



INNOVATION

EcoStruxure Power Monitoring Expert 9.0

What's New?

Power Solutions

Welcome to EcoStruxure Power Monitoring Expert 9.0

Commercial Delta Training: What's New in Version 9.0

The intended audience for this presentation is:

- Sales and Marketing teams
- Critical Power EcoXperts
- Solution Architects and Segment teams
- Technical support and execution teams

Prerequisites:

- Familiarity with PME is preferred



Agenda

- | | |
|---|--------------------|
| 1 | About PME 9.0 |
| 2 | Commercial Updates |
| 3 | New End User Value |
| 4 | New Channel Value |
| 5 | Platform Updates |
| | |
| | |
| | |

About PME 9.0

EcoStruxure Power Monitoring Expert 9.0 is:

- Major software release for PME.
- A free upgrade for customers in connected service plans that include software assurance.
- Paid upgrade from PME 8.x and previous versions.
- PME 9.0 is a Schneider Electric Hero Offer that brings key differentiators to the market.

Release date for PME 9.0 is August 31st, 2018



PME 9.0 Major Innovation Themes



Power Event Analysis

Get things back to normal faster than ever before



Multi-Site Systems

Enable monitoring of multiple sites from a single server



IT Compliance

Respond to needs of corporate IT departments



Enhanced Energy Management

Optimize Energy Performance



Equipment Performance

Insights on your Electrical Distribution Equipment



Lower Total Cost of Ownership

Simpler for our key customers and channel

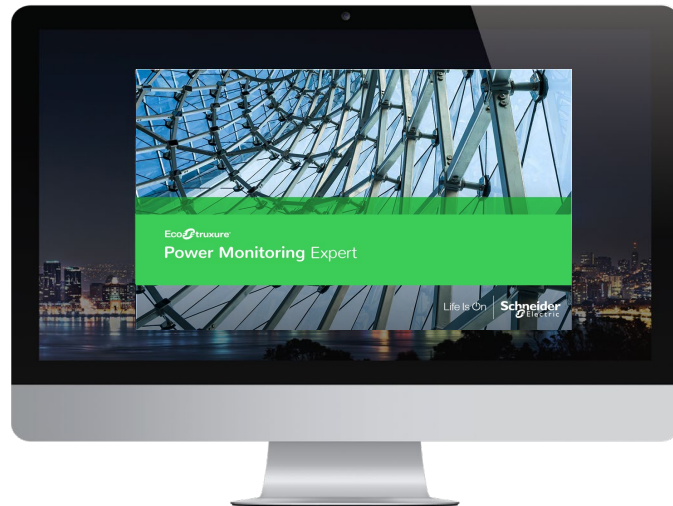
Life Is On

Schneider
Electric

PME 9.0 Summary

The Best Power Management Software in the World

- Smart alarm management and timeline analysis of power events
- Multi-Site support
- Key IT compliance features
- Energy Modeling
- Cyber Security Certifications
- Easier custom reports
- Improved engineering tools
- And much more compared to any previous release...



EcoStruxure[™]
Power Monitoring Expert
v9.0

Award Winning Innovation...



