 - Site contracts information improved, including icon to quickly identify it as active (internal and partner users).
 - For Preventive levels, the view is simplified, without simulated features.

Site contracts

Current contract number:2021-con

Paying site: Yes



Priority status: Medium touch

Start date: 2021-02-17

End date: 2022-03-07

Contract	Start date	End date	Contract owner
2021-con	2021-02-17	2022-03-07	owner Contract
2020-contract >	2020-07-01	2020-12-31	Garrido Juan
309423832 >	2020-07-01	2020-10-01	Garrido Juan
1232 >	2019-01-01	2019-12-31	Garrido Juan

1 to 4 of 4 entries

<

>

Page

1

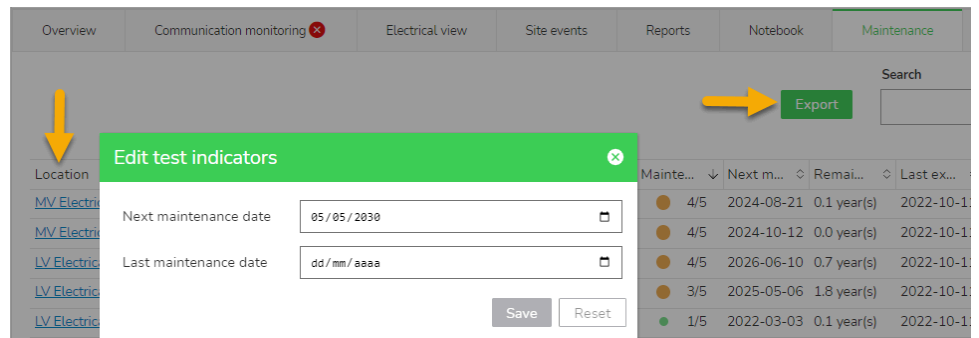
/ 1

>

>

- **Maintenance tab**

- New field in grid identifies location, displayed when looking at site level.
- Ability to edit next maintenance date and last maintenance date (if blank).
- Export functionality from new button to get all table records in a .csv file, unless last execution date is empty (not computed yet).



- **Evolution of maintenance log for circuit breakers**

- New field in creation window to add WO# (work order) used in bFS.
- Some new maintenance tasks or operations available for the asset LV circuit breaker.

Event description
Degrease the device mechanism
Grease the connection pads
Grease the device mechanism
Degrease the plugin connections
Grease rails
Grease racking screw
Replace auxiliaries (XF) (MX) (MN)
Grease the chassis and device connections
Grease the racking mechanism

Content for Help Function

- The help function has been upgraded with more detailed explanation adding content about partial maintenance indexes, clarifying meaning of bars in the widget.

Interpretation of the "Maintenance"
✕

About the Maintenance Index value:

1. No action needed. Scheduled maintenance date is confirmed.
2. The maintenance plan has to be reviewed with the support of SE experts.
3. The maintenance date of the asset has to be scheduled in the next 2 years.
4. The maintenance date of the asset has to be scheduled in the next 12 months.
5. Maintenance activity has to be re-scheduled with high priority.

About the Next maintenance date:

The next maintenance date is the date filled to do the next maintenance.
 The "Maintenance index" value is depending about this date.
 If you update it, then you have waiting the next execution of the algorithm to have the correct value for "Maintenance index".
 If the "Maintenance index" value ≤ 2 , then the system displays the "Next maintenance date", else it doesn't display it.

About Commissioning date:

The commissioning date is the date filled to the commissioning of the asset.

About the Last maintenance date:

The last maintenance date is the date when the technician done the last maintenance of the asset.

About the Initial maintenance date:

The initial maintenance date is the previous "Next maintenance date" filled, after the last execution of the algorithm to compute the "Maintenance index".
 If this field isn't present it means the "Next maintenance date" wasn't update since the last execution of the algorithm to compute the "Maintenance index".

About the Partial maintenance index:

The Partial Maintenance Index is computed for each potential degradation of each subcomponent of the asset.
 This degradation is internally scored from 1 (low) to 5 (high), same criteria than Asset Maintenance index detailed above.
 Score is displayed by filled bars and colors corresponds to following chart:

Partial maintenance index = 5	<div style="width: 100%; height: 10px; background-color: #e31a1c; border: 1px solid #ccc;"></div>
Partial maintenance index = 4	<div style="width: 80%; height: 10px; background-color: #e69d00; border: 1px solid #ccc;"></div>
Partial maintenance index = 3	<div style="width: 60%; height: 10px; background-color: #e69d00; border: 1px solid #ccc;"></div>
Partial maintenance index = 2	<div style="width: 40%; height: 10px; background-color: #2ca02c; border: 1px solid #ccc;"></div>
Partial maintenance index = 1	<div style="width: 20%; height: 10px; background-color: #2ca02c; border: 1px solid #ccc;"></div>

An index level =3, bar will be filled up at 60% with orange color.

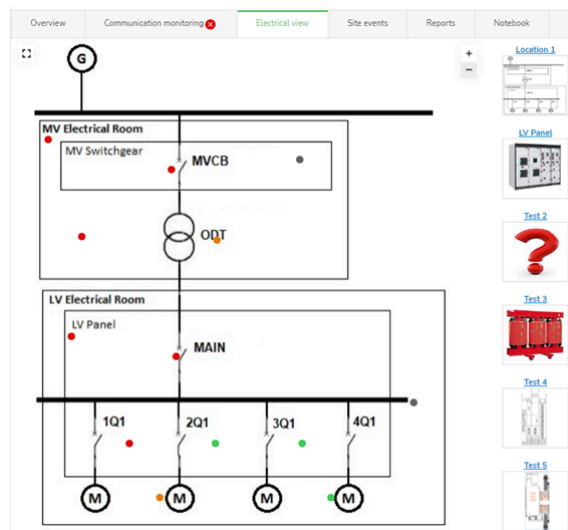
- The help function under **Electric fire prevention** tab is updated for MV panels.

