

A nighttime photograph of a city skyline, likely Hong Kong, with numerous skyscrapers illuminated. The word "INNOVATION" is overlaid in large, bold, green capital letters across the center of the image.

INNOVATION

Power SCADA Operation 2020

What's New *(January 2020 Update)*

Rich Alexander: PSO offer manager

A photograph of a man and a woman in an office environment. The man, wearing a dark striped shirt over a blue t-shirt, is standing and smiling as he looks at a laptop. The woman, wearing a purple and orange top, is sitting at the desk and pointing at the laptop screen. The background is a blurred office space with a window.

PSO Offer Overview Recap

For those new to Power SCADA Operation

EcoStruxure™ Power - Digitizing your electrical distribution system with a future proof IoT Power Management platform

We deliver safe, reliable, efficient and compliant Power Management systems for large & critical facilities



Data Centres



Healthcare



Industry



Infrastructure



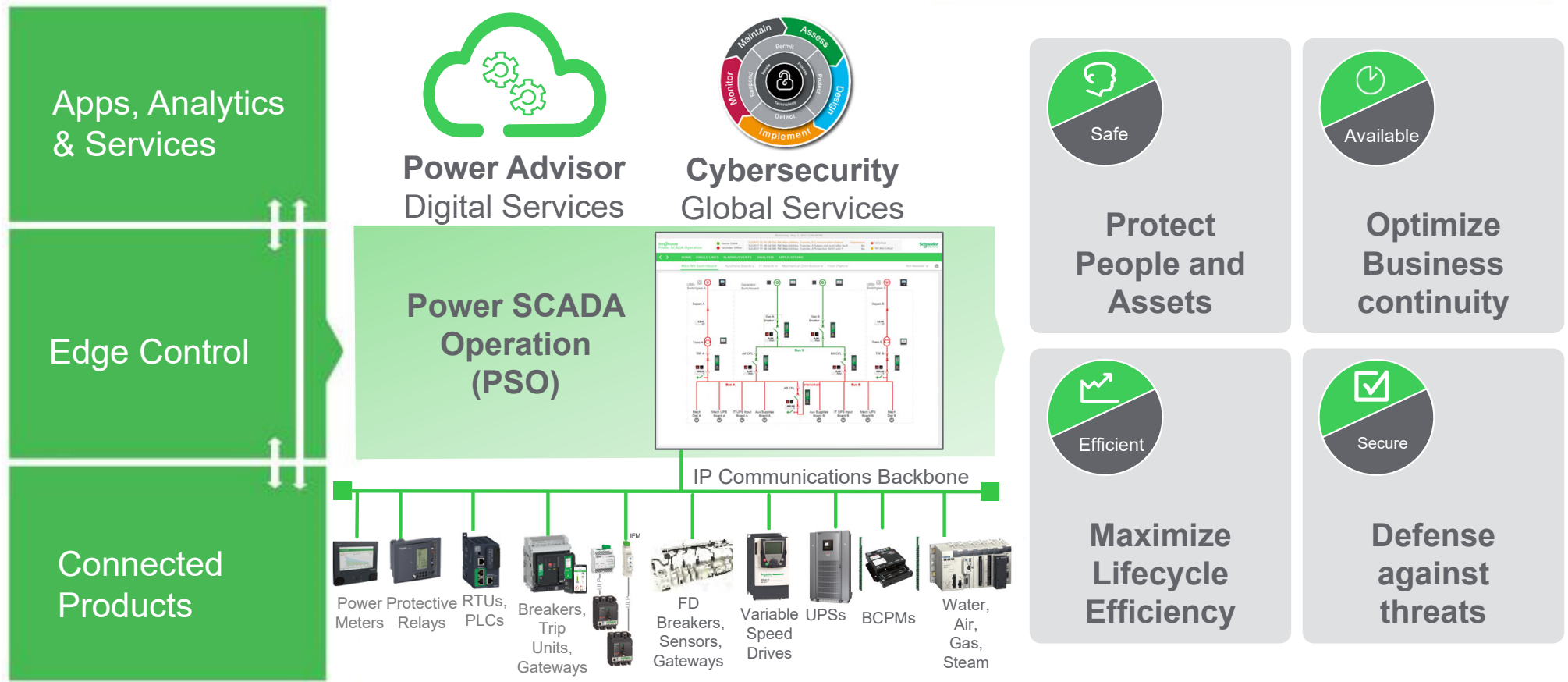
Buildings

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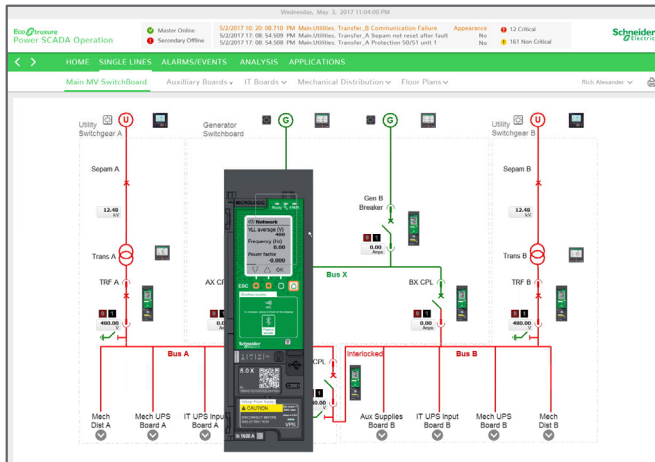
Innovation at Every Level: Power SCADA Operation

Power SCADA Operation (PSO) brings edge control to power distribution



Power SCADA Operation for real-time situational awareness

The power of a **SCADA** uniquely designed for **Power Management Applications**



Power SCADA Operation enables Facilities teams in **Power Critical Facilities** to monitor, control, and troubleshoot issues in real-time with their **MV and LV distribution systems** to **maximize power availability and operational efficiency**.

Power monitoring & alarming

- High performant **real-time communications**
- Native system **redundancy** and scalable architecture
- **Extensive protocol support** & **open data exchange**
- Highly **customizable** graphical experience
- Certified **compliance** with global cyber-security standards

Manage energy resources in real time

- Manage **microgrid scenarios** like automatic transfer schemes, load sharing or shedding
- Remotely and safely **control breakers**

Mitigate downtime & safety risks

- Restore power quickly via **power events analysis**
- Reduce risk of electrical fires via **continuous thermal monitoring**
- Improve safety via **active arc flash protection** & operator notification



PSO 2020 What's New

New Features and Benefits

PSO 2020 Major Scope Themes



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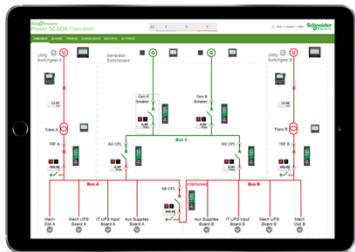
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EcoStruxure™ Power SCADA Operation 2020

5 key benefits

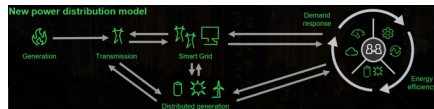
Modern Graphics & Alarms

Modern graphics and alarm user experience addressing operator's need to access their system **Anywhere, Anytime** and with **Any Browser** while complying to IT organization's need for **standard HTML5 web deployment** approach.



Microgrid Ready

Via animated 1-line quickly understand **the real-time power flows of multi-source systems** becoming more prevalent with adoption of **distributed generation, Microgrids** and renewables.



Cybersecurity Ready

Certified compliant with global cyber-security standard **ISA/IEC-62443**. Role-based access control via Windows Active Directory + **two-factor authentication** support. **Hardened against “zero day attacks”** via white listing solution.



ISA-62443

World Ready Translatable Software

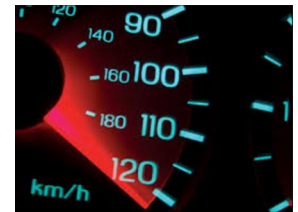
Runtime, key design tools and documentation **fully translatable**.

PSO 2020 initially available in both English and **French** with more languages possible in future!



Simpler Deployments

Modern graphics allowing engineers to **create graphics more quickly** for a variety of screen resolutions. Improvements making **multi-site / multi-cluster deployments simpler** for engineers.



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A woman with long dark hair and a man with a beard are smiling and looking towards the camera. They are standing on a modern office balcony with a glass railing. The background shows a bright, modern office interior with large windows.

Commercial Updates

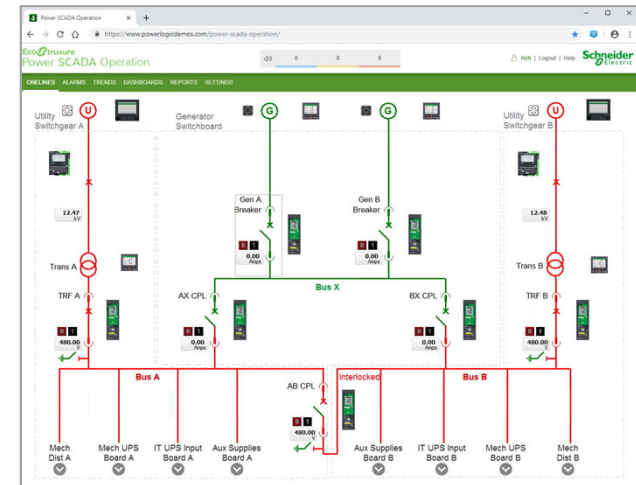
Part numbers, Policies and Licensing

About Power SCADA Operation 2020

Internal commercial information

- EcoStruxure **Power SCADA Operation 2020** is:
 - Free upgrade for customers with software assurance
 - Paid upgrade from PSO 9.0 and previous versions
- Release date for PSO 2020 is **February 7, 2020**

EcoStruxure™
Power SCADA Operation



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PSO 2020 Commercial Updates Summary

Commercial Updates

- **SIMPLE - No new references!** Same references and offer structure as 9.0.
- Note: New **PSO 2020 native web client** is licensed via **existing Control Client part numbers**:
 - PSA102012: Power SCADA Control Client, 500 Points
 - PSA102013: Power SCADA Control Client, 1500 Points
 - PSA102014: Power SCADA Control Client, 5000 Points
 - PSA102015: Power SCADA Control Client, 15000 Points
 - PSA102099: Power SCADA Control Client, Unlimited Points

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PSO 2020 Software Support Matrix

Operating Systems and SQL support

Windows Operating Systems

- Windows 10 Professional/Enterprise
- Windows Server 2012 R2 Standard/Enterprise
- Windows Server 2016 Standard
- ***New for PSO 2020!* Windows Server 2019**



SQL Server editions (applicable when using Advanced Reporting Module)

- SQL Server 2012 Express/Standard/Enterprise/Business Intel.,SP2
- SQL Server 2014 Express/Standard/Enterprise/Business Intel.
- SQL Server 2016 Express/Standard/Enterprise/Business Intel.
- SQL Server 2017 Express/Standard/Enterprise/Business Intel. (*included with Advanced Reporting*)

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A photograph of a control room with several operators at workstations. Large monitors in the background display complex data visualizations. A green semi-transparent banner is overlaid across the middle of the image, containing white text.

Modern Graphics & Alarms Native HTML5 Experience

Next Generation PSO Web Client

Why a next generation web client for PSO?



#1 – Mobile Operator Access

PSO operators need to access their system...
Anywhere, Anytime & with Any Browser

#2 – IT Compliance

IT organizations need to have a solution that does **NOT** require web browser plugins or 3rd party streaming software

#3 – Simpler to deploy

Application engineers need to have a modern graphics solution that is **simple to develop and deploy** across a variety of screen resolutions

#4 – EcoStruxure Consistency

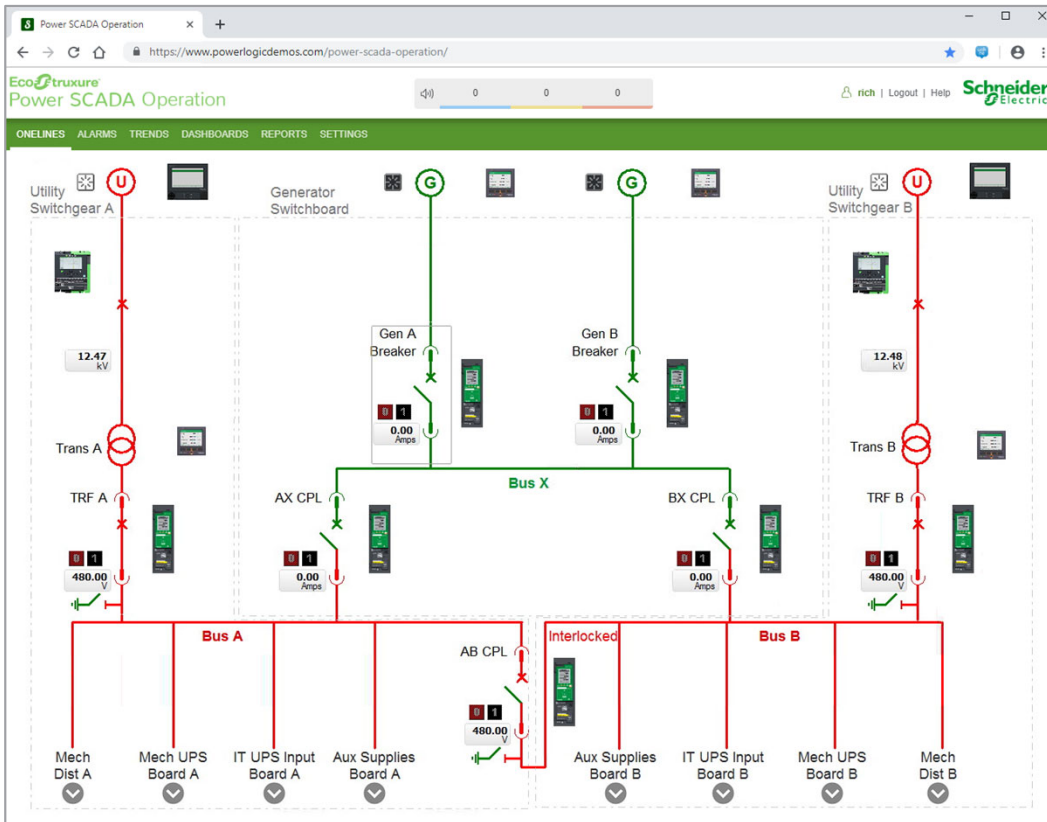
Our customers want a **consistent runtime experience** as they move between our Edge Control offers (ie: PSO, PME and EBO)

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Next Generation PSO Web Client

Meeting IT compliance needs for native web client run-time experience



Quickly understand real time state of your power system

View runtime graphics including **animated electrical 1-lines** via any **HTML5 compliant web browser** (eg: Chrome, Firefox, Safari)