EcoStruxure Power

Digitized Power Distribution

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



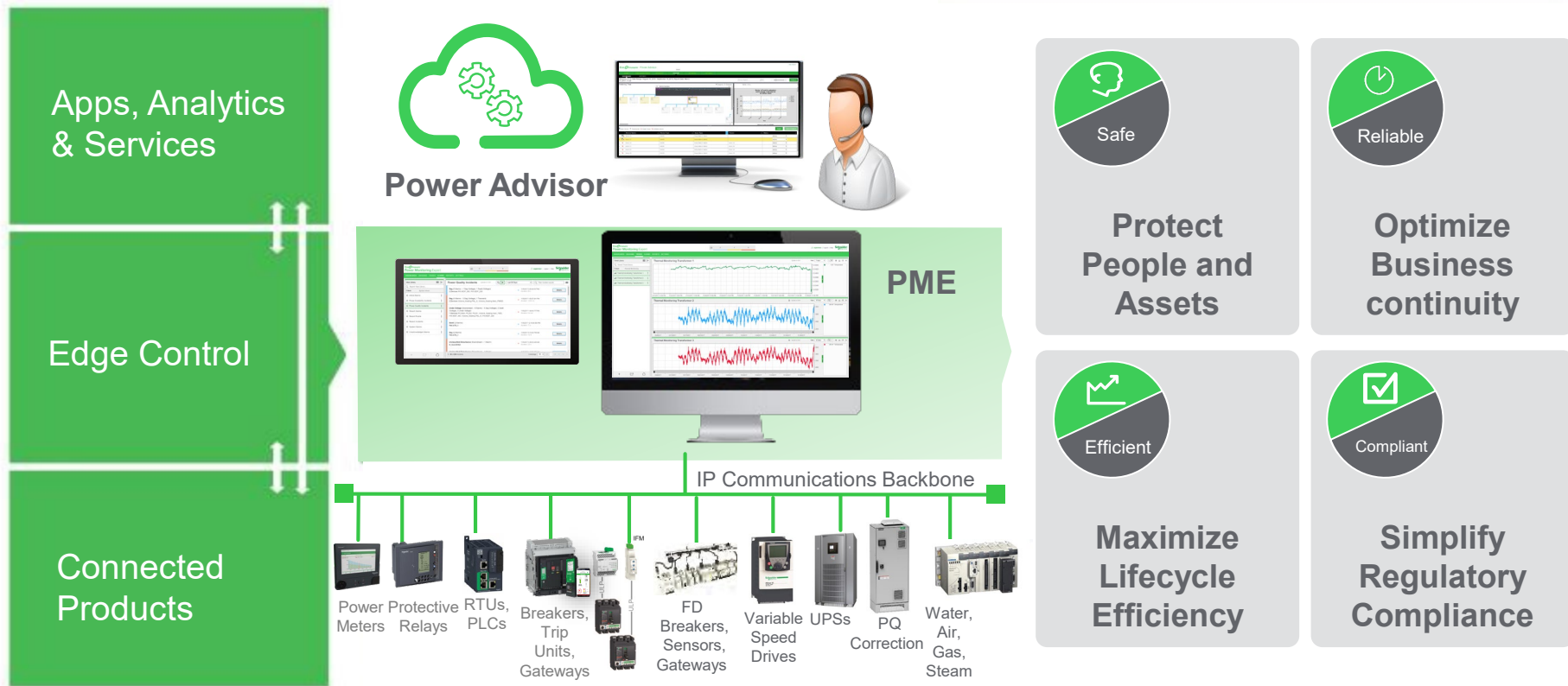
Buildings

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Innovation at Every Level: PME 9.0 Highlight

Positioning and Customer Value



A photograph of a woman and a man in a modern office environment. The woman, with long dark hair, is in the foreground, leaning on a glass railing and smiling towards the camera. The man, with short brown hair and a beard, is standing behind her, also smiling. They are both dressed in business casual attire. The background shows large windows and office furniture, with a green semi-transparent banner overlaid across the middle of the image.

Commercial Updates

Part numbers, Policies and Licensing

PME 9.0 Commercial Updates Summary

Commercial Simplification Continues

- **Easy!** Same part numbers as PME 8.x!
- **Simple!** Single base licence
- **New!** Web Client Enforcement and UNL Client Positioning
- **Better!** and updated software modules
- PQ Performance available globally!
- SPM 7 Legacy part numbers removal

Single Base Licence

Easier System Quotation

- Only Standard Edition base licence part number (PSWSANCZZSPEZZ). No more DC or HC editions
- Installation media (ISO) includes all the required components:
 - Vista diagram images, hierarchies, device drivers, etc.
 - **NEW:** 1 extra Web Client licence included with the base licence
- DC and HC edition upgrades to PME 9.0 are supported based on the software version



New! Web Client Licence Enforcement

No changes to commercial policy

- Every person using the PME Web Client or any of its tools requires a Web Client licence.
- Licence enforcement works on a **per named user basis**
- Engineering Clients include access to the Web
- **Avoid surprises** check licensing compliance before upgrading to PME 9.0