Multiple SLD for a Site

You can move from one single electrical view for a site to multiple electrical views within the same site, at location level, and for an asset in tree view:

- During site provisioning, multiple pictures or SLD can be uploaded to better represent the specific location (for example, container, electrical room, or asset, switchgear).

- Secondary SLDs displayed as icons at main SLD page, column at the right.
- Navigation from general to specific ones by clicking on the icon, and back to main SLD.



Notifications on EAA Mobile Application

Updates on EAA mobile application delivered as v 2.2.6 include:

- Replacement of family fonts
- Pop-up window to close push notifications improved to reduce the number of clicks

Cybersecurity

No specific development in this release.

EAA Web Portal Version 7.2

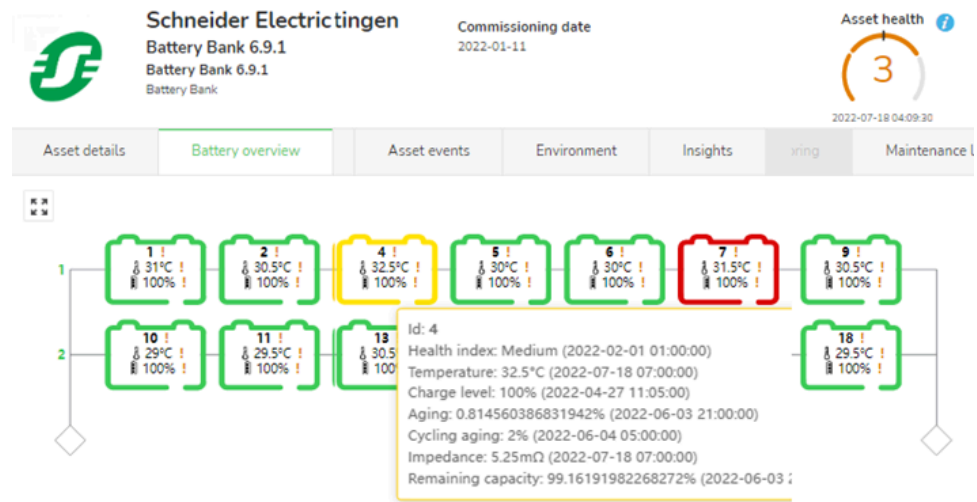
EAA Web Portal New Features

Battery Bank Aging

Analytics for battery banks are improved from Global Aging Framework (GAF) to complete analytics delivered from release 7.0. Improvements provided by GAF are new indicators to compute new aging for battery blocks:

- Calendar aging
- Cycling aging (full replacement of previous one)
- Capacity loss

In addition, health index for battery blocks computation is improved.














Electric Fire Prevention for MV Panel

New analytics to improve thermal monitoring for MV switchboards is available. Electric Fire Risk Prevention indexes are ready for MV panels, to assess more frequent initiating causes of electric fire, from data gathered out of devices suitable for installation in MV switchgear to identify related abnormal events.

There are two indexes computed at cubicle level and panel level:

- Electric Fire Risk Prevention index consolidates into one single indicator data gathered from thermal sensors, early combustion particle monitoring and insulation degradation monitoring.
- Monitoring level is a comparison with a predefined baseline for all potential positions to monitor within a column or cubicle, helping to understand confidence of the EFRP index depending on actual sensors installed and operating. Connecting more sensors increases monitoring level achievable.

In addition to TH110 sensors in multiple positions across each cubicle, you can use data streams from partial discharge devices and arc flash protection, as well as HeatTag sensors (fitted into LV compartment). Also, electrical data (such as current or voltage) and environmental conditions play a role in computing monitoring level.

Asset details	Properties	Asset events	Environment	Insights	Fire risk prevention
 Monitoring level 2 / 3					Cubicle 1 
Cable Overheating					
Arc Fault Protection					
Partial Discharges					
Thermal Connection Busbar					
Thermal Connection Upstream					
Thermal Connection Downstream					
Thermal Connection Cable					
Electrical Data					
Temperature, Humidity					

Both for LV and MV panels, new ticket templates have been added to report diverse situations, in particular scenarios of low monitoring level (or even 0 level), to increase end user awareness.

“Low” Monitoring level on LV Panel EFR_Index 0 ConfLevel 1 in site “SITE_C_Re7”.

2022-06-14 11:46 - Id : 11399 / SITE_C_Re7 / Building 08 - EFRP / Location 8.01 [EFR Index] / LV Panel EFR_Index 0 ConfLevel 1

Description









Ticket Creation Date: Jun 14, 2022 at 11:46:11 (Site time zone).

No electrical fire risk detected based on the monitoring level of your installation.
Recommendation: Check sensor availability and connection based on EFR sensor recommendation.

Date of the indicator: Jun 14, 2022 at 11:45:49 (Site time zone).

Ticket Priority: Low

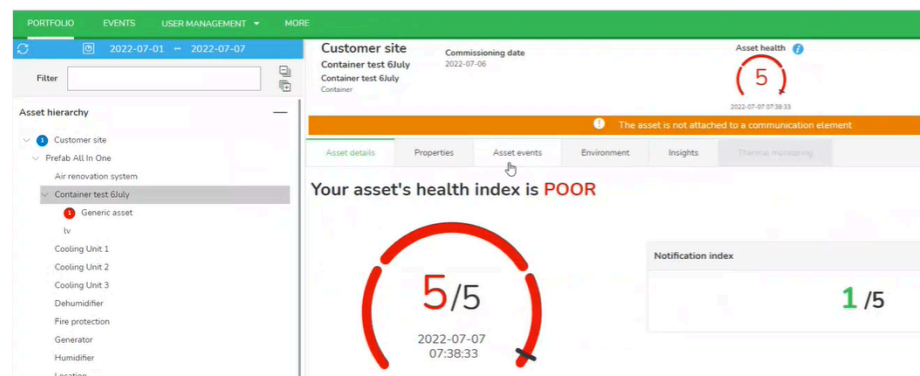
Comments Additional information Historical Attachments

B I U        

Container Asset Type

New asset type created within web portal hierarchy called **Container**. Equivalent to a location, with some Prefab specific parameters and features:

- Health index based on child assets inside container partial health indexes, and their own **Notification index**.