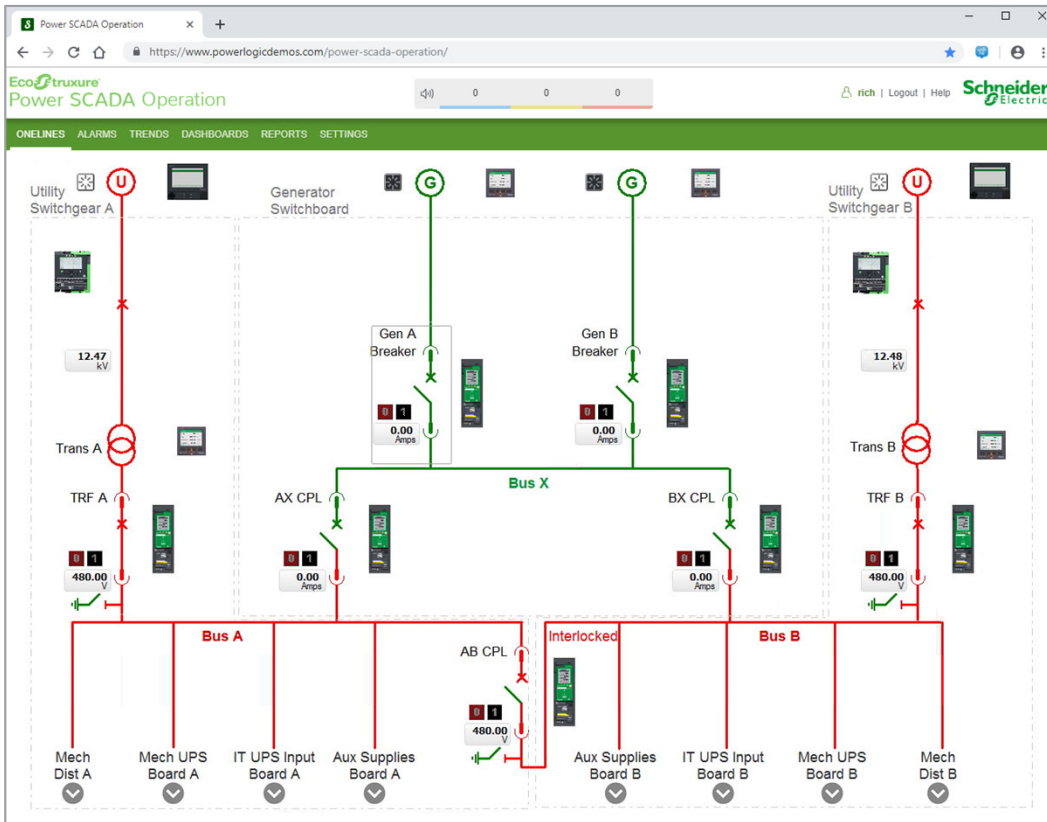
Maintain clear image quality when viewing from various screen resolutions and when performing pan/zoom

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Next Generation PSO Web Client

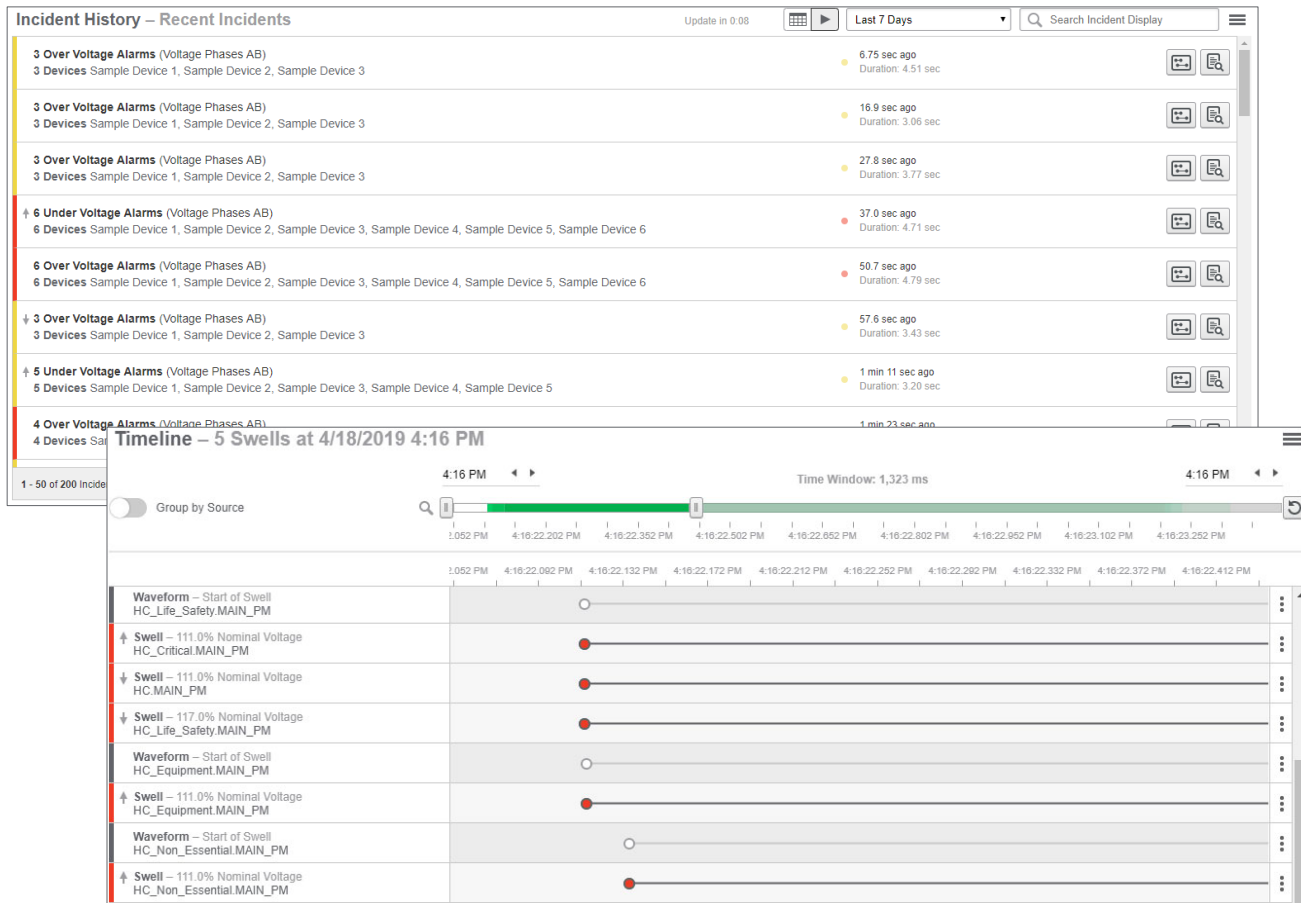
Graphic features details



- Current PSO Power graphics re-created for new PSO 2020 web client
- Ability to import **.TGML**, **.SVG** (Scalable Vector Graphics), **.DXF** and **.DWG** (AutoCAD) and convert to pan/zoom graphics
- Ability to import other non-scalable image formats **bitmap** (.bmp, .dib), **GIF**, **ICO**, **JPEG** (.jpg, .jpeg, .jpe, .jfif, .ewif), **metafiles** (.wmf, .emf), **PNG**, **TIFF**
 - *Importing non-scalable images will not convert them to scalable format*
- Ability to export to **.TGML**, **.BMP**, **.GIF**, **.JPEG**, **.PNG** and **.TIFF**
- Support for client side JavaScript

PSO alarm aggregation

The Right Information at the Right Time



Faster incident analysis by automatic grouping of related alarms.

Incident view of alarms grouped by **alarm category** and **time of occurrence**.

Alarm incident / summary views customizable.

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Smart Alarm Clustering (Terms/Concepts)

More Information ←

→ More Data

Incidents

- Grouping of multiple alarm instances over time.
- 1 to N sources and 1 to N alarms instances
- Minimizes noise and speeds up event analysis
- Starting point for “Incident Timeline Analysis”

Alarms

- **Alarm definition** defines properties and source
- Alarm occurrences are instances of a definition, includes timestamp
- **New instance** increments number of occurrences, no new entry in alarm viewer
- History vs Status views
- Priority: e.g. Low, medium, high

Events

- Single “event” in time from a single source
- Raw details as they come from devices and software
- Priority 0 to 255

The screenshot displays a user interface for smart alarm clustering. On the left, a vertical timeline shows three incident entries: 'Unlabeled PQ' (23.3 hr ago), 'Unlabeled PQ' (4.1 days ago), and 'Unlabeled PQ' (4.1 days ago). The main area shows two incident details:

- Incident 1:** **Sag** (2 Alarms – 1 Sag (Voltage), 1 Swell (Voltage)) ↑. 2 Devices: PHI.MDP_480, PHI.MDP_208. Occurred on 1/14/2018 at 2:00:48.547 PM. Duration: 85 s.
- Incident 2:** **Under Voltage** (13 Alarms – 7 Sag (Voltage), 1 Transient, 2 Swell (Voltage), 3 Under Voltage) ↑. 8 Devices: PQ.Main, PQ.B2, PQ.B1, Victoria_Keating.main_7650, PHI.MDP_480, Victoria_Keating.PNL_K, Victoria_Keating.Main_PM800, PHI.MDP_208. Occurred on 1/14/2018 at 1:48:44.777 PM. Duration: 5.2 min.

Each incident entry includes a status icon (blue dot for active, red dot for cleared), a 'Details' button, and a 'Pick up' button.

New HTML5 waveform viewer

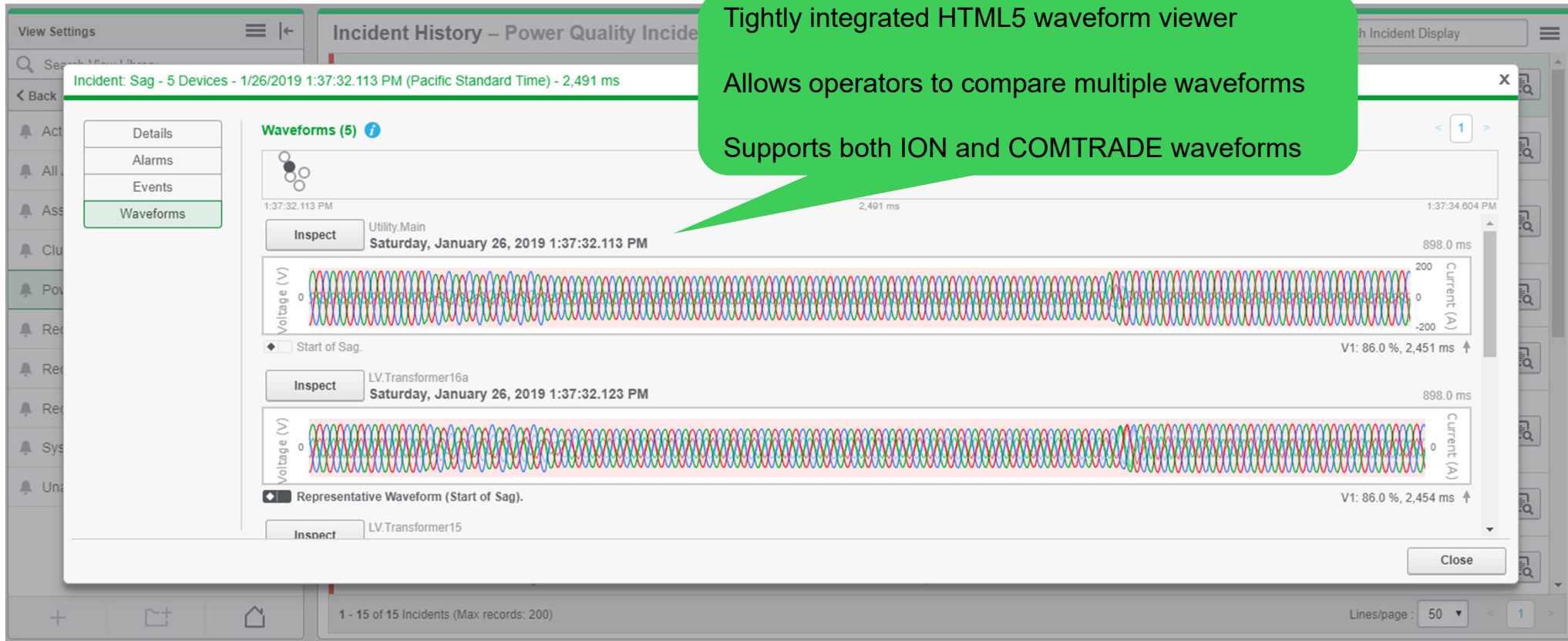
Simplified waveform experience



Tightly integrated HTML5 waveform viewer

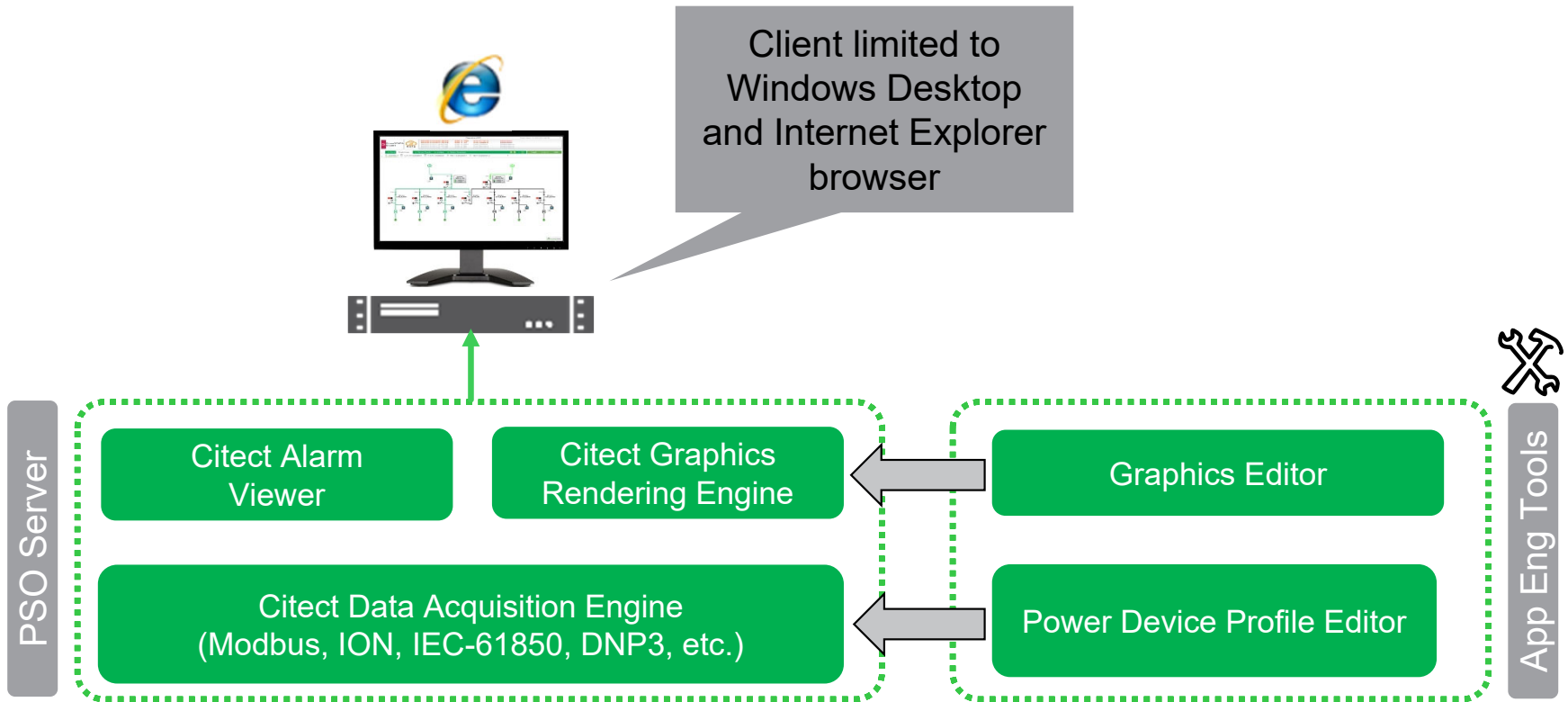
Allows operators to compare multiple waveforms