Example: 4 Users = 4 Licences

Unlimited Client Licence Positioning

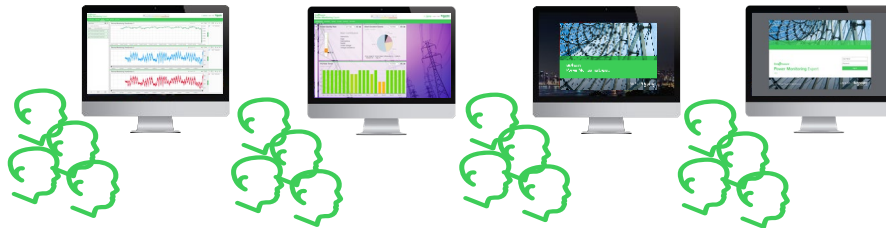
PME 9.0 multi-site and user partitioning features will allow and encourage system administrators to grant access to more users to PME than before.

- **New** break even point between individual client licences and unlimited client licences increased by a factor of 6.
- Sell Unlimited Client licence to only those customers who really need it and are willing to pay for it!



Example: One site with 15 users.
Use individual client licences

Example: a few sites with 65 users total. Use Unlimited client



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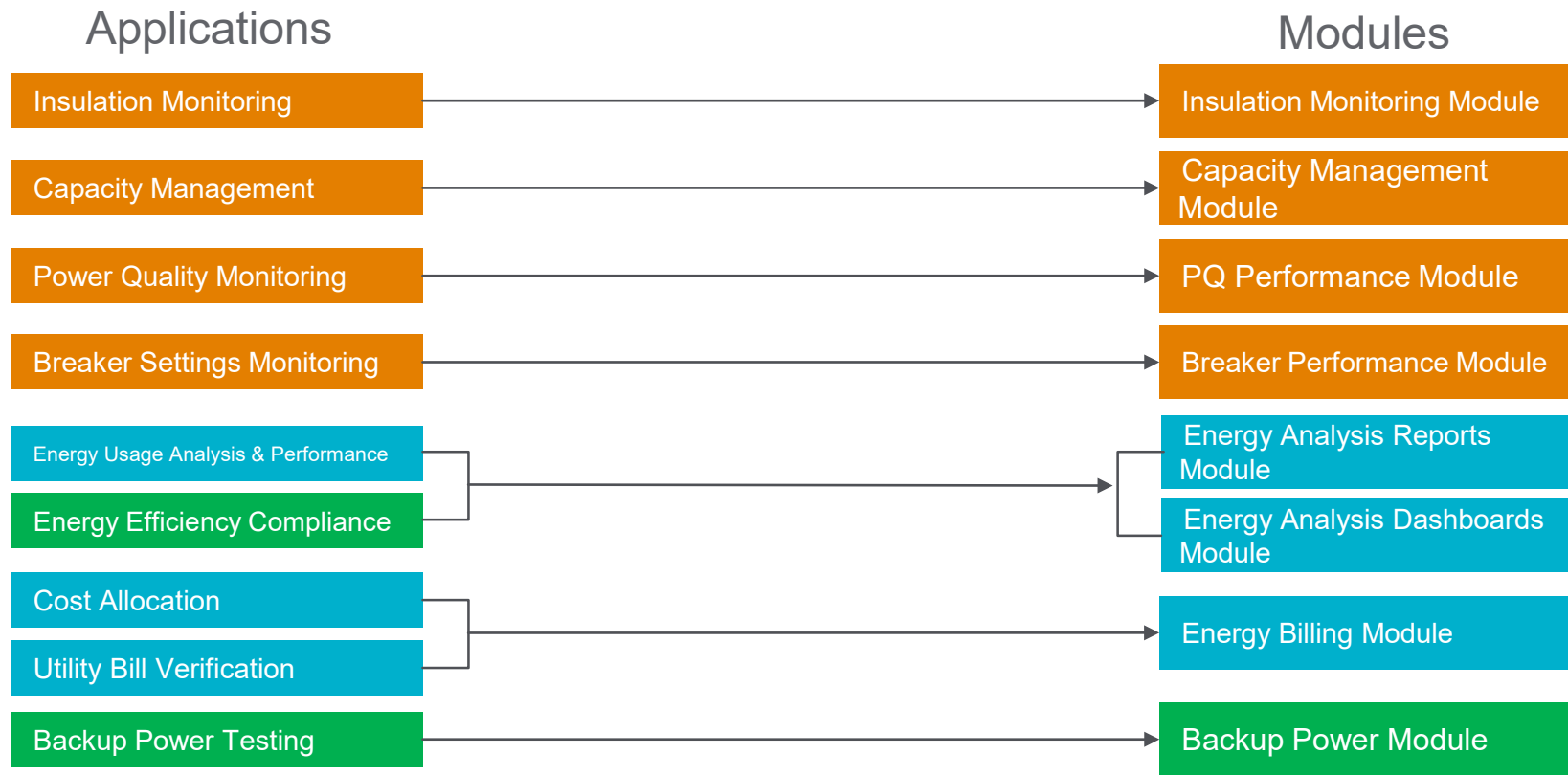
Software Modules