- Events reported will also display events from child assets. The events are listed but not used to calculate the health index.
- Asset type includes all options required.

Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

General Improvements

- Portfolio with favorites filtering on sites panel, not only tree view section.
- Events lifecycle: when updating ticket status, **Acknowledge** and **Close** button are enabled after mandatory fields filled, reducing user clicks.

S Load Apparent Power has crossed the Upper Information threshold in the asset Main 1A - (3BC).

Acknowledged by Céline ALLEC - 2022-07-07 09:28 - Id:11767

Description

Ticket Creation Date: Jul 6, 2022 at 09:09:19 (Site time zone).

EAA has detected a threshold crossing last July 6, 2022 at 08:15:00 (Site time zone).

Concerned indicator: S Load Apparent Power

- Indicator value: 1053 kVA

- Upper Information Threshold value: 1050 kVA

Ticket Priority: Low

Severity

Low

Visibility

Visible

Comment *

enable

Attachment

Attach A File

Acknowledge

- Minor improvements for **Events** grid:
 - Default filtering adding status = **Pending**
 - Viewer users (lower level of users) do not see **Action** column, or **New** button
- Date picker to apply a time frame for data requires fewer clicks, by allowing pick up list for month and year.

PORTFOLIO EVENTS USER MANAGEMENT MORE

2022-03-01 -- 2022-05-10

C - Site 1 [ESP Prime]

Risk level 67%

Electrical view

Type

Alarm

Recommendation

January 2022

April 2022

Apply

- Tree view:
 - Window is width-expandable.
 - Search improved: functional name included
 - Counter (bubble): updated to include tickets under **Pending**, **Opened** and **In progress** statuses.
- Maintenance log: Usability enhancements and consistency on mandatory fields with **Save** button.
- **Global Site Risk** is renamed **Site Risk**, in top banner, with a tooltip to explain what is computed. Same renaming for overall asset health index.

- For sites with Preventive service offer:
 - Count of assets is added to top banner.
 - On the site **Overview** tab, the widget with report details has been disabled.
- Site level (only for CSH users)
 - Overview** tab: New widget to display **Contract** information

- Maintenance** tab: **Export** button to create .csv file with records

- Asset level

For LV circuit breaker overview: **Number of trips (Computed)** replaces previous indicator (**Number of trips - Measured**) to avoid potential issues with counter reset at device. Computed number of trips keeps cumulated values, and provides more reliable data.

Ticket Management

There is a new filter for tickets selection, to select them by creation date. Filter works at site level events page and at asset level events page.

Double Sample Point Selection

New graphical component helping to gather information for two points from a multivariable chart, in order to compare their values, and calculate the difference for any variable in the chart. User needs to select the two samples in an expanded chart. The **Reset** button is used to start again to add more points.



Threshold by Default in Transformers


During initial provisioning, default threshold values are assigned to new transformers. Existing transformers with no threshold values are also updated with the default values. These thresholds can be updated by web portal users.

Oil transformer indicators	Warning thresholds	Alarm thresholds
LV connection temperature phase 1	70	90
LV connection temperature phase 2	70	90
LV connection temperature phase 3	70	90
MV connection temperature phase 1	55	65
MV connection temperature phase 2	55	65
MV connection temperature phase 3	55	65
Oil temperature	70	80
Oil tank cover temperature	80	90
Oil tank lower fin temperature	60	70
Oil tank upper fin temperature	75	85

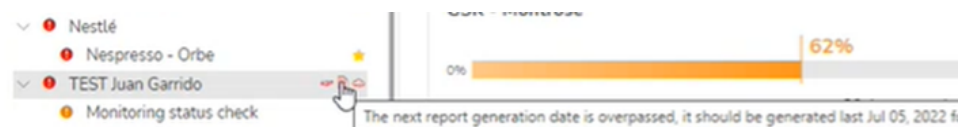
Improvements to Reports

Next Quarterly Communication

There is a new date field to track the date of next quarterly report execution, and an icon displayed near site name (on tree view). On dashboard, new date replaces monthly communication date.

Reports		
Last report		2022-01-19
Next quarterly communication date		2022-07-05
Next summary report date		2022-12-31
Summary report frequency		Monthly

The icon used for the annual report reminder is also activated as reminder for quarterly communication. Red icon indicates date is overdue, and tooltip gives information about the report type.



Automated Report

This report is created on demand.

A screen pop-up allows you to automate summary generation. The toggle button is disabled by default. It can be activated to create reports regularly.

Other Improvements and Support for Pilot Offers

EcoStruxure for Power and Process – Tickets Management

Continued improvement of tickets management imported from DCS Advisor :

- No forwarding to Global AMS, to avoid polluting other offer levels
- Tickets reported into EAA web portal with initial configuration as acknowledged (**In progress**) and visible.
- No bFO case or close buttons activated.
- On **Events** screen, a specific filtering value would help to narrow the list of events or excluding them.

PME Events Through ETP

A technical solution has been implemented to allow events from PME through ETP. They may be filtered, from a wider catalogue of existing alarms in PME.