Supports both ION and COMTRADE waveforms



PSO 9.0 Architecture

Before



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PSO 2020 Architecture

“Under the Hood”

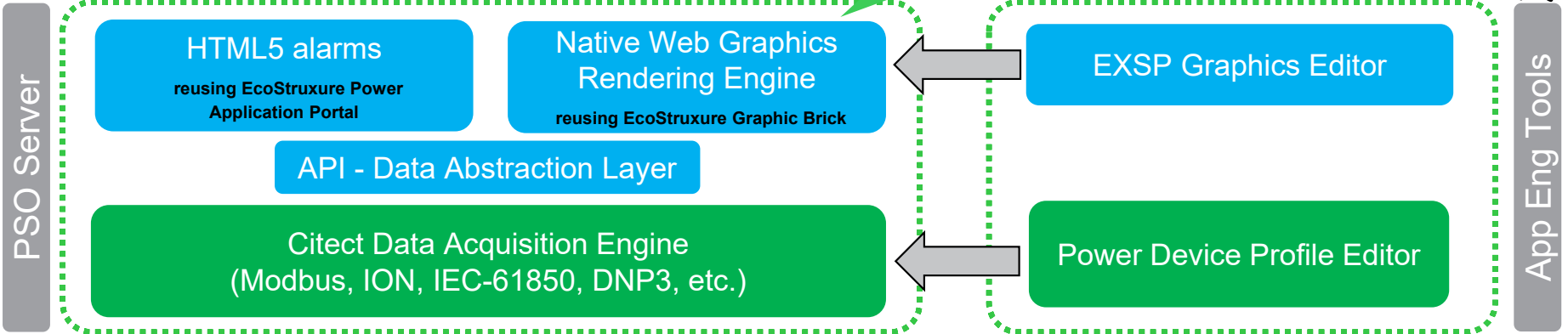


Communication via
HTTP w/ TLS 1.2

Legend

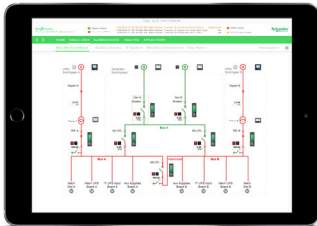
- Existing PSO component
- New PSO 2020 component

Reuse of Graphics Brick which is also used by EcoStruxure Building Operation (EBO).
Proven solution as brick has been used by 1,000's of Schneider Electric EBO customers.

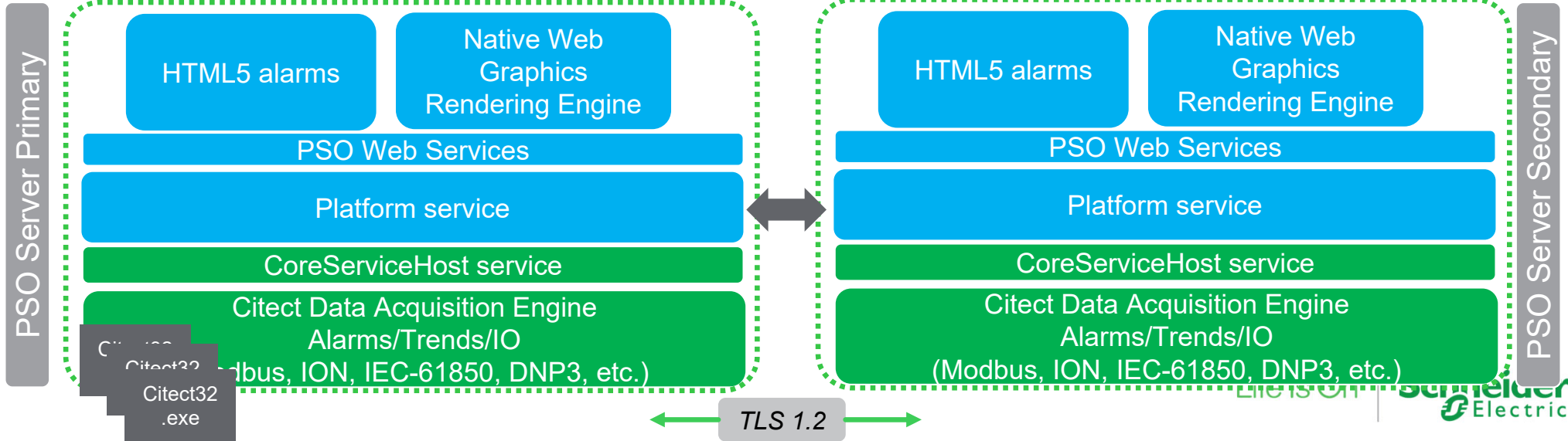


PSO 2020 Architecture

“Deep Dive”



Communication via
HTTP w/ TLS 1.2



Platform Service:

- Adv One line logic engine
- Alarming logic, reconstructed from events
- Incident logic, reconstructed from alarms/events
- Service registration to remote web services
- Abstracts “platforms” so the CoreServiceHost is connected via abstract plugins pattern representing the “Citect Platform” – other DAQ platforms could be implemented using same interfaces

PSO Web Services:

- PME shared web framework libraries
- Web API controllers
- GRPC is used to communicate downward to Platform service
- Server redundancy managed here by communicating with remote Platform services

Legend

New PSO 2020 component

HTML5 Alarms/Graphics:

- PSO implementation of PME shared web framework and “neutral” web apps
- PSO reuse of Typescript TGML Graphics Viewer implementation

PSO 2020 Cumulative Update #1

Web control functionality and trending coming soon



PSO 2020

available February 7, 2020

Control and Trend capabilities will be available in Windows **thick client only**.

Control and Trend capabilities will NOT be available in HTML5 web client.

PSO 2020 CU#1

available March 31, 2020

Control and Trend capabilities will be **added to HTML5 web client**.

PSO 2020 CU#1 will be a free upgrade for PSO 2020 customers.

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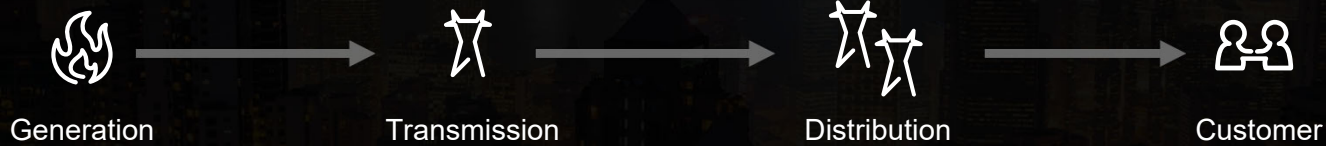
A nighttime photograph of a cityscape with a river in the foreground. The sky is dark and filled with several bright, jagged lightning bolts striking down. The city lights are visible in the background, including a prominent white tower on the left and various buildings on the right. The river reflects the lights and the lightning. A solid green horizontal band is overlaid across the middle of the image, containing the text "Microgrid Ready" in white.

Microgrid Ready

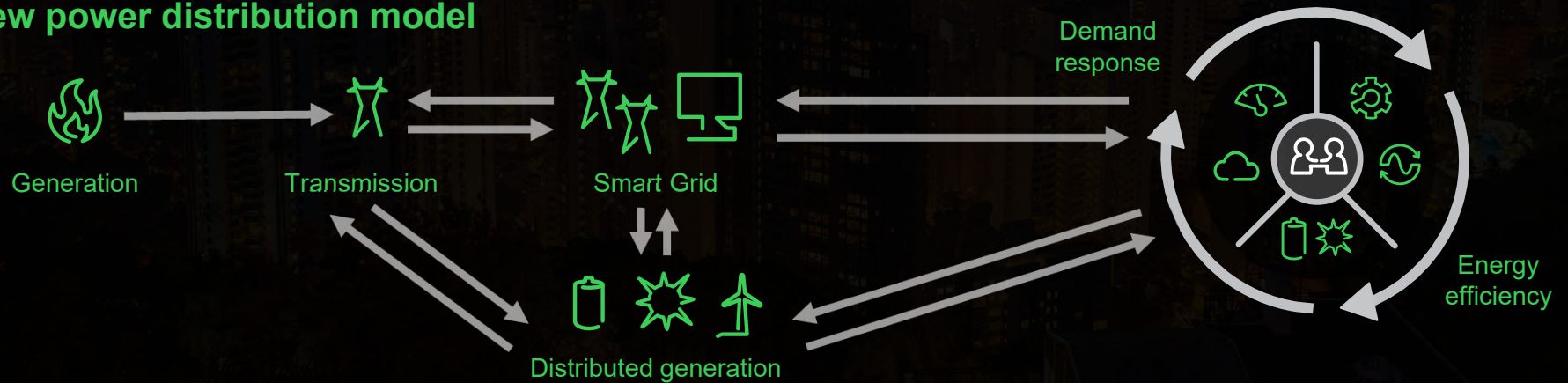
Era of Disruptive Transformations in Power Distribution

Distributed Generation

Traditional power distribution model



New power distribution model

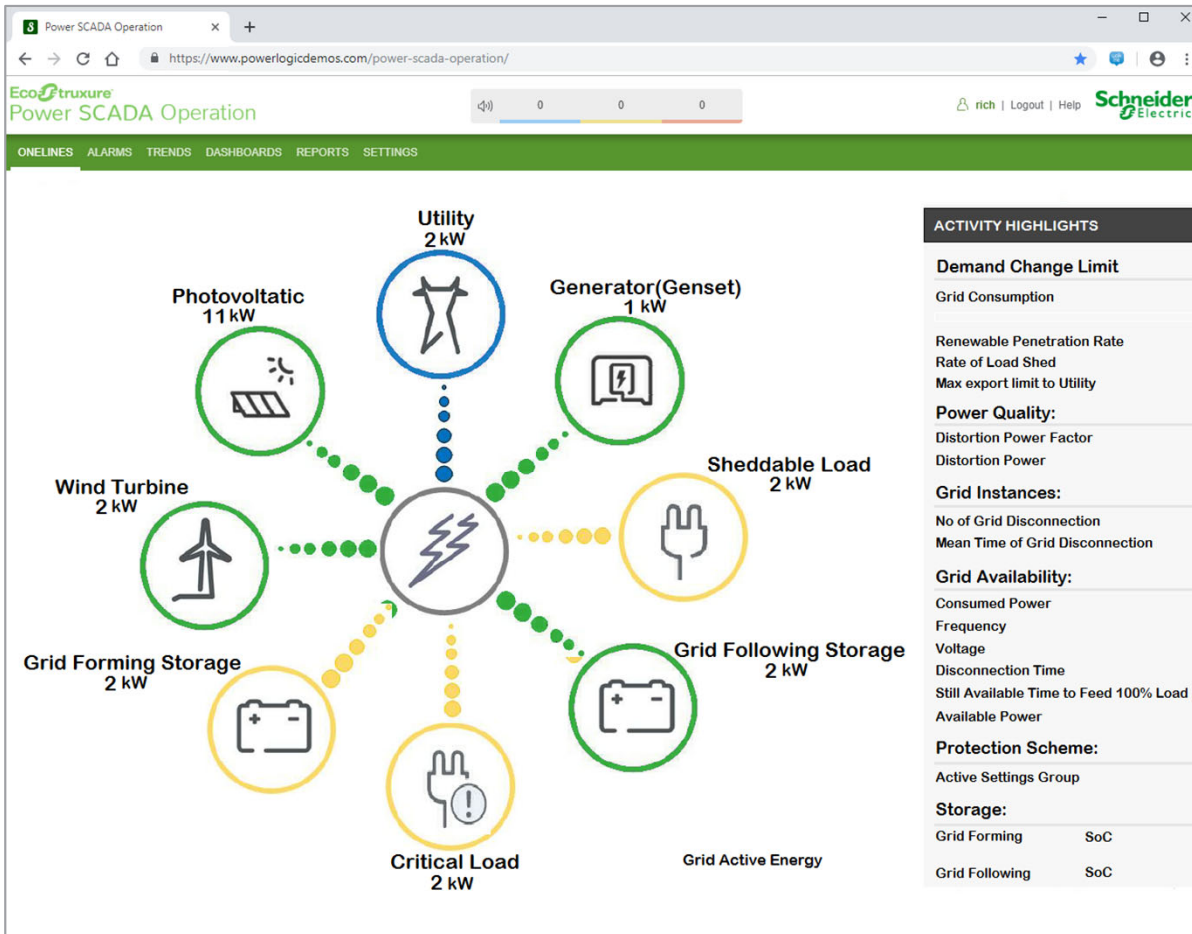


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Multi-source support

Animated one-line to visualize multi-source electrical system status



Quickly understand the state of your power system even when multiple energy sources are leveraged simultaneously.

For example, Utility + PV = Color X

New graphics and templates aligning with EcoStruxure Microgrid Operation solution.

Available in next-generation PSO Web Client only.

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Cybersecurity Ready
Maintain optimal security

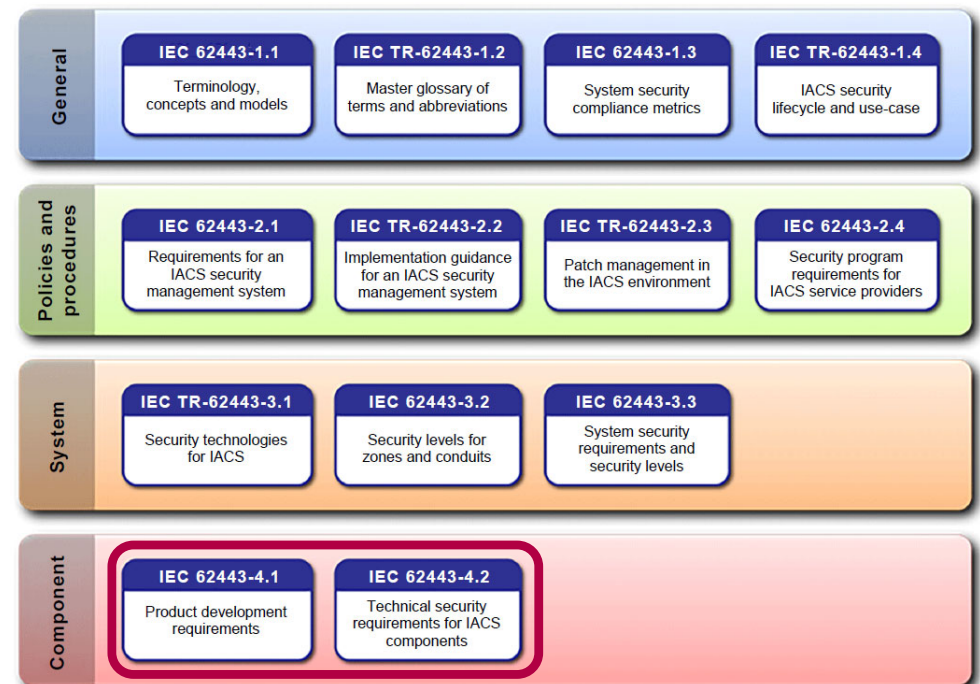
Cybersecurity for the OT - IEC 62443

IEC 62443 - international cybersecurity Operational Technology (OT) standard with various levels of robustness against Cyber threats



Today PSO is **SL1 certified to comply with IEC 62443** standard at the component level:

- **IEC 62443-4.1**: Assess a supplier's product development lifecycle for industrial automation and control systems (IACS)
- **IEC 62443-4.2**: Defines the security requirements for components of an IACS



IEC

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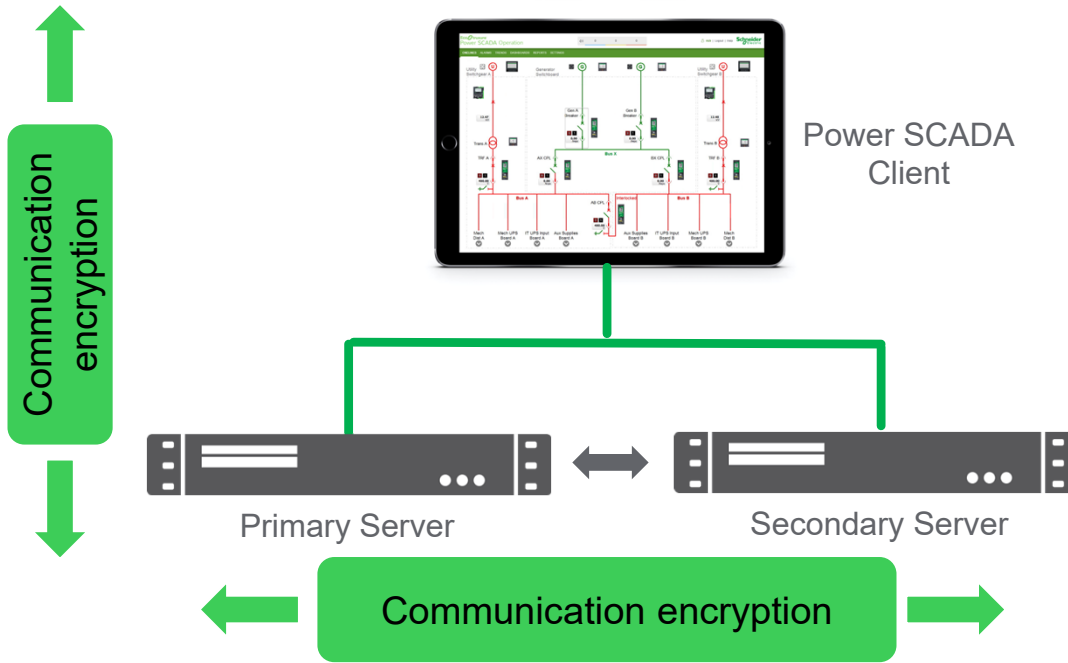
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PSO 2020 – End to end secure communication

Moving towards 62443 4-2 SL2 certification with additional encryption options



Power SCADA Client



Ability to **encrypt** communication **between PSO components** via latest Transport Layer Security (TLS) version.

- Encrypt communication between
- Server(s) and client(s)
 - Server to server

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Cybersecurity for the OT - IEC 62443

IEC 62443 has 4 security levels (SL's)

Level	Target	Skills	Motivation	Means	Resources
4	Nation State	ICS Specific	High	Sophisticated (Campaign)	Extended (Multidisciplinary Teams)
3	Hactivist, Terrorist	ICS Specific	Moderate	Sophisticated (Attack)	Moderate (Hacker Group)
2	Cybercrime, Hacker	Generic	Low	Simple	Low (Isolated Individual)
1	Casual Violations	No Attack Skills	Mistakes	Non-Intentional	Individual

PSO 2020 - IEC-62443 Compliance SL2 (step 1)

Moving towards SL2 certification

Level	Target
4	Nation State
3	Hacktivist, Terrorist
2	Cybercrime, Hacker
1	Casual Violations



PSO 2020 cyber-sec hardening to lay foundation for future **IEC-62443 SL2 certification**

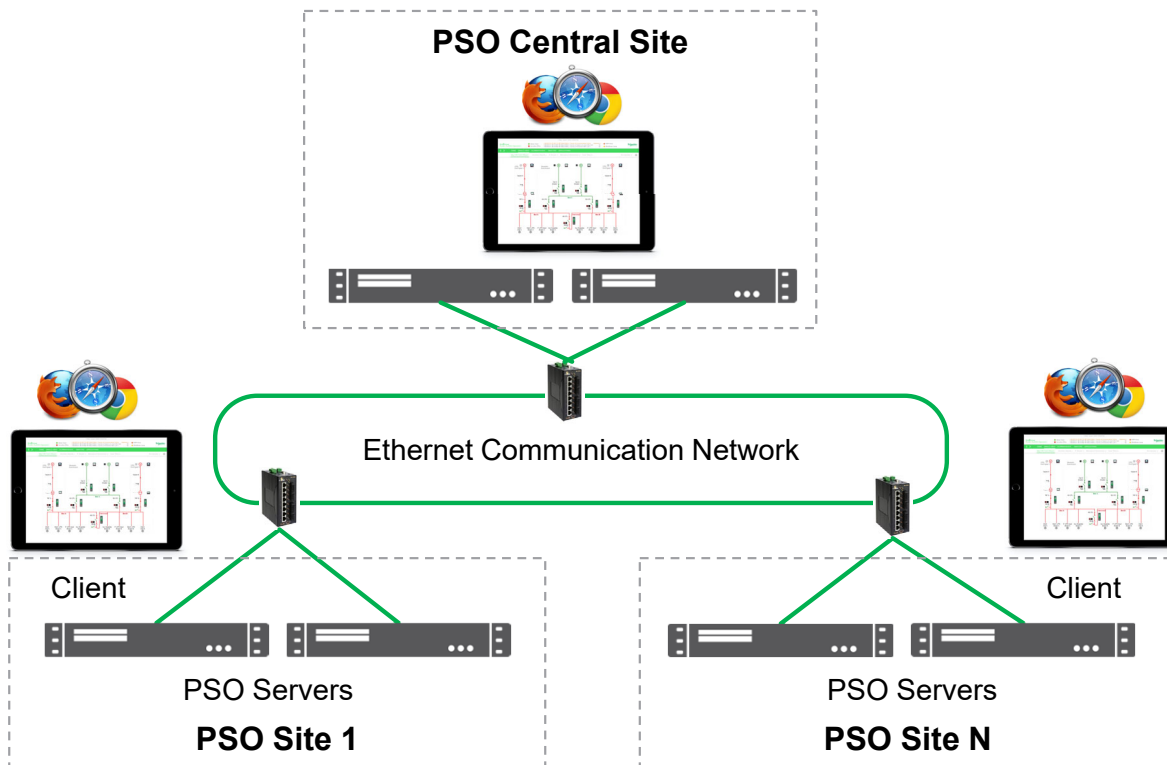


Simpler Multi-site Deployments



Multi-site architecture

Monitor multiple PSO systems from single client



Monitor and control multiple independent systems from single runtime client for geographically co-located customers

Validated and Documented multi-site architectures from Small to Large sizes

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World Ready
Translatable Software

PSO available in multiple languages

Enabling non-English speakers in 40+ countries where PSO has been sold



Runtime, **key design tools** and **documentation** fully translatable

Ability to run PSO clients and engineering tools on **non-English OS's**

End user run-time & key design-time available in **English** and **French**

Other languages now possible...

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A man wearing glasses and a plaid shirt is standing in a server room, looking at a device he is holding. The room is filled with server racks, some of which have red and blue lights. A green horizontal bar is overlaid across the middle of the image, containing the text "Simpler configuration" in white.

Simpler configuration

Next Generation PSO Web Client

Easier graphics engineering in PSO 2020



Modern & efficient graphic editor

Quickly **toggle between** Design, Source and Preview **modes**.

Graphics stored in a object model based **XML format** allowing easy comparison when changes are made.

Easy to deploy graphic updates

No need to restart PSO services or **recompile projects** to 'go live' on graphics updates.

Once graphics and/or graphic menu system changes are saved to PSO server, operators simply **refresh browser** to see changes.

Less graphics to create

No need to create graphics for different screen resolutions.

Resulting in **streamlined graphics libraries** as having same images in different resolutions no longer required.

Drag & Drop / Point & Click experience

Easier binding of graphics to data with automatic association via **drag and drop workflow**.

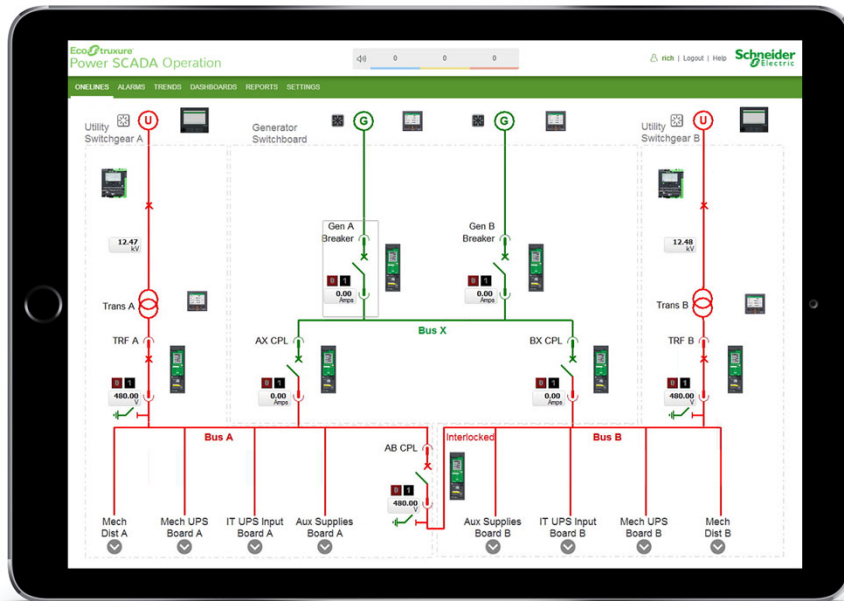
1-line creation largely achieved via **point and click workflow**. Having to remember bus numbers will become a 'thing of the past'.

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Next Generation PSO Web Client

Simplified engineering experience for 1-line engine



Various engineering improvements with new **web version of 1-line engine** for application engineers

Simpler configuration with

- no need for special user name / password
- no need for special encryption keys

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Next Generation PSO Web Client

Ability to adjust various runtime settings from web client

A screenshot of the 'System Theme' settings page in the Next Generation PSO Web Client. The page is divided into two main sections: 'General Theme' and 'Navigation'.
General Theme:
- Two tabs: 'Default Theme' and 'User Defined' (selected).
- A toggle switch for 'Show Vendor logo' which is turned on.
- An 'Image' section with a 'Select...' button and an empty text input field.
- A 'Theme Color' section with a toggle for 'Enable high contrast mode' (turned off) and a row of color swatches. The selected color is green.
Navigation:
- Two tabs: 'Left' (selected) and 'Right'.
- A toggle switch for 'Always use compact mode for Navigation' which is turned off.
At the bottom right of the settings panel are 'Discard' and 'Save' buttons.
On the left side of the screenshot is a 'Settings Library' sidebar with a search bar and a list of categories: Alarms (1), Integrations (1), Personalization (3), and Security (2).
A green speech bubble points to the 'User Defined' tab with the text: 'Configuration at your "fingertips"'.
At the bottom right of the entire image are the 'Is On' logo and the 'Schneider Electric' logo.

Configuration at your "fingertips"

Is On

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Next Generation PSO Web Client

Simpler timeout period configuration



The screenshot shows the 'Session Timeout' configuration page. On the left is a 'Settings Library' sidebar with a search bar and a list of settings including 'Login Options' and 'Session Timeout'. The main content area is titled 'Session Timeout' and includes a 'Help' link. It contains a descriptive paragraph, a 'NOTE' about inactive sessions, a list of activities that reset the timeout (Mouse movement, Mouse click, Keyboard activity, Touch screen activity), and a 'Web Applications' section with a toggle switch and a 'Timeout Period (minutes)' dropdown menu set to 20. A green callout bubble points to the dropdown menu with the text 'Configure timeout period from web settings'. At the bottom right are 'Discard' and 'Save' buttons.

Session Timeout Help

Set a session timeout to automatically disconnect inactive client sessions. Web application clients will be logged out after a period of inactivity. To restart or unlock the session you must enter the login credentials.

NOTE: A session is considered inactive when none of the following actions are detected for the duration of the timeout period:

- Mouse movement
- Mouse click
- Keyboard activity
- Touch screen activity

Web Applications

Set session timeout for Web applications

Timeout Period (minutes)

20

Web applications are automatically logged out after 20 minutes of inactivity.

[Discard](#) [Save](#)

Do you remember...

How PSO 9.0 created single location for essential documentation

Comprehensive consolidation and simplification of previously siloed technical documents.

- Improved search and elimination of information gaps
- Easier to navigate and find information when you need it
- Just-in-time procedures to reduce task completion time
- Easier to find related and supporting information without having to obtain related documents
- **Single Document: PSO System Guide**

PSO documentation before 9.0

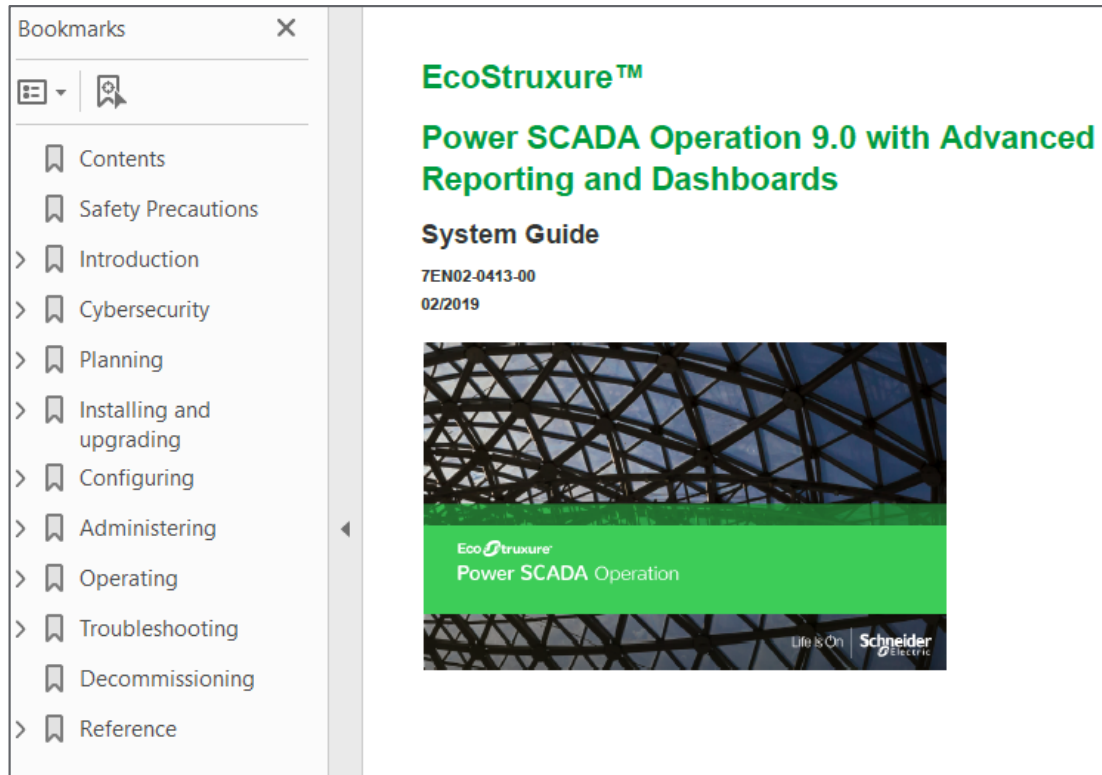


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PSO 2020 System Guide

Now including graphics documentation and new runtime information



PSO 2020 System Guide will embed / include graphics editor how-to information

New runtime features such as simplified power event analysis via new alarm interface also included

The best EPMS documentation in the market is about to get even better!