Commercial Updates

Modules are being restructured to provide more value and be more aligned with the EcoStruxure Power Applications:

EcoStruxure Application	PME 8.2 Modules	PME 9.0 Module
Insulation Monitoring	OT Interface included in PME4HC base	Insulation Monitoring Module
Capacity Management	• Power Capacity Module • Power Efficiency Module • Generator Performance Module*	Capacity Management Module
Backup Power Testing	• EPSS • Generator Performance • UPS Performance	Backup Power Module
Cost Allocation	• Energy Billing Module • IT Billing Module	Energy Billing Module
Bill Verification	Energy Billing Module	

Software Modules to ESXP Applications Mapping



Software Modules (Cont.)

Commercial Updates

- **New** additional functionality in Energy Analysis and Breaker Performance same price
- **New** Part number for advanced usage analysis gadgets:
 - Sankey Diagram
 - Heatmap/carpet plot
 - Pareto and Aggregated Pareto Charts
 - Ranking and Aggregated Ranking Charts
- McAfee Application Control (Whitelisting) Part number

End of Commercialization

- **SQL Server 2012** Standard Edition part number (PSWSQL2012L) end of commercialization is April 2018
- Power Efficiency Module, Generator Performance Module, UPS Performance Module, EPSS Module
- StruxureWare Power Monitoring 7.0.1 (SPM 7) expansion parts **end of commercialization** will be December 31st, 2018.



A woman with dark hair and glasses is smiling and looking towards the right. She is wearing a light-colored top with orange polka dots. She is sitting at a desk with a laptop. In the background, there are office shelves with various items, including a calendar and some papers. A green semi-transparent banner is overlaid on the image, containing the text "End User Value" and "New Features and Benefits".