The screenshot displays a ticket management window with the following details:

- Title:** Standby Due to Input Contact Error – Thermal Monitoring - Alarm triggered or updated from PME system, on asset InRow ACRD600 (17) in site Prefab Lattes
- Description:**
 - Ticket creation date : 30 Jun 2022
 - Alarm triggered or updated from PME system on asset InRow ACRD600 (17) in site Prefab Lattes
 - Last content is :
 - Summary : Standby Due to Input Contact Error
 - Details : Thermal Monitoring
 - State : True
 - Ticket priority : Medium
- Navigation tabs:** Comments, Additional information, Audit information, Attachments
- Rich text editor:** Includes buttons for Bold (B), Italic (I), Underline (U), List (ul), Indent (list-item), Link (link), and Unlink (unlink).
- Buttons:** Save, Cancel

EcoStruxure Panel Server Universal (PAS600)

Panel Server firmware version 001.003.002 (June 2022) contains cloud connection for the first time. In this release firmware has been tested, while adding some evolution for the connector:

- Double check of gateway serial number associated, with error displayed in case unmatching, and a **Retry search** button
- **Command** tab adapted to latest firmware evolution
- New ETP authentication and tenancy model

After end of commercial life of Com'X end of July 2022, PAS600 becomes the gateway to include in future architectures.

To gather additional information about new Panel Server releases, refer to EcoStruxure Panel Server user guide and release notes, page 11.

Minor Improvements

Minor improvements have been applied and some bugs fixed, including:

- Corrected wrong naming for any current indicator, all named as output current

- Oil transformer – **Oil temperature profile** widget (histogram) is now created with % on Y-axis
- Added electrical upstream asset id to generic asset properties, in order to link indicators from generic asset to parent level
- Correction of units for some properties (for example, MV motor fan, rated shaft power)
- **Winding temperature** widget is added by default in dry transformers **Insights** tab.

Notifications on EAA Mobile Application

Updates on EAA mobile application delivered as v 2.2.4 include:

- Notification close button, reducing clicks to get notification closed
- Access to login after notification
- Logout button to close session
- Language by default based on user preferences, not mobile OS

Cybersecurity

Sanitize method to allow special character **&** in input text fields.

EAA Web Portal Version 7.1

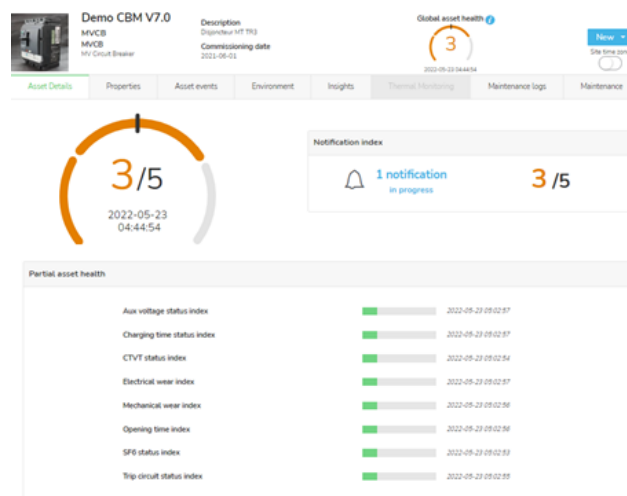
EAA Web Portal New Features

MV Circuit Breaker Aging

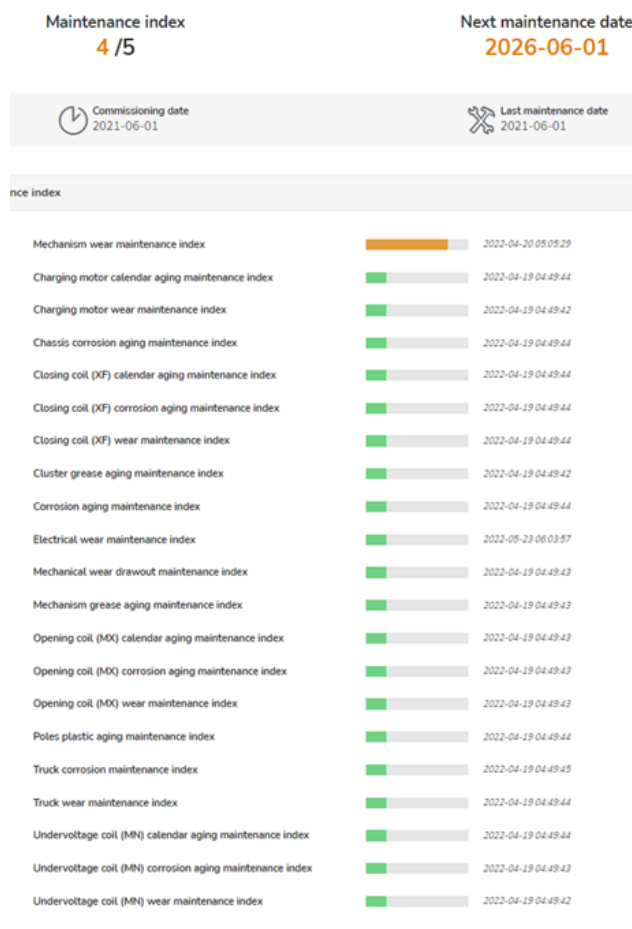
Depending on configuration made during provisioning, new indicators provided by GAF for MV circuit breakers and subassemblies (charging motor, chassis, undervoltage coil clusters, truck).

GAF brings for partial aging indexes up to 21 new indicators. The new indicators can have an impact on partial and global health and maintenance indexes.

GAF can be initialized using the GAF simulator, for MV circuit breakers and for LV circuit breakers.