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A person is holding a tablet that displays the Ecostruxure logo and a photograph of a modern building at night. The logo consists of the word "Ecostruxure" in green, with a stylized green 'E' that incorporates a leaf-like shape. Below the logo, the tagline "Innovation At Every Level" is written in a smaller font. The background of the tablet shows a tall building with many lit windows against a dark sky. The person holding the tablet is wearing a watch on their left wrist. In the background, a laptop is open on a wooden desk, and another person's hand is visible near the laptop keyboard.

Ecostruxure™
Innovation At Every Level

And Even More Connected Devices!

Even more native Modbus drivers

Connecting to our other 'Hero Offers'



- Easergy P3*
- ASCO 7000 / 4000
- MasterPact MTZ v3.0
- Vigilohm IFL 12 series
- T300**

MasterPact™ MTZ
FUTURE READY

* P3 driver available in
PSO 2020 cumulative
update at end of Q1
2020

** T300 driver support
for DNP3 and 104
protocols only



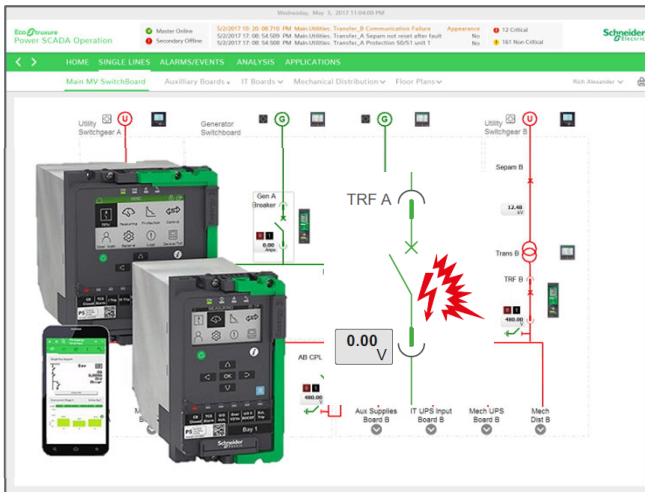
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Active Arc Flash Protection

Active Arc Flash
available March 2020

Help Protect Staff and Occupants and Minimize Equipment Risk



According to the National Fire Protection Association...
5 to 10 Arc Flash incidents occur every day in the USA

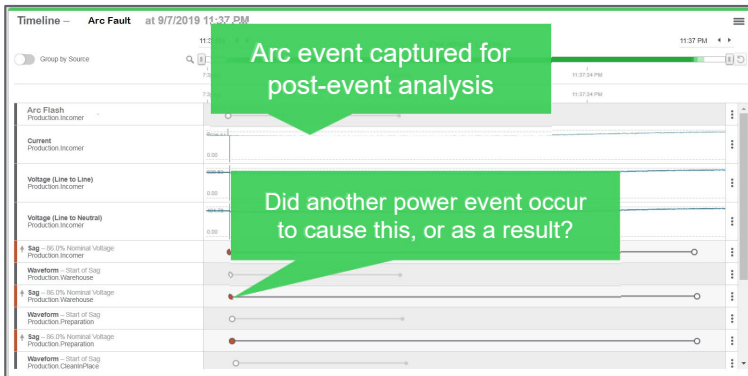
Minimize the **costs resulting from arc flash damages:**
downtime, repair time, interruption of processes & equipment

Improve safety during maintenance activities

Improve arc flash awareness for maintenance teams: **remote monitoring, alarming and notification**

Get **real-time visibility** for fast response following arc flash events

Provide **post arc flash event analysis**



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PSO 2020 – What's New Summary

Modern Graphics

Runtime graphics including animated 1-lines viewable via HTML5 compliant web browser (eg: Chrome, Firefox, Safari)

Pan/zoom graphics support

Microgrid ready: Multi-source 1-line support (eg: *Utility + PV = unique color*)

Microgrid ready graphics

Smart Alarms

HTML5 alarm interface

Smart alarm clustering, rollups & classification

Incident timeline analysis

New waveform viewer

Cybersecurity ready

Certified IEC-62443 SL1

TLS 1.2 encryption for both web clients and for server-to-server communication

Reminders from past releases:
Role based access control via Windows Active Directory
2-factor authentication supported
White-list validated solution
User event logging
Developed with SDL practices

Simpler Deployments

Simplified 1-line graphics tooling

Documentation updates with additional depth covering multi-cluster (ie: multi-cluster) and graphics creation.

World ready software

Runtime, key design time tools and documentation translatable

English and French available at time of release

Active Arc Flash Protection

Support for Easergy P3 Advanced time-stamped events and alarms based on Arc Flash event (*end of March 2020*)

Additional device support

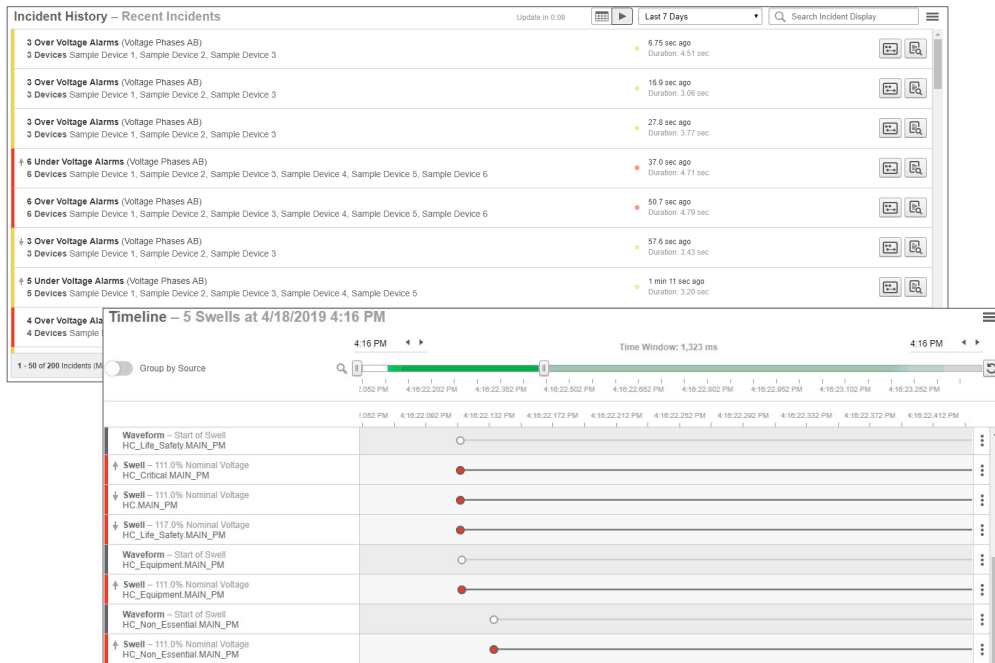
Additional Modbus drivers for:

- Easergy P3 (*March 2020*)
- ASCO 7000
- MTZ v3.0
- IFL
- T300

OS and IT

Windows Server 2019 support

Multi-browser support for graphics and alarms



Appendix: PSO Smart Alarms High level technical details

PSO 2020 Alarms Deep Dive

- 1 Why new alarms for PSO 2020**
- 2 Smart Alarm Concepts & Usage**
- 3 Waveforms**
- 4 Filters and Views**
- 5 Acknowledgements**
- 6 Managing permissions & settings**
- 7 Alarm annunciator**

PSO 2020 alarms

Why new alarms for PSO?



#1 – Mobile Operator Access

PSO operators need to access their system...
Anywhere, Anytime & with Any Browser
without use of browser plugins or 3rd party
streaming software

#2 – Easier power events analysis

Faster analysis by **automatic grouping of related alarms** (ie: alarm incidents) and
richer visualization experience (ie: timeline
analysis)

#3 – Configured to Order

Allow **end users** to easily **configure** views,
colors, alarm annunciator, etc. **via runtime
interface**

#4 – EcoStruxure Consistency

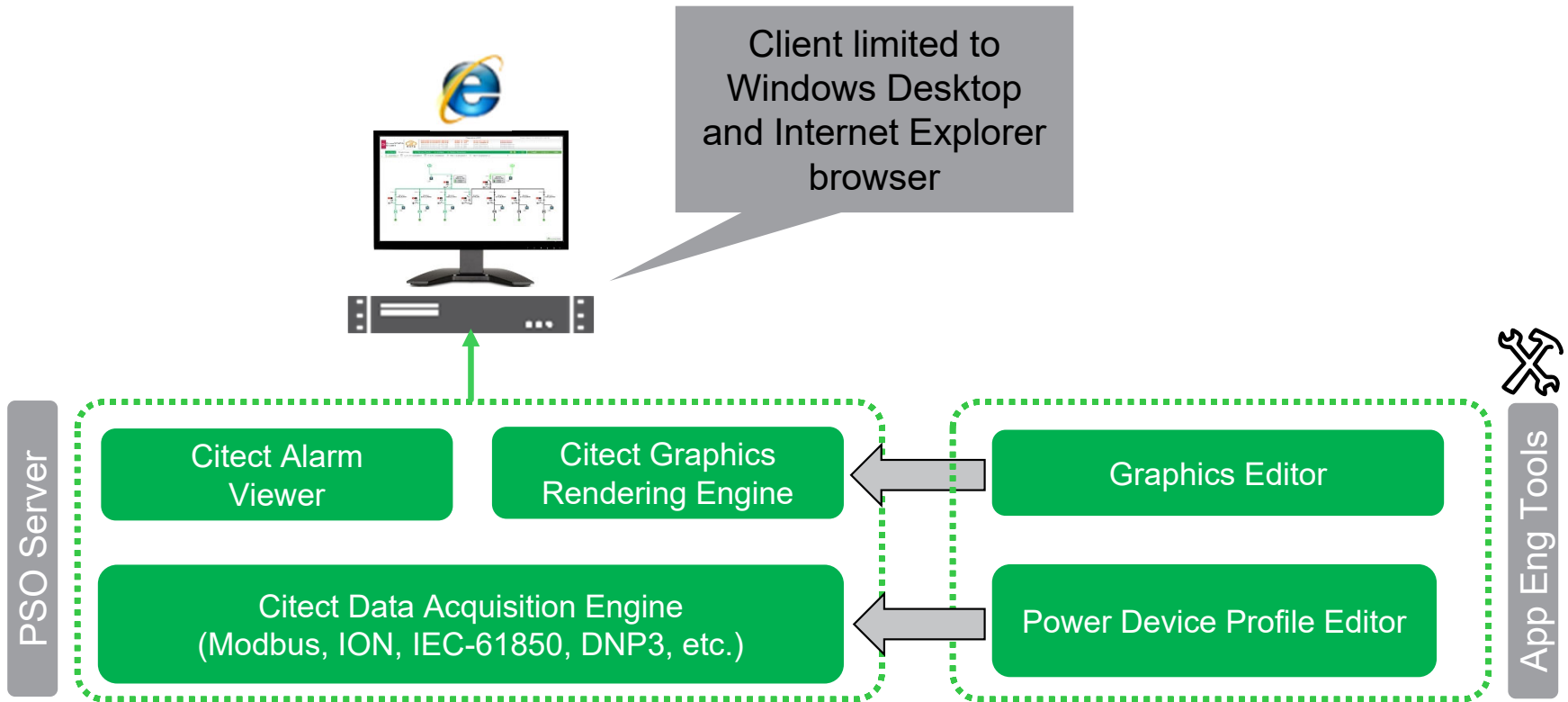
Our customers want a **consistent runtime
experience** as they move between our Edge
Control offers (ie: PSO, PME) while taking
advantage of high performance PSO DAQ

Life Is On

Schneider
Electric

PSO 9.0 Architecture

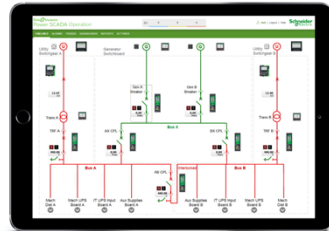
Before



Life Is On

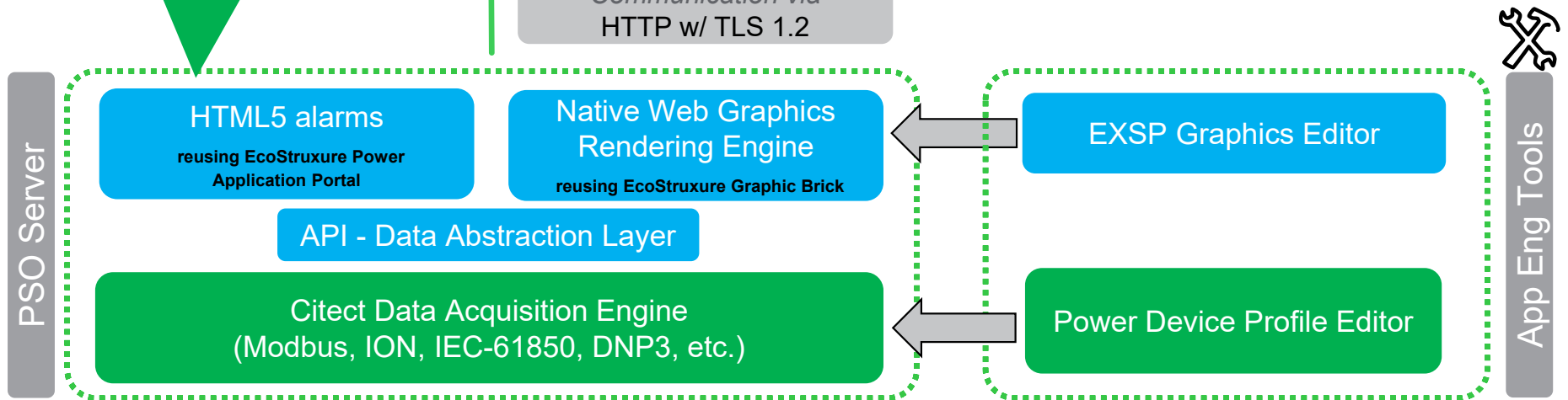
PSO 2020 Architecture

“Under the Hood”



Reuse of PME 9.0 alarm interface user experience

Communication via HTTP w/ TLS 1.2



Legend

- Existing PSO component (blue box)
- New PSO 2020 component (green box)

PSO 2020 Alarms Deep Dive

- 1 Why new alarms for PSO 2020
- 2 **Smart Alarm Concepts & Usage**
- 3 Waveforms
- 4 Filters and Views
- 5 Acknowledgements
- 6 Managing permissions & settings
- 7 Alarm annunciator

Smart Alarm Clustering (Terms/Concepts)

More Information ←

→ More Data

Incidents

- Grouping of multiple alarm instances over time.
- 1 to N sources and 1 to N alarms instances
- Minimizes noise and speeds up event analysis
- Starting point for “Incident Timeline Analysis”

Alarms

- **Alarm definition** defines properties and source
- Alarm occurrences are instances of a definition, includes timestamp
- **New instance** increments number of occurrences, no new entry in alarm viewer
- History vs Status views
- Priority: e.g. Low, medium, high

Events

- Single “event” in time from a single source
- Raw details as they come from devices and software
- Priority 0 to 255

The screenshot displays a user interface for smart alarm clustering. On the left, a vertical timeline shows three incident entries: 'Unlabeled PQ' (23.3 hr ago), 'Unlabeled PQ' (4.1 days ago), and 'Unlabeled PQ' (4.1 days ago). The main area shows a detailed view of a 'Sag' incident. The incident title is 'Sag (2 Alarms – 1 Sag (Voltage), 1 Swell (Voltage)) ↑' with 2 devices: PHI.MDP_480 and PHI.MDP_208. It occurred on 1/14/2018 at 2:00:48.547 PM with a duration of 85 s. Below this, another incident is shown: 'Under Voltage (13 Alarms – 7 Sag (Voltage), 1 Transient, 2 Swell (Voltage), 3 Under Voltage) ↑' with 8 devices: PQ.Main, PQ.B2, PQ.B1, Victoria_Keating.main_7650, PHI.MDP_480, Victoria_Keating.PNL_K, Victoria_Keating.Main_PM800, and PHI.MDP_208. It occurred on 1/14/2018 at 1:48:44.777 PM with a duration of 5.2 min. On the right side, there are 'Details' buttons for each incident entry.