End User Value

New Features and Benefits



Power Events Analysis

Get things back to normal faster than ever before

Power Events Analysis

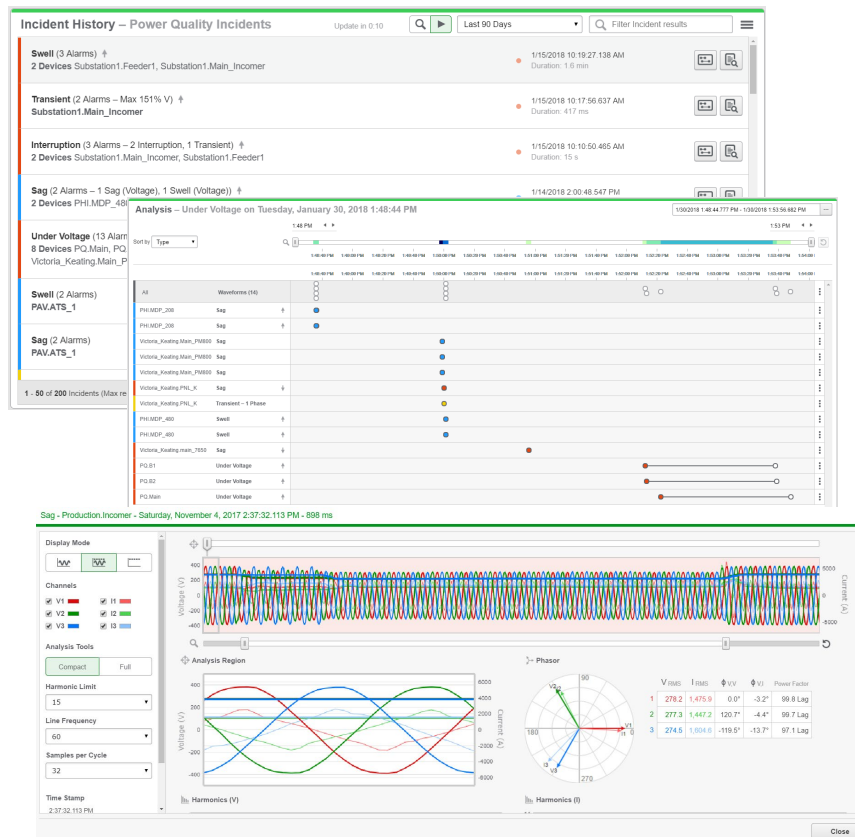
The Right Information at the Right Time



- “I need to quickly see the impact of incidents that effect my facility. I have too many alarms to understand what is really going on. I don't want to be distracted by irrelevant information when I am trying to restore operations”



- Faster incident analysis by automatic grouping of related alarms.
- Make faster decisions, with key alarm information - such as disturbance direction - available at a glance
- Ensure important information is not lost in a flood of data with intuitive and powerful alarm filtering, searching, and categorization.
- See what you've missed with alarm counters



Connected Devices



Time Synchronization



Smart Alarms, Timeline and
waveform analysis

Smart Alarm Clustering

More Information

More Data

Incidents

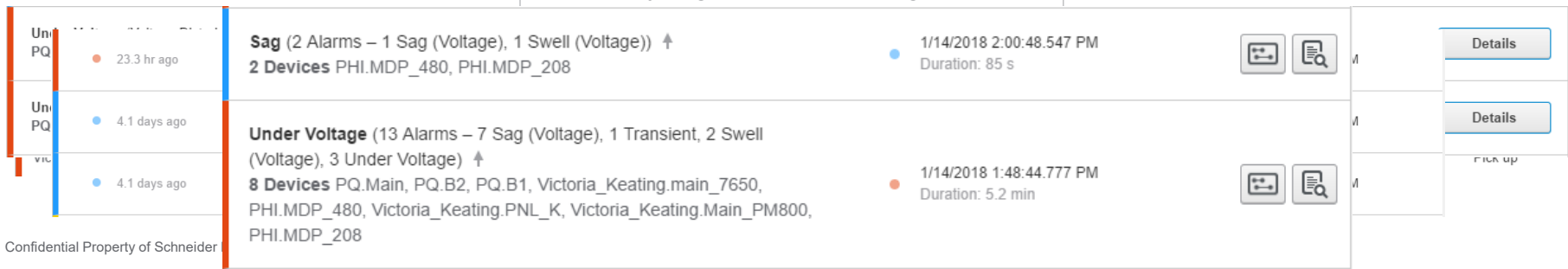
- Grouping of multiple alarm instances over time.
- 1 to N sources and 1 to N alarms instances
- Minimizes noise and speeds up event analysis
- Starting point for “Incident Timeline Analysis”

Alarms

- **New Alarm definition** concept, 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

- **No change** from previous versions
- Single “event” in time from a single source
- View similar to Global event viewer
- Raw details as they come from devices and software
- Priority 0 to 255