- **Maintenance logs:** the list of maintenance activities has been upgraded according to maintenance tasks performed on MV circuit breakers. Additional records related to maintenance log and dates are available. They are taken into account for **Maintenance index** computation.
- **Maintenance tab:** at asset level, the **Maintenance** tab provides details on elements to get serviced. It helps Field Service Representatives to organize on-site intervention, providing partial maintenance index linked to subcomponents.



Drives Dashboards

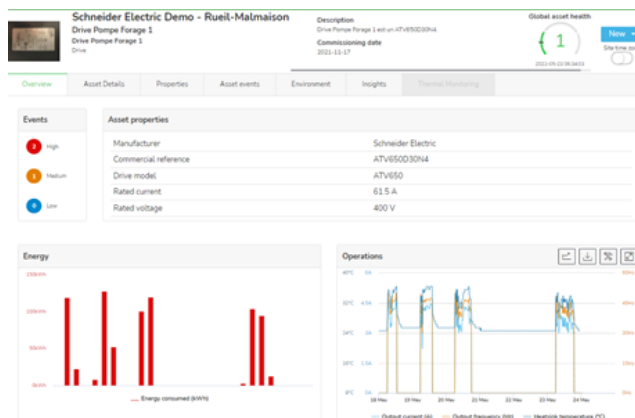
The dashboard has been reworked. Some measurements and indicators have been renamed to make understanding easier for non-expert users.

LV Variable Speed Drives

The new **Overview** tab displays:

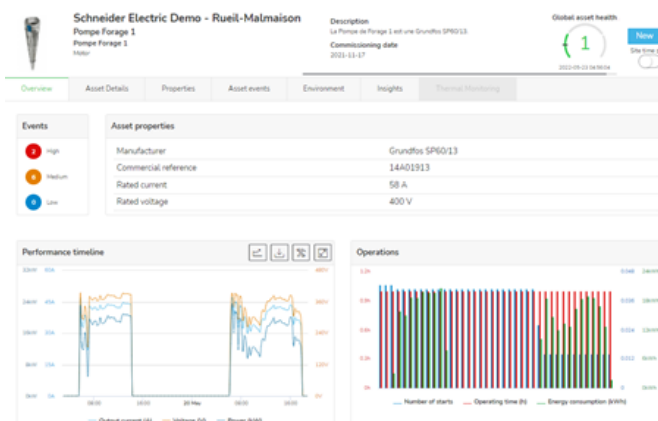
- **Events** count
- Key asset properties

- Operational indicators:
 - Events** count provides recommendations for Predictive or equivalent level offer.
 - Energy consumed** in kWh, grouped by dates on axis. Availability for switching between date grouping according to selected timeframe. A tooltip explains how to read information.
 - In **Operations**, **Heatsink temperature (°C)** has been added to the chart.



Motors

Minor updates make the **Overview** tab similar to **Variable Speed Drives** view. Trend section removed.



MV Variable Speed Drives

The new **Overview** tab displays transformers cubicle temperatures and pressure, in addition to event count.

Improvements to EAA Web Portal

Improvements are available in EAA web portal. Ergonomic improvements provide a better user experience.

AMaaS Offer Package

Display of AMaaS as an extra site feature under Predictive level. AMaaS displays an external tool (**Power BI**) to run basic reports. The basic reports are fed in particular by EAA web portal extractions.



EcoStruxure Panel Server Universal (PAS600)

Improvements in Panel Server firmware version 001.003.001 (May 2022):

- Identifying issues during gateway commissioning
- Easily check or troubleshooting of unmatched indicators and record and publication settings

EcoStruxure for Power and Process

EcoStruxure for Power and Process pilot offer improved:

- Alarms from DCS Advisor are listed in the EAA web portal, under the new event type.
- The user can filter the alarms with a dedicated filter option.

Global AMS Integration

EAA web portal integrated with Global AMS in bFO, to provide alarms information to the global system that is managing digital offers alarms.

A CSH user cannot any more update an alarm ticket in the EAA web portal by using **Action** buttons. An end user can do it.

Minor Improvements

Upon reporting by CSH and other advanced users, improvements and bugs fixed, including:

- New **Overview** tab for LV circuit breakers, that summarizes main indicators having an impact on the asset performance.
- Computation of torque overload probability on limit case of deviation = 0.
- Environmental information displayed for generic assets as profile or chart.

- Ergonomics improved on widgets for indicators:
 - More indicators available, suitable for profile chart displaying option.
 - By clicking the last value, the user has access to the indicator history.
 - Display of environmental profile widget with customized timeframe.
 - New sorting for thermal monitoring connection points.
- For the Partner user role, possibility to create a ticket manually and attach files.
- For the end user role, possibility to deactivate an alarm, with double check before update.
- **Global risk level** gauge display harmonized with asset health index. Not displayed for preventive sites.
- Blue icon to open a pop-up window with indicator meaning for Electrical Fire Risk, **Maintenance** table, **Global risk level**.
- Tooltip used to display long names.
- Dashboards display only indicators with historical data.
- In the **Insights** tab, for Linked indicators type, display into brackets of name of parent asset where information is gathered.
- The user time zone can be activated by a toggle button, which converts all time series to the user time zone.
- Formatting issues with decimals fixed.
- New messages to summarize Electrical Fire Prevention.
- Data extraction improvement to prevent duplicates related to technical devices.
- Low priority ticket bubble displayed in blue .

Notifications on EAA Mobile Application

No updates on mobile application delivered as v 2.2.2.

Cybersecurity

- The fourth and last vulnerability detected during the penetration test has been fixed.
- New ETP authentication process using new internal application programming interfaces to manage ComX. No impact on the user experience.