Smart Alarms – General Navigation

New alarm viewer

The screenshot displays the 'View Library' sidebar on the left and the main 'Incidents' view on the right. The sidebar lists various views such as 'Active Alarms', 'All Alarms', 'Asset Monitoring Incidents', 'Clutter', 'Power Quality Incidents', 'Recent Alarms', 'Recent Events', 'Recent Incidents', 'System Health', and 'Unacknowledged Alarms'. The main view shows a list of incidents with columns for priority level (indicated by colored dots), alarm type, device names, and duration. Callouts provide detailed information about the interface's navigation and configuration options.

Navigation and configuration using NEW shared library control with predefined and end user created views

Toggle between live or inspection mode

Search, edit view, open view in new window, show/hide columns, export alarm details to CSV.

“Card view” displays key high level information for the alarm/incident

See priority level (Low, Medium, High) by color

Each view accessible with unique URL to embed alarm views in other applications

View Library: Search View Library...
System Views: Active Alarms, All Alarms, Asset Monitoring Incidents, Clutter, Power Quality Incidents, Recent Alarms, Recent Events, Recent Incidents, System Health, Unacknowledged Alarms.

Incidents: Update in 0:07, Last 7 Days, Search Incident Display.

Incident 1: 5 Under Voltage Alarms (Voltage Phases AB), 5 Devices Sample Device 1, Sample Device 2, Sample Device 3, Sample Device 4, Sample Device 5, 17.7 sec ago.

Incident 2: 4 Over Voltage Alarms (Voltage Phases AB), 4 Devices Sample Device 1, Sample Device 2, Sample Device 3, Sample Device 4, 35.2 sec ago, Duration: 4.74 sec.

Incident 3: 5 Under Voltage Alarms (Voltage Phases AB), 5 Devices Sample Device 1, Sample Device 2, Sample Device 3, Sample Device 4, Sample Device 5, 45.8 sec ago, Duration: 5.37 sec.

Incident 4: 2 Over Voltage Alarms (Voltage Phases AB), 2 Devices Sample Device 1, Sample Device 2, 1 min 21 sec ago, Duration: 3.92 sec.

Incident 5: 3 Over Voltage Alarms (Voltage Phases AB), 3 Devices Sample Device 1, Sample Device 2, Sample Device 3, 1 min 25 sec ago, Duration: 3.47 sec.

Incident 6: 3 Under Voltage Alarms (Voltage Phases AB), 3 Devices Sample Device 1, Sample Device 2, Sample Device 3, 1 min 37 sec ago, Duration: 3.50 sec.

Incident 7: 4 Over Voltage Alarms (Voltage Phases AB), 4 Devices Sample Device 1, Sample Device 2, Sample Device 3, Sample Device 4, 1 min 46 sec ago, Duration: 4.34 sec.

Incident 8: 3 Under Voltage Alarms (Voltage Phases AB), 3 Devices Sample Device 1, Sample Device 2, Sample Device 3, 2 min 5 sec ago, Duration: 4.38 sec.

Incident 9: 3 Over Voltage Alarms (Voltage Phases AB), 3 Devices Sample Device 1, Sample Device 2, Sample Device 3, 2 min 9 sec ago, Duration: 3.38 sec.

1 - 50 of 200 Incidents (Max records: 200) Lines/page: 50

Smart Alarm Clustering

More Information ←

→ More Data

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- History vs Status views
- Priority: e.g. Low, medium, high

Events

- Single “event” in time from a single source
- Raw details as they come from devices and software
- Priority 0 to 255

Smart Alarms - Events

Events View

The screenshot displays the 'Event History - Recent Events' view. On the left is a sidebar with a 'View Library' header and a search bar. Below it are system views and a list of alarm categories: Active Alarms, All Alarms, Asset Monitoring Incidents, Clutter, Power Quality Incidents, Recent Alarms, Recent Events (highlighted), Recent Incidents, System Health, and Unacknowledged Alarms. The main area shows a table of recent events with columns for Source, Timestamp, Event, Condition, Measurement, Type, and Time Quality. A search bar and a 'Last 7 Days' filter are at the top right of the table. A status bar at the bottom indicates '1 - 100 of 544 Events (Max records: 2000)' and a 'Lines/page: 100' dropdown with a pagination control.

Source	Timestamp	Event	Condition	Measurement	Type	Time Quality
PLSDCluster High_Voltage.Transfers.TRF_To_A	10/23/2019 3:43:54.731 PM	Protection 50/51 unit 1	On	S33K_A_TRFA51_PTOC1VOpldchg - Alarm raised	Pick up	Invalid Time Quality
PLSDCluster High_Voltage.Transfers.TRF_To_A	10/23/2019 3:43:54.731 PM	Protection 50/51 unit 1	Off	S33K_A_TRFA51_PTOC1VOpldchg - Alarm cleared	Drop out	Invalid Time Quality
PLSDCluster High_Voltage.Transfers.TRF_To_A	10/23/2019 3:43:46.356 PM	Protection 50/51 unit 1	On	S33K_A_TRFA51_PTOC1VOpldchg - Alarm raised	Pick up	Invalid Time Quality
PLSDCluster High_Voltage.Transfers.TRF_To_A	10/23/2019 3:43:46.156 PM	Protection 50/51 unit 1	Off	S33K_A_TRFA51_PTOC1VOpldchg - Alarm cleared	Drop out	Invalid Time Quality
PLSDCluster High_Voltage.Transfers.TRF_To_A	10/23/2019 3:43:44.853 PM	Protection 50/51 unit 1	On	S33K_A_TRFA51_PTOC1VOpldchg - Alarm raised	Pick up	Invalid Time Quality
PLSDCluster High_Voltage.Transfers.TRF_To_A	10/23/2019 3:43:32.866 PM	Protection 50/51 unit 1	Off	S33K_A_TRFA51_PTOC1VOpldchg - Alarm cleared	Drop out	Invalid Time Quality
PLSDCluster High_Voltage.Transfers.TRF_To_A	10/23/2019 3:43:28.822 PM	Protection 50/51 unit 1	On	S33K_A_TRFA51_PTOC1VOpldchg - Alarm raised	Pick up	Invalid Time Quality
PLSDCluster High_Voltage.Transfers.TRF_To_A	10/23/2019 3:43:26.902 PM	Protection 50/51 unit 1	Off	S33K_A_TRFA51_PTOC1VOpldchg - Alarm cleared	Drop out	Invalid Time Quality
PLSDCluster High_Voltage.Transfers.TRF_To_A	10/23/2019 3:43:25.911 PM	Breaker Closed	Off	S33K_A_TRFXCBR1IPosZCBOPndchg - Alarm raised	Drop out	Invalid Time Quality
PLSDCluster High_Voltage.Transfers.TRF_To_A	10/23/2019 3:43:25.910 PM	Breaker Open	On	S33K_A_TRFXCBR1IPosZCBOPndchg - Alarm raised	Pick up	Invalid Time Quality
PLSDCluster High_Voltage.Transfers.TRF_To_A	10/23/2019 3:43:25.905 PM	Device not reset after fault	On	S33K_A_TRFLLN0ILEDRSldchg - Alarm raised	Pick up	Invalid Time Quality
PLSDCluster High_Voltage.Transfers.TRF_To_A	10/23/2019 3:43:25.903 PM	Protection 50/51 unit 1	On	S33K_A_TRFA51_PTOC1VOpldchg - Alarm raised	Pick up	Invalid Time Quality

View source, timestamp, condition, measurement (tag), type, time stamp quality, priority (0-255)

Quickly sort by field

Search, edit view, open view in new window, show/hide columns, export alarm details to CSV.

Ability to open event's associated incident, alarm instance, alarm definition, acknowledge alarm and view timeline with associated waveform if captured by device

1 - 100 of 544 Events (Max records: 2000) Lines/page: 100 < 1 2 3 4 5 6 >

Smart Alarm Clustering

More Information ←

→ More Data

Incidents

- Grouping of multiple alarm instances over time.
- 1 to N sources and 1 to N alarms instances
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- Starting point for “Incident Timeline Analysis”

Alarms

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- History vs Status views
- Priority: e.g. Low, medium, high

Events

- Single “event” in time from a single source
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- Priority 0 to 255

Smart Alarms - Alarms

2 Views possible: **Alarm History View** to view by **individual** alarm occurrence

The screenshot displays the 'Alarm History - Recent Alarms' interface. On the left is a 'View Settings' sidebar with a search bar and a list of view categories: Active Alarms, All Alarms, Asset Monitoring Incidents, Clutter, Power Quality Incidents, Recent Alarms (highlighted), Recent Events, Recent Incidents, System Health, and Unacknowledged Alarms. The main panel shows a list of alarms with columns for source, state, and duration. A search bar at the top right allows for 'Search Alarm Display'. Callouts highlight the following features:

- Search, edit view and export alarm details to CSV.** (Callout pointing to the search bar and document icons)
- See source of alarm instance, when alarm occurred, state (active/inactive), length of alarm duration** (Callout pointing to the first alarm entry)
- Ability to open alarm's associated events, alarm definition, acknowledge alarm and view timeline with associated waveform(s) if captured by device** (Callout pointing to the document icon on the right of an alarm entry)

At the bottom, it shows '1 - 50 of 152 Alarms (Max records: 1000)' and a pagination control for 'Lines/page' set to 50.

Smart Alarms - Alarms

2 Views possible: **Alarm Status View** to view by **multiple** alarm occurrences

The screenshot shows the 'Alarm Status - Recent Alarms' interface. On the left is a 'View Settings' sidebar with options for View Name, Location, View Type, Priority, State, Sources, Categories, Power Quality, Asset Monitoring, and Diagnostics. The main area is a table of recent alarms with columns for State, Name, Type, Source, and Acknowledgement. A search bar is at the top right. Callouts highlight features like searching, acknowledging multiple instances, viewing occurrence counts, and opening alarm details.

State	Name	Type	Source	Acknowledgement		
5.18 sec ago	Over Voltage - Voltage Phases AB	Over Voltage	Sample Device 5	Acknowledge (134 occurrences)		
5.21 sec ago	Over Voltage - Voltage Phases AB	Over Voltage	Sample Device 3	Acknowledge (269 occurrences)		
5.33 sec ago	Over Voltage - Voltage Phases AB	Over Voltage	Sample Device 2	Acknowledge (337 occurrences)	10/27/2019 3:30:37.724 PM	337
5.33 sec ago	Over Voltage - Voltage Phases AB	Over Voltage	Sample Device 4	Acknowledge (200 occurrences)	10/27/2019 3:30:37.717 PM	200
5.4 sec ago	Over Voltage - Voltage Phases AB	Over Voltage	Sample Device 1	Acknowledge (146 occurrences)	10/27/2019 3:30:37.717 PM	146
27.1 sec ago	Under Voltage - Voltage Phases AB	Under Voltage	Sample Device 1	Acknowledge (424 occurrences)	10/27/2019 3:30:15.647 PM	424
27.1 sec ago	Under Voltage - Voltage Phases AB	Under Voltage	Sample Device 1	Acknowledge (211 occurrences)	10/27/2019 3:29:30.542 PM	211
27.4 sec ago	Under Voltage - Voltage Phases AB	Under Voltage	Sample Device 1	Acknowledge (146 occurrences)	10/27/2019 3:28:50.996 PM	146
1 min 12 sec ago	Under Voltage - Voltage Phases AB	Under Voltage	Sample Device 1	Acknowledge (64 occurrences)	10/27/2019 3:27:06.537 PM	64
1 min 52 sec ago	Under Voltage - Voltage Phases AB	Under Voltage	Sample Device 1	Acknowledge (82 occurrences)	10/27/2019 3:25:11.224 PM	82
3 min 36 sec ago	Under Voltage - Voltage Phases AB	Under Voltage	Sample Device 1	Acknowledge (82 occurrences)	10/27/2019 3:25:11.224 PM	82
5 min 31 sec ago	Under Voltage - Voltage Phases AB	Under Voltage	Sample Device 6	Acknowledge (82 occurrences)	10/27/2019 3:25:11.224 PM	82

1 - 13 of 13 Alarms (Max records: 1000) Lines/page: 50 < 1 >

Search, export alarm details to CSV, show/hide columns, acknowledge all alarms, pause updates

See state, name of alarm, source, last occurrence, etc.

Acknowledge multiple alarm instances and view number of occurrences since last acknowledgement

View total number occurrences (instances) of alarm

Ability to open alarm definition details and view history of all instances of the alarm as well as acknowledgements.

Smart Alarm Clustering

More Information ←

→ More Data

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How Incident Grouping Works

Over Voltage example

Alarm types have a grouping interval and their start times determine which Alarms to group into an Incident.

Example Incident with alarm type of **Over Voltage** which has a **grouping interval** of **5 minutes**.

1. Start: New alarm comes in that is part of the Over Voltage type and marks start of an Incident
2. Active: Any alarm of Over Voltage type that starts within the grouping time interval is considered part of the same Incident.
 - *The grouping time interval is always based on the most recent Alarm in the Incident, which means that the counter is restarted every time a new Alarm is added to the Incident.*
3. Complete: When there are no more alarms of the same type that fall inside the grouping interval, the Incident is complete.

Life Is On

Schneider
Electric

Smart Alarms - Incidents

Incident View

Search, edit view, open in new window and export details to CSV.

The screenshot displays the 'Incident History - Recent Incidents' interface. On the left is a 'View Library' sidebar with categories like 'Active Alarms', 'All Alarms', 'Asset Monitoring Incidents', 'Clutter', 'Power Quality Incidents', 'Recent Alarms', 'Recent Events', 'Recent Incidents' (highlighted), 'System Health', and 'Unacknowledged Alarms'. The main area shows a list of incidents with columns for description, time, and duration. Callouts provide details on how to view sources, states, durations, and associated waveforms.

Incident Description	Time	Duration
5 Over Voltage Alarms (Voltage Phases AB) 5 Devices Sample Device 1, Sample Device 2, Sample Device 3, Sample Device 4, Sample Device 5	9.96 sec ago 5 Active	
Over Voltage Alarm (Voltage Phases AB) Sample Device 1	18.7 sec ago Duration: 3.72 sec	
6 Under Voltage Alarms (Voltage Phases AB) 6 Devices Sample Device 1, Sample Device 2, Sample Device 3, Sample Device 4, Sample Device 5	25.8 sec ago Duration: 4.85 sec	
3 Under Voltage Alarms (Voltage Phases AB) 3 Devices Sample Device 1, Sample Device 2, Sample Device 3	37.5 sec ago Duration: 3.41 sec	
Over Voltage Alarm (Voltage Phases AB) Sample Device 1	51.7 sec ago Duration: 4.29 sec	
5 Over Voltage Alarms (Voltage Phases AB) 5 Devices Sample Device 1, Sample Device 2, Sample Device 3, Sample Device 4, Sample Device 5	1 min 1 sec ago Duration: 4.60 sec	
4 Over Voltage Alarms (Voltage Phases AB) 4 Devices Sample Device 1, Sample Device 2, Sample Device 3, Sample Device 4		
Under Voltage Alarm (Voltage Phases AB) Sample Device 1		
Over Voltage Alarm (Voltage Phases AB) Sample Device 1		
Over Voltage Alarm (Voltage Phases AB) Sample Device 1	1 min 44 sec ago Duration: 4.72 sec	
2 Under Voltage Alarms (Voltage Phases AB)	1 min 55 sec ago	

1 - 50 of 171 Incidents (Max records: 200) Lines/page: 50 1 2 3 4

See source of alarm instance, when alarm occurred, state (active/inactive), length of alarm duration

Ability to open details to view associated alarms, events. Acknowledge incident and associated alarms. View timeline with associated waveform(s) if captured by device.

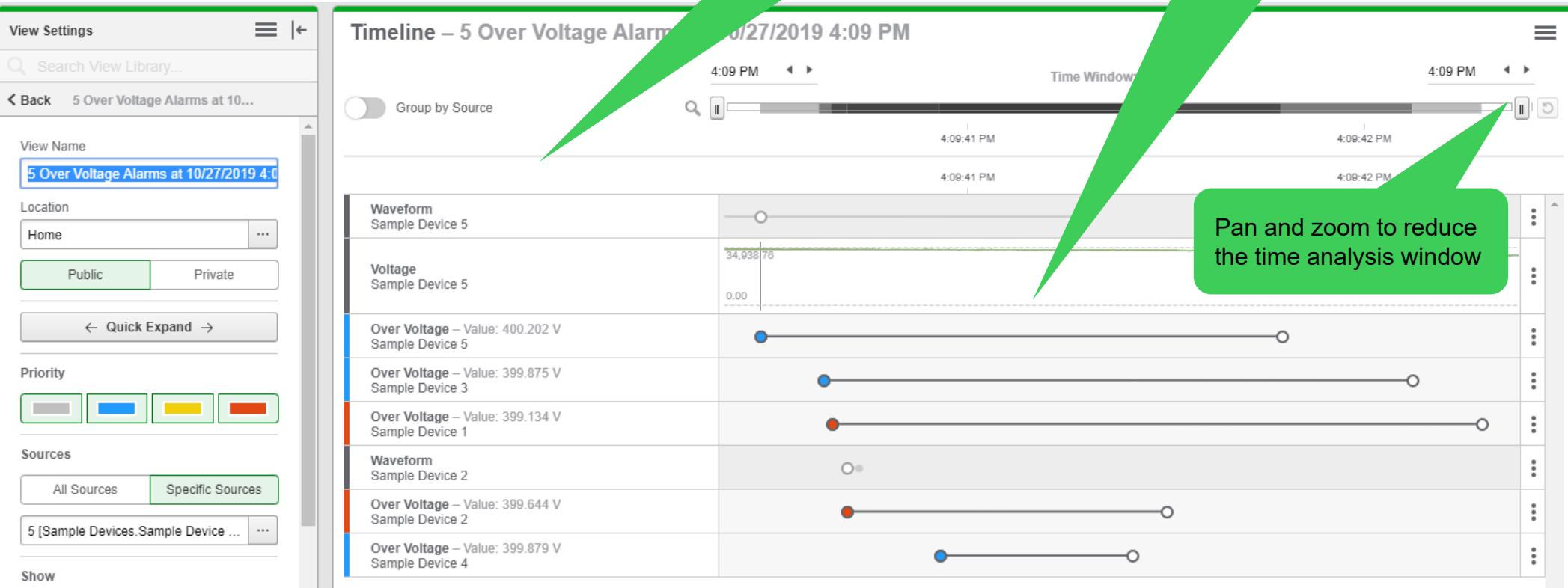
Incident Timeline Analysis

Graphical timeline analysis

Display all the alarms and associated waveforms that are part of an incident

Easily analyze events sequence on a graphical timeline

Pan and zoom to reduce the time analysis window



Life Is On

Schneider Electric

PSO 2020 Alarms Deep Dive

- 1 Why new alarms for PSO 2020
- 2 Smart Alarm Concepts & Usage
- 3 **Waveforms**
- 4 Filters and Views
- 5 Acknowledgements
- 6 Managing permissions & settings
- 7 Alarm annunciator

New HTML5 waveform viewer

Simplified waveform experience



View Settings | Incident History – Power Quality Incidents | Incident Display

Incident: Sag - 5 Devices - 1/26/2019 1:37:32.113 PM (Pacific Standard Time) - 2,491 ms

- Details
- Alarms
- Events
- Waveforms

Waveforms (5)

1:37:32.113 PM

Inspect Utility.Main
Saturday, January 26, 2019 1:37:32.113 PM

Voltage (V) | Current (A)

Start of Sag. V1: 86.0 %, 2,451 ms ↑

Inspect LV.Transformer16a
Saturday, January 26, 2019 1:37:32.123 PM

Voltage (V) | Current (A)

Representative Waveform (Start of Sag). V1: 86.0 %, 2,454 ms ↑

Inspect LV.Transformer15

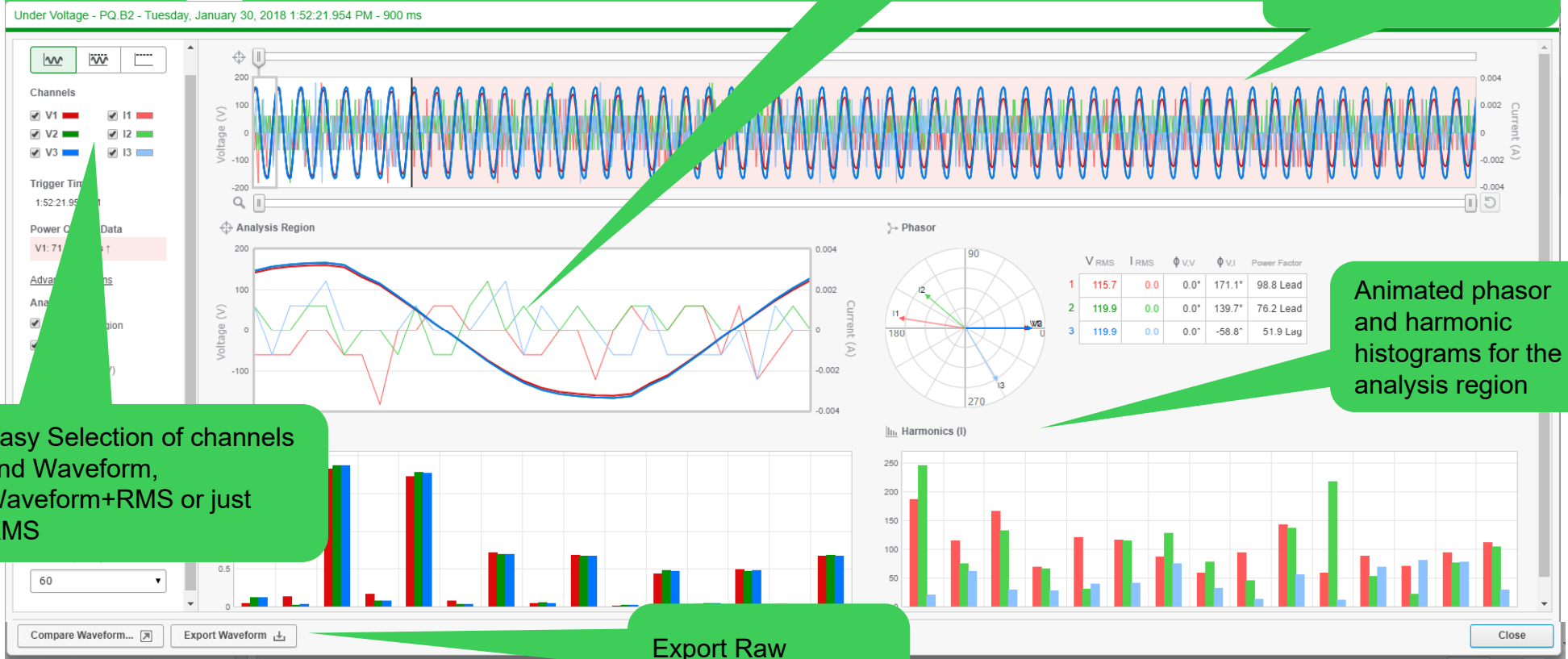
Close

1 - 15 of 15 Incidents (Max records: 200) | Lines/page: 50

Tightly integrated HTML5 waveform viewer
Allows operators to compare multiple waveforms
Supports both ION and IEEE Standard C37.111 (1999 and 2013 COMTRADE formats)

New HTML5 waveform viewer

Details



Move analysis region for detailed analysis of cycles

Easy Pan and Zoom

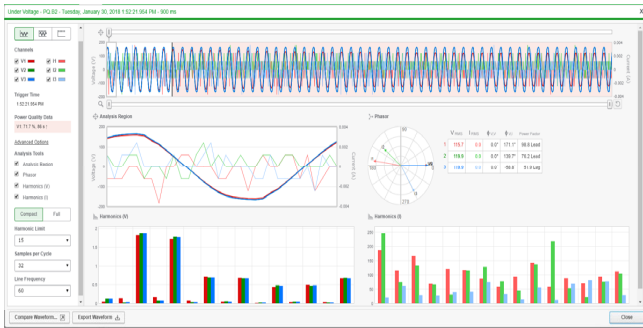
Easy Selection of channels and Waveform, Waveform+RMS or just RMS

Animated phasor and harmonic histograms for the analysis region

Export Raw Waveform Data to CSV

New HTML5 waveform viewer

Technical details around how ION waveforms are handled



PSO Server parses the time/value pairs in the COMTRADE 2013 waveforms and send this to the HTML5 waveform viewer



PSO Server downloads "ION format" waveform from ION9000 & PM8000 and then converts this to COMTRADE 2013 format which is stored in PSO waveform database

ION9000 & PM8000 capture waveforms in "ION format"

Waveform Data Export (CSV)

AutoSave Sample_Device_2-2019-10-27_16_37_24.647_(America_Chicago) (1) - Excel

File Home Insert Draw Page Layout Formulas Data Review View Help Tell me what you want to do

A1 Timestamp (Client Local) America/Chicago

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Timestamp	Timestamp	V1	V2	V3	I1	I2	I3						
2	37:24.6	37:24.6	-227.806	493.8593	-262.525	-47.0595	170.214	-121.833						
3	37:24.6	37:24.6	-230.994	492.6073	-258.313	-48.2321	169.6657	-120.344						
4	37:24.6	37:24.6	-233.726	492.0382	-255.353	-49.4828	169.1761	-118.777						
5	37:24.6	37:24.6	-237.142	492.152	-252.848	-50.6554	168.6278	-117.426						
6	37:24.6	37:24.6	-239.988	492.152	-251.14	-51.8475	168.1578	-115.917						
7	37:24.6	37:24.6	-242.834	493.5179	-249.319	-53.0788	167.727	-114.39						
8	37:24.6	37:24.6	-245.908	494.4284	-247.497	-54.2904	167.1787	-113.214						
9	37:24.6	37:24.6	-248.071	494.6561	-245.562	-55.4825	166.8654	-111.785						
10	37:24.6	37:24.6	-250.462	494.087	-242.83	-56.616	166.5912	-110.609						
11	37:24.6	37:24.6	-252.853	492.835	-239.301	-57.9254	166.1996	-109.336						
12	37:24.6	37:24.6	-254.674	491.5829	-234.974	-59.1762	165.9058	-108.102						
13	37:24.6	37:24.6	-256.951	490.5586	-230.421	-60.3487	165.7492	-107.064						
14	37:24.6	37:24.6	-258.659	489.4204	-225.981	-61.5995	165.6121	-106.104						
15	37:24.6	37:24.6	-260.253	489.0789	-222.224	-62.6939	165.6904	-105.027						
16	37:24.6	37:24.6	-263.099	488.5099	-218.695	-64.0815	165.6512	-104.204						
17	37:24.6	37:24.6	-265.376	487.7131	-216.418	-65.254	165.7883	-103.342						
18	37:24.6	37:24.6	-268.222	487.4855	-214.596	-66.6025	165.9058	-102.676						
19	37:24.6	37:24.6	-270.84	487.3717	-212.775	-67.6969	166.0625	-101.991						
20	37:24.6	37:24.6	-274.028	487.2578	-210.384	-68.9672	166.3758	-101.364						
21	37:24.6	37:24.6	-276.874	486.9164	-207.424	-70.1984	166.65	-100.835						
22	37:24.6	37:24.6	-278.923	486.6888	-204.009	-71.3319	167.1395	-100.208						
23	37:24.6	37:24.6	-281.883	486.0058	-200.594	-72.5436	167.4529	-99.7775						
24	37:24.6	37:24.6	-284.16	485.4367	-196.723	-73.8725	167.9033	-99.2487						
25	37:24.6	37:24.6	-286.323	484.5262	-193.08	-74.9473	168.2753	-98.7394						
26	37:24.6	37:24.6	-288.828	483.6156	-190.12	-76.4326	168.7062	-98.2106						
27	37:24.6	37:24.6	-290.877	483.0465	-187.274	-77.7225	169.2545	-97.7013						
28	37:24.6	37:24.6	-293.04	483.1604	-184.655	-79.0318	169.6461	-97.2312						
29	37:24.6	37:24.6	-294.52	483.0465	-182.72	-80.3608	170.1749	-96.7415						

Sample_Device_2-2019-10-27_16_3

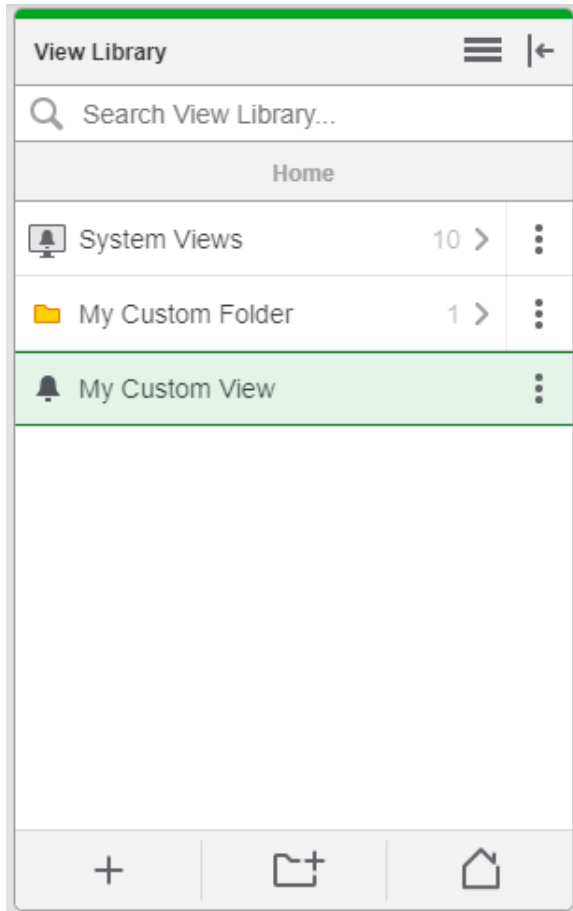
Export time stamp and channel data

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Alarm Views

Manage alarm library

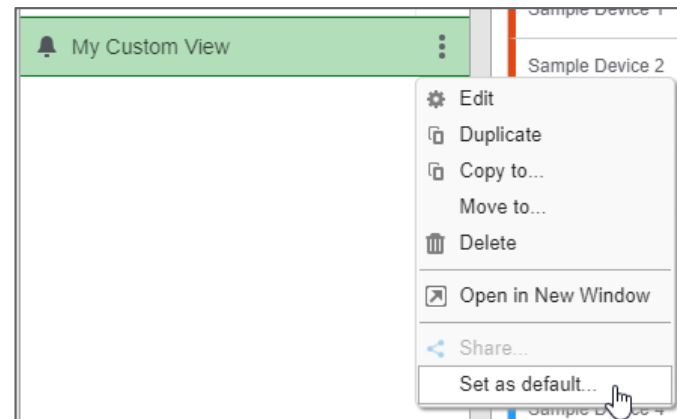


Customize alarm library from runtime

Create multi-level **public folders** containing variety of custom alarm views

Create **public or private alarm views**

Set **default views** shown when Alarms tab selected (*user & system wide options*)



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Alarm Views

Easily create custom views



The image displays two side-by-side screenshots of the 'Alarm Views' configuration interface. The left screenshot shows the 'New Event View' configuration, and the right screenshot shows the 'Custom Incident View' configuration.