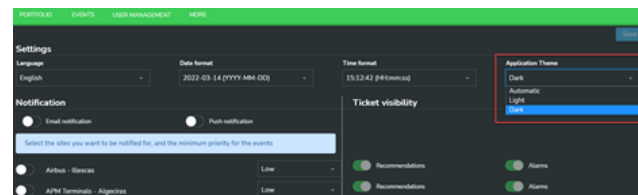
EAA Web Portal Version 7.0

EAA Web Portal New Features

One Monitoring Dashboard

Introduction of one dashboard to provide same user experience whatever the role (end users, CSH, then partners in the future). Expert platform kept for administrators and advanced users.

From the drop-down list **Application Theme**, the user can swap from light to dark mode.

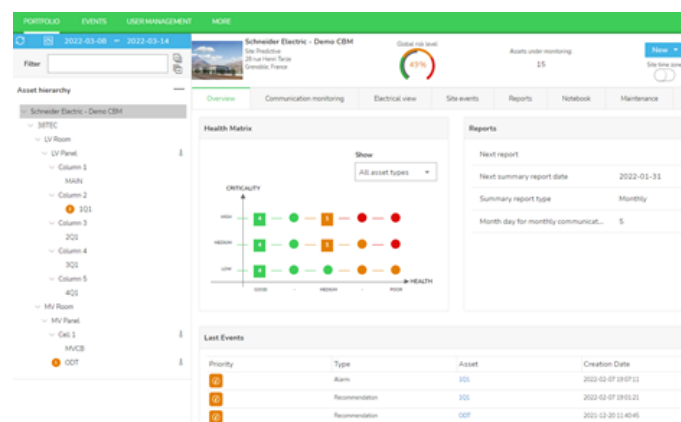


Site Landing Page

Enhanced site landing page with more filtering options on top of hierarchy.

Global risk level displayed on top of the screens and visible across screens.

Alarm counter no more visible on the site landing page.



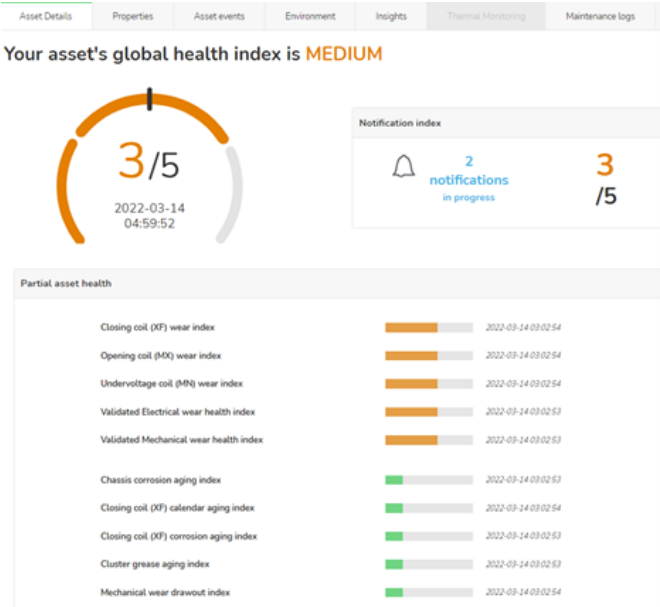
Asset Landing Page

Enhanced asset landing page with **Notification index** separated from the other partial indexes. **Partial asset health** indexes ranked by severity level.

Quick access to notifications in progress possible from **Notification index**.

Indexes are visible under **Partial asset health** after CSH validation.

A not computed **Partial asset health** index appears greyed.



Communications Tab

CSH users can follow up gateway status in a **Communications** tab.

Maintenance Tab

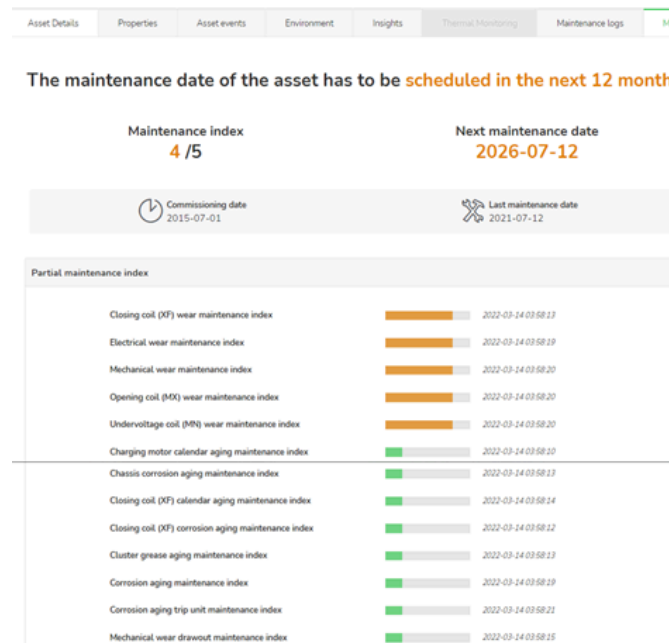
At site level, the **Maintenance** table provides a clearer view of assets requiring attention. The table provides sorting options and indicates the remaining time before next maintenance in years with one decimal.

The screenshot shows the 'Maintenance' tab of the EcoStruxure Asset Advisor. It displays a table with columns for Asset, Asset type, Environ..., Recomm..., Last mai..., Remainin..., Maintena..., Next mai..., Remainin..., and Last exe... The table lists several assets, including LV Circuit Bre., MV Circuit Br., and Oil Transform., with their respective maintenance status and remaining time.