Left Screenshot (New Event View):

- View Name: New Event View
- Location: Home
- Public/Private: Public
- View Type: Alarm Status, Alarm History
- Level of Detail: Slider set to 'Alarms' (between 'Incidents' and 'Events')
- Priority: Slider set to 0 (between 0 and 255)
- Sources: All Sources
- Buttons: Cancel, Save

Right Screenshot (Custom Incident View):

- View Name: Custom Incident View
- Location: Home
- Public/Private: Public
- View Type: Alarm Status, Alarm History
- Level of Detail: Slider set to 'Alarms' (between 'Incidents' and 'Events')
- Priority: Three colored buttons (Blue, Yellow, Red)
- State: Active or Unacknowledged
- Sources: All Sources
- Categories: Power Quality (All), Asset Monitoring (Current Monitor)
- Buttons: Cancel, Save as New

End users can create their own views containing:

- View name
- Library location
- Public/private access

Views can be prefiltered by:

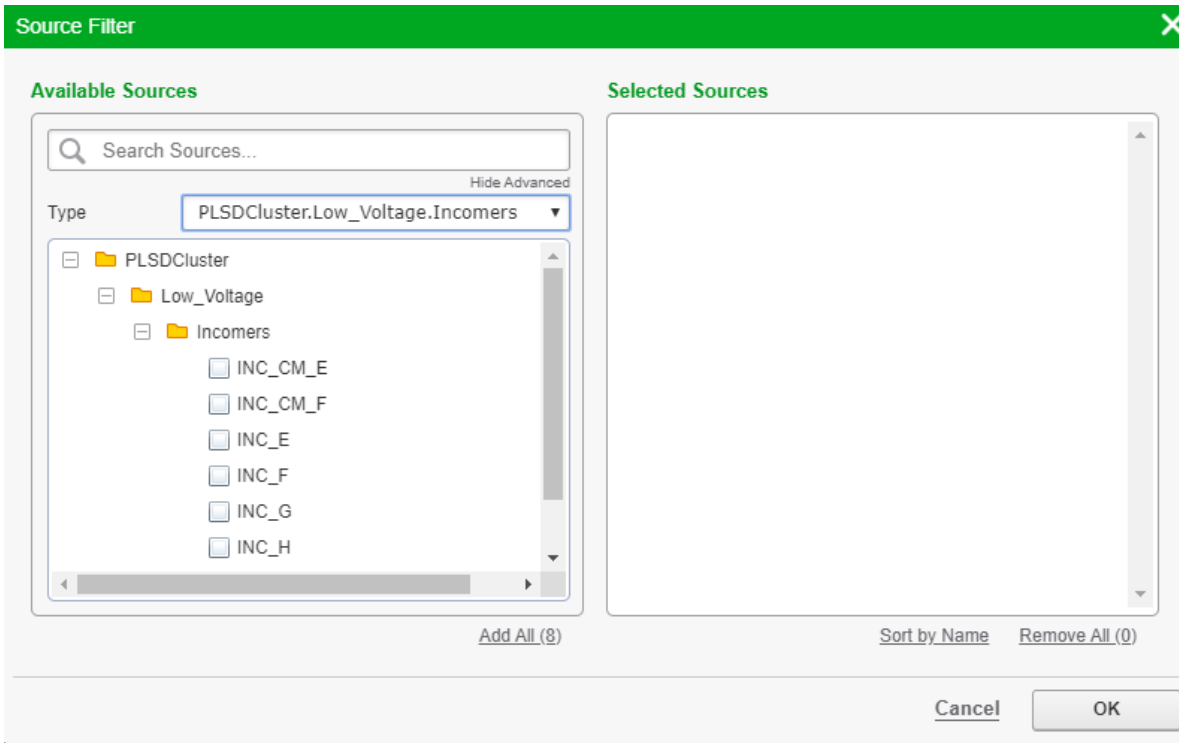
- Priority level(s)
- Sources
- Alarm category / type *(available for alarms & incidents)*

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Alarm Views

Source / Device Filter



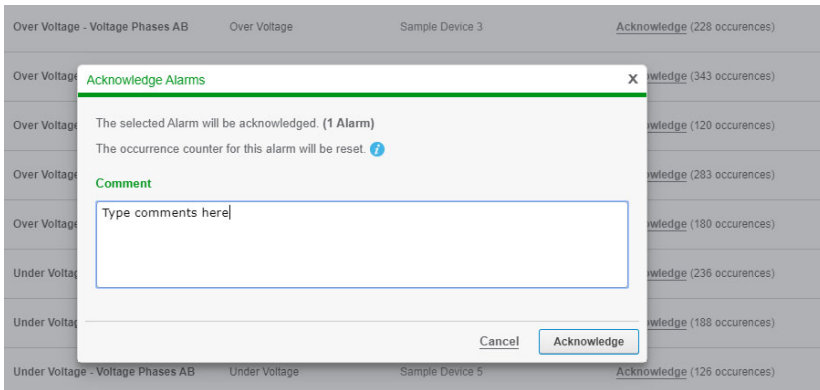
New hierarchy filter for PSO 2020

PSO 2020 Alarms Deep Dive

- 1 Why new alarms for PSO 2020
- 2 Smart Alarm Concepts & Usage
- 3 Waveforms
- 4 Filters and Views
- 5 Acknowledgements
- 6 Managing permissions & settings
- 7 Alarm annunciator

Alarm Acknowledgement

How it works



When you acknowledge from the **Alarm status** or **history views**, the alarm definition and all respective alarm instances will be acknowledged.

When you acknowledge from **Incident view**, all alarm definitions and respective alarm instances that are part of the incident will be acknowledged.

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Alarm Acknowledgement



Acknowledging from Incidents and Alarm History views

The screenshot displays the 'Alarm History - Recent Alarms' section. At the top, there is a header with 'Update in 0:07', a play button, a 'Last 7 Days' filter, and a search bar labeled 'Search Alarm Display'. Below the header is a table of three 'Under Voltage' alarms. The second alarm, 'Sample Device 5', is highlighted with a blue bar. To the right of the table, there is a vertical toolbar with three 'Details' icons (represented by a document with a magnifying glass). The middle 'Details' icon is highlighted with a green box. An 'Actions' menu is open over the second alarm, containing two buttons: 'Timeline Analysis...' and 'Acknowledge...'. The 'Acknowledge...' button is highlighted with a green box.

Alarm Type	Value	Device	Time	Duration
Under Voltage	400.166 V	Sample Device 1	11.1 sec ago	2,071 ms
Under Voltage	399.565 V	Sample Device 5	11.2 sec ago	4.49 sec
Under Voltage	399.221 V	Sample Device 3	11.2 sec ago	3.85 sec

To acknowledge alarms from Incidents and Alarm History views, click on “Details” icon and acknowledge from the details page.

Alarm Acknowledgement

Acknowledging multiple alarm definitions



Alarm Status – Recent Alarms Update in 0:04

State	Name	Type	Source	Acknowledgement	Last Occurrence
10.7 sec ago	Over Voltage - Voltage Phases AB	Over Voltage	Sample Device 4	Acknowledge (61 occurrences)	10/28/2019 9:55:20.302 AM
10.9 sec ago	Over Voltage - Voltage Phases AB	Over Voltage	Sample Device 1	Acknowledge (130 occurrences)	10/28/2019 9:55:20.120 AM
11.1 sec ago	Over Voltage - Voltage Phases AB	Over Voltage	Sample Device 2	Acknowledge (107 occurrences)	10/28/2019 9:55:19.956 AM

- ⚙ Edit
- 🗑 Open in New Window
- 📄 Export to CSV
- Acknowledge All...**
- Acknowledge Selected...**
- Show/Hide Columns...
- ⏸ Pause Updates

From **Alarm Status view**, you can **acknowledge multiple alarms** via variety of options:

- **Acknowledge All** (*acknowledges all alarms in the current view*)
- **Acknowledge All Selected** (*Ctrl+Click to select individual alarms / Shift+Click to select a block of alarms*)

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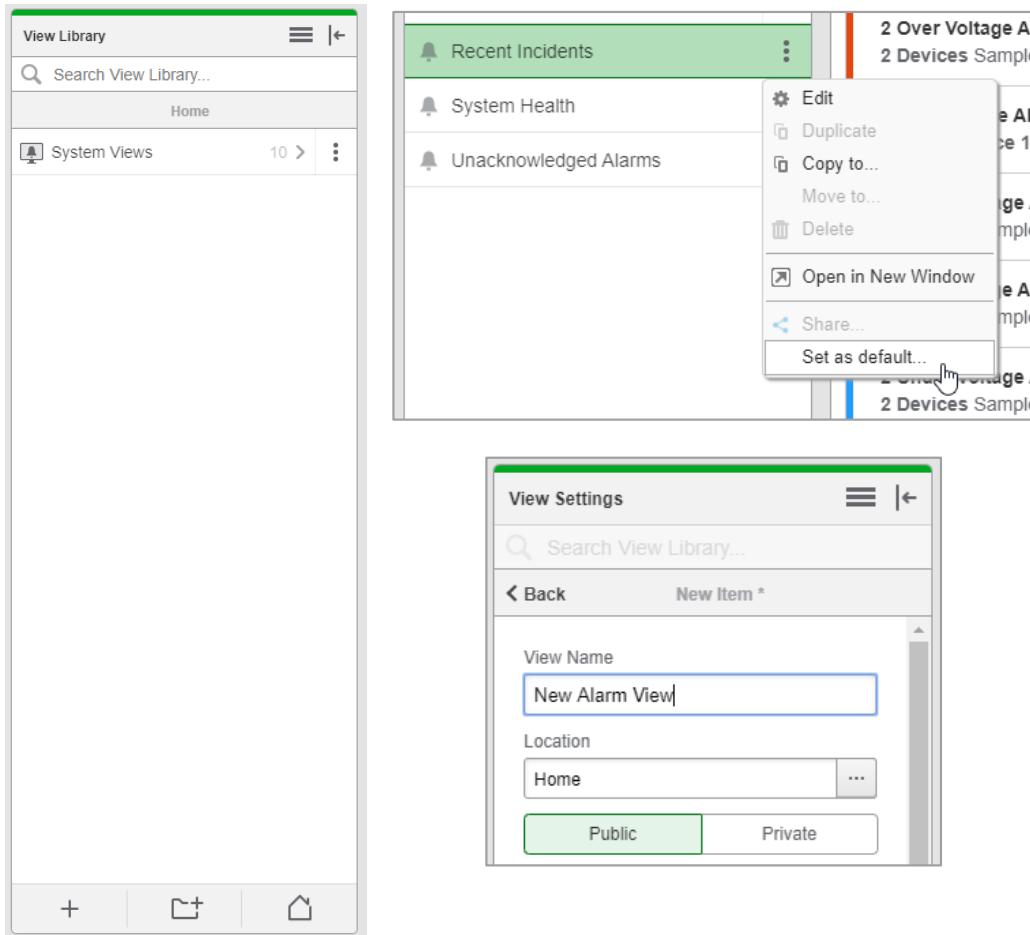
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PSO alarm permissions

Control user access and privileges



Administrators will have ability to control following:

- **Acknowledge** alarms
- **Create** new alarm views
- **Edit** any existing alarm views in system
- **Delete** any alarm views in the system
- Set **default** alarm view for the system
- Access to alarms application
- Ability to view incidents

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Configurable alarm settings

Alarm settings configurable in web interface



Settings Library |←

Search Settings Library...

← Back Alarms

Alarm Settings

Alarm Settings

Display Settings

Maximum Number of Incidents Displayed: 500

Maximum Number of Alarms Displayed: 1000

Maximum Number of Events Displayed: 2000

Update Interval: Continuous

Annunciator

Enable

Show counts for: All

Select Sound File...

Update Interval: 3 seconds

Priority Classification

Label	Color	Start	End	Visible In Annunciator	Audible In Annunciator
Not a Priority	Grey	0	63	<input checked="" type="checkbox"/>	
Low	Blue	64	127	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Medium	Yellow	128	191	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
High	Red	192	255	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Waveform and Burst Data

V1: Red, V2: Green, V3: Blue, V4: Brown

I1: Red, I2: Green, I3: Light Blue, I4: Orange, I5: Grey

Active: Blue, Reactive: Grey, Apparent: Black, Frequency: Purple

[Reset to Default](#)

Various **system wide alarm settings** configurable by admin users in web interface

- Alarm display settings
- Waveform colors
- Alarm priority classification and colors

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Alarm Annunciator

See system alarm state at a glance in banner



EcoStruxure Power SCADA Operation

DIAGRAMS EBO DEMO ALARMS TRENDS TEST APPS SETTINGS

Settings Library | Search Settings Library... | Back Alarms | Alarm Settings

Alarm Settings

Display Settings

Maximum Number of Incidents Displayed: 500

Maximum Number of Alarms Displayed: 1,000

Maximum Number of Events Displayed: 2,000

Update Interval: Continuous

Annunciator

Enable

Show counts for: All

Select Sound File...

Update Interval: 3 seconds

Priority Classification

Label	Color	Start	End	Visible In Annunciator	Audible In Annunciator
Not a Priority	Grey	0	63	<input checked="" type="checkbox"/>	
Low	Blue	64	127	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Medium	Yellow	128	191	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
High	Red	192	255	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Ensure **awareness of new alarms** in your system at a glance and via **audio alerts**

Settings configurable by Admin users:

- Show/hide annunciator itself
- Sum of alarms by various priority levels & states
- Alarm sound
- Etc.

Ability to **navigate from annunciator to associated view**

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