Asset	Asset type	Environ...	Recomm...	Last mai...	Remainin...	Maintena...	Next mai...	Remainin...	Last exe...
101	LV Circuit Bre...	Normal	5	2021-07-12	4.3 year(s)	4/5	2026-07-12	0.8 year(s)	2022-03-14
201	LV Circuit Bre...	Normal	5	2021-07-12	4.3 year(s)	3/5	2026-07-12	17.2 year(s)	2022-03-14
301	LV Circuit Bre...	Normal	5	2021-07-12	4.3 year(s)	3/5	2026-07-12	21.5 year(s)	2022-03-14
401	LV Circuit Bre...	Normal	5	2021-07-12	4.3 year(s)	3/5	2026-07-12	21.3 year(s)	2022-03-14
550N	LV Circuit Bre...	Normal	5	2021-07-12	4.3 year(s)	3/5	2026-07-12	18.3 year(s)	2022-03-14
MVCB	MV Circuit Br...	Normal	5	2021-07-13	4.3 year(s)	3/5	2026-07-13	20.3 year(s)	2022-03-14
ODT	Oil Transform...	Normal	5	2021-07-13	4.3 year(s)	3/5	2026-07-13	33.4 year(s)	2022-03-14

At asset level, the **Maintenance** table provides the following information:

- Details about the sub-assembly to service.
- Breakdown of different partial maintenance indexes linked to subcomponents.



Product Ranges

Addition of two product ranges with the following models:

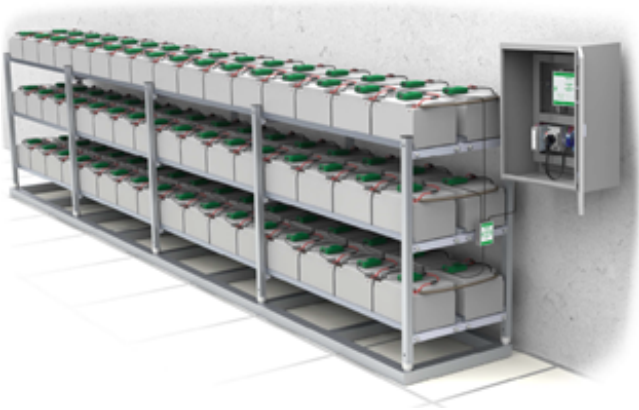
- Models for PowerPacT (LV circuit breaker) :
 - PowerPacT AH 15-500 HD, AH 15-500 HG, AH 15-500 HJ
 - PowerPacT AJ 70-250 JD, AJ 70-250 JG, AJ 70-250 JJ
 - PowerPacT 400L 70-400 LD, 400L 70-400 LG, 400L 70-400 LJ
 - PowerPacT 600L 200-600 LD, 600L 200-600 LG, 600L 200-600 LJ, 600L 200-600 LL
- Models for Altivar Process Modular (APM):
 - ATV6A0, ATV6B0, ATV6L0
 - ATV9A0, ATV9B0, ATV9L0

Battery Management System

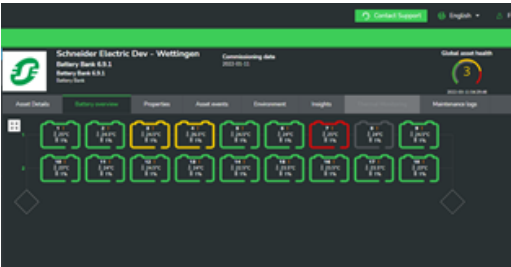
Battery Management System is a new asset type, available under **Substation>Room** or **UPS**.

New indicators:

- **Battery string ripple current:** To monitor that the battery string ripple maximum current is under recommended parameters and to boost charge conditions to values specified by the manufacturer.
- **Battery string charge current:** To monitor that the battery string charge current is delivered as per UI-characteristic according to DIN 41773.
- **Equivalent full cycles aging model:** To compute aging counting discharge and discharge ratio.
- **Identification of deviant blocks:** To detect the battery blocks that significantly differ from most of the others.
- **Charge level of battery block:** To assess the relative charge level of each battery by integrating the discharge current and comparing the rated capacity of the battery for the actual discharge current.



The **Battery overview** tab displays which battery block requires maintenance operations based on poor health (aging and wear).



The **Asset details** page displays a single chart with all blocks in a battery string. For each block, capacity and impedance are represented by dots, creating two curves. Health is represented by a color coded column. Key values are indicated above the chart.



Logs are available in the **Maintenance logs** tab.

ESP for Electric Fire Prevention


For easier troubleshooting, improved visibility of the component raising **Electrical Fire Risk** and the **Column** where it is installed.

Asset Details	Properties	Asset events	Environment	Insights	Thermal Monitoring	Fire risk prevention
Electrical fire risk is HIGH , check the installation immediately.						
Electrical fire risk		Column 1		Column 2	Column 3	
Monitoring level		3		3	3	
Cable overheating		●		●	●	
Thermal Connection Busbar		●		●	●	
Thermal Connection Upstream		●		●	●	
Thermal Connection Downstream		●		●	●	
Thermal Connection Cables		●		●	●	
Device Data		●		●	●	
Ambient Temperature, Relative humidity		●		●	●	

Improvements to Reports







A quarterly communication report replaces the monthly automated report (which can still be issued on-demand). New cadence of report distributed for Predictive level is as follows:

- One issue of full tailored report
- Three issues of shorter, semi-automated summary

Reports		
Last report		2022-02-25
Next report		
Next summary report date		2022-04-29
Summary report type		Quarterly
Month day for monthly communication		5

Planned date for next report is indicated in the **Reports** section. Summary report is preferably issued on third quarter.

The enhanced grid displays reports and other customer shared documents, including a visibility flag for CSH users.

Overview				
Communication monitoring				
Electrical view				
Site events				
Reports				
Notebook				
Report generation settings: Last 12 months				
Customer presentation				
Communication report				
Summary report				
Other				
Report name	Report type	Customer visibility	Report period	
 - Antwerp - 2022 February - 20220302_0324 - Summary report	Summary report	<input type="checkbox"/>	February 2022	February 2022
 - Antwerp - 2022 February - 20220301_0321 - Communication report	Communication report	<input type="checkbox"/>	February 2022	February 2022
 - Antwerp - Presentation 25 February 2022.pdf	Summary report	<input checked="" type="checkbox"/>	February 2021	February 2022
 - Antwerp - 2022 January - 20220202_03213 - Summary report	Summary report	<input type="checkbox"/>	January 2022	January 2022
 - Antwerp - 2022 January - 20220201_0322 - Communication report	Communication report	<input type="checkbox"/>	January 2022	January 2022
 - Antwerp - Presentation 31 January 2022.pdf	Customer presentation	<input checked="" type="checkbox"/>	November 2021	January 2022

Other Improvements and Support for Pilot Offers or New Offers

Minor improvements have been applied and some bugs fixed, including:

- Improvement in computing indicators for Altivar Process Modular ATV630 and ATV950
- Possibility to disable an indicator
- Improvements of description included in some event templates
- Improvements around management of device and gateway technical data
- Correction of minor errors in:
 - functions to download technical devices
 - functions to delete gateways

Notifications on EAA Mobile Application

Updates on EAA mobile application delivered as v 2.2.1 include:

- Improvement on curves display
- Synchronization with web portal for ticket management
- Improvement on usability

Cybersecurity

Three out of four vulnerabilities detected during pen-test have been fixed.

Glossary

A

AMaaS: Asset Management as a Service. Offer package, under pilot with large multicountry customers, which is bundling multiple services, digital and traditional, while having a single dashboard to track them, accessible from [EAA](#) web portal.

AMS: Alarm Management System. CSH user system (for internal use only) to manage all alarms or tickets triggered from diverse platforms

API: Application Programming Interface. Software intermediary that allows two applications to talk to each other. APIs are an accessible way to extract and share data within and across organizations.

AVEVA Data Hub: A cloud-native operations data management SaaS for data sharing using the scale and flexibility of the cloud.

B

bFO: Bridge Front Office. Customer Relationship Management (CRM) used by Schneider Electric sales teams. Includes Contact Center module and Installed Base records of equipment sold to each customer site.

bFS: Bridge Field Services. Internal system used by Schneider Electric to manage service contracts and their operations or work orders.

C

CID: Customer Identifier

CRM: Customer Relationship Management. Any tool, strategy, or process that helps businesses better organize and access customer data.

CSH: Connected Services Hub. Our service teams who provide remote support for the digital services are grouped in locations called hubs, giving the name to those teams as Connected Services Hub.

D

DCS Advisor: Schneider Electric distribution control system controlling continuous flow processes (oil and gas), in opposition to discrete manufacturing.

E

EAA-ED: EcoStruxure Asset Advisor for Electrical Distribution

EAA: EcoStruxure Asset Advisor. Web portal which is a suite of cloud-based applications and remote services for asset management of critical electrical distribution equipment.

ECTM: Electrical Connection Thermal Monitoring. Advanced analytics to estimate temperatures on thermal points, based on data driven modelling, where new measurements are compared to model predicted value.

EFRP: Electric Fire Risk Prevention

EPMS: Electrical Power Monitoring System is an asset type. Previously called PMS.

ESP: EcoStruxure Service Plan. Range name for recurring services offers. It is broken-down into several families or practices, such as power quality and asset management.

ETE: EcoStruxure Transformer Expert. A cloud application sold under [SaaS](#) business model, focused on the monitoring of oil transformers, thanks to a specific sensor (ETE sensor).

ETP: EcoStruxure Technology Platform. Part of the EcoStruxure backbone, used by many offers as the entry point for data flows from field devices via gateways.

G

GAF: Global Aging Framework. Analytics focused on computing equipment aging by looking at equipment subassemblies aging and their maintenance information.

H

HP: Horsepower

L

LV: Low Voltage

M

MDC: Modular Data Center

MV: Medium Voltage

MVO: Medium Voltage Offer

O

OMD: One Monitoring Dashboard refers to unique dashboard of EAA web portal to be used by any platform user, while functionality is organized by roles.

OnSite: The mobile app used by the Schneider Electric Field Service Representative during the maintenance visit.

P

PA: Power Advisor is part of EcoStruxure Service Plan Power Management solution. Personalized service contract combining power health monitoring and advanced analytics, 24/7 remote technical support and expert's consultancy in power management and manufacturer field service execution.

PAS: Panel Server is a gateway providing a seamless connection of wired or unwired smart Internet of Things devices to edge control software or cloud application.

PAT: Personal Access Token

PCB: Printed circuit board

PD100: The Schneider Electric product to monitor partial discharge phenomena.

PHI: Partial Health Index

PME: EcoStruxure Power Monitoring Expert is a software solution to monitor electrical system on-site, focused on energy management and power quality.

PMS: Power Monitoring System was an asset type. Renamed to EPMS.

Power BI: Commercial brand name for Business Intelligence tool to run analytics on data warehouses or other similar repositories.

Prefab: Prefabricated Modular Data Centers

R

REST: Representational state transfer. An architectural state transfer for developing web services. A REST API is a specific type of API that adheres to the constraints of the REST architecture.

S

SaaS: Software as a Service. Method of software delivery and licensing in which software is accessed online via a subscription, rather than bought and installed on individual computers.

SAM4: Third party technological platform. System-to-system integration that allows **EAA** to leverage capabilities from that external system into web portal.

SLA: Wall humidity sensor

SLD: Single Line Diagram

U

UPS: Uninterruptible Power Supply

V

VSD: Variable Speed Drive. Device supporting connection of motors to power grid with advanced features to apply variable frequency and better manage energy efficiency, soft starting among other protection functions for critical rotating equipment in the plant.

W

Webhook: HTTP-based callback function that allows lightweight, event-driven communication between two application programming interfaces (APIs).

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