Smart Alarm Visualization

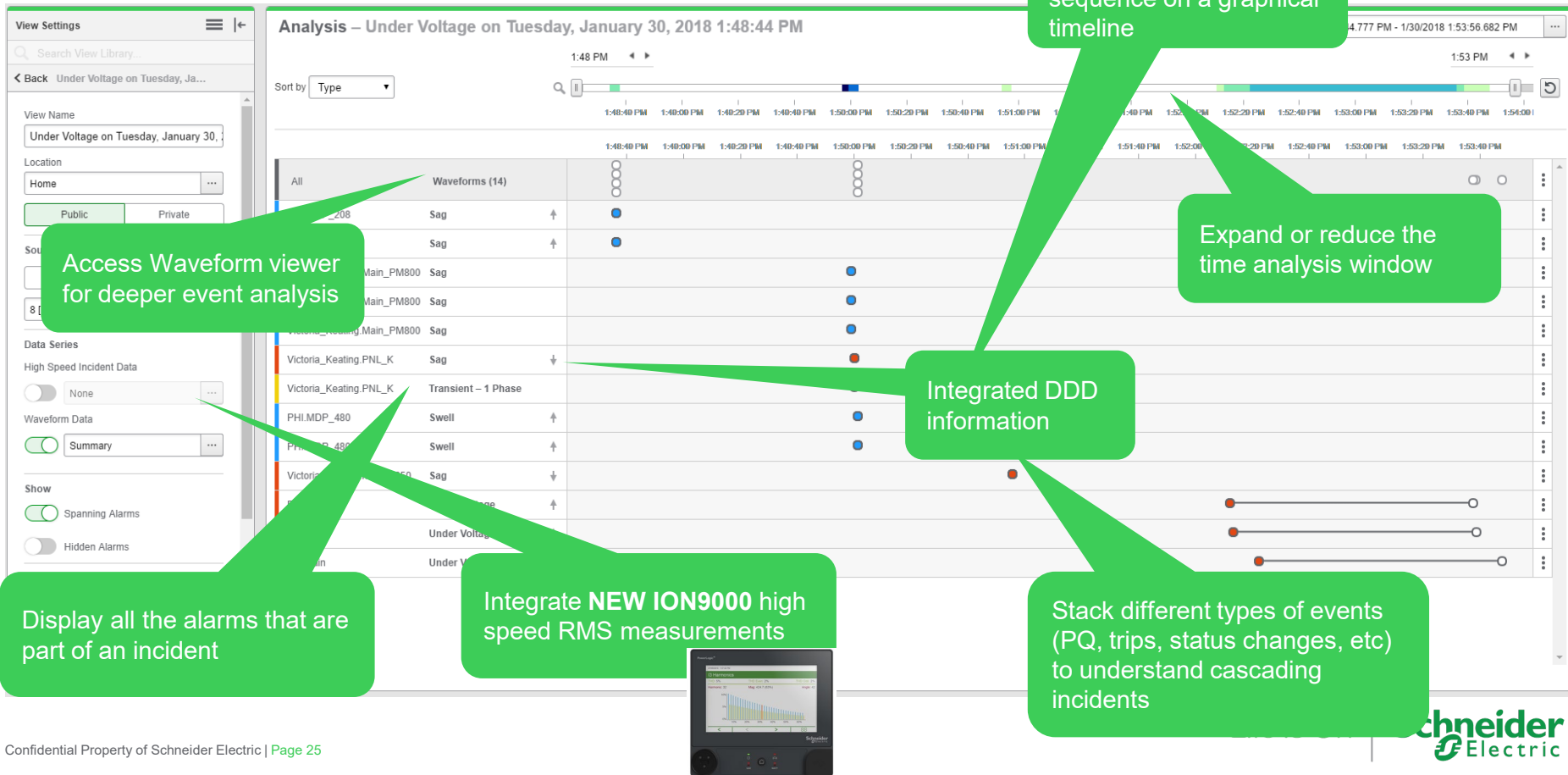
New Web Alarm Viewer simplifies and speeds up analysis of incidents impacting the facility

The screenshot displays the 'Incident History - Power Quality' page. On the left, a 'View Library' sidebar lists various alarm categories, with 'Power Quality Incidents' selected. The main area shows a list of incidents, each with a summary card. Callouts provide details about the interface's features:

- Navigation and configuration using NEW shared library concept with predefined views**: Points to the 'View Library' sidebar.
- Incident views – smart rollup of simultaneous alarms from multiple devices**: Points to the 'Power Quality Incidents' category in the sidebar.
- “Card view” displays key high level information for the alarm/incident**: Points to the summary cards for each incident.
- New filtering capabilities, keywords, alarm categories. live vs inspection mode**: Points to the search bar and filter icons at the top right.
- Full HTML5. Each view accessible with unique URL to embed alarm views in other applications**: Points to the bottom right of the interface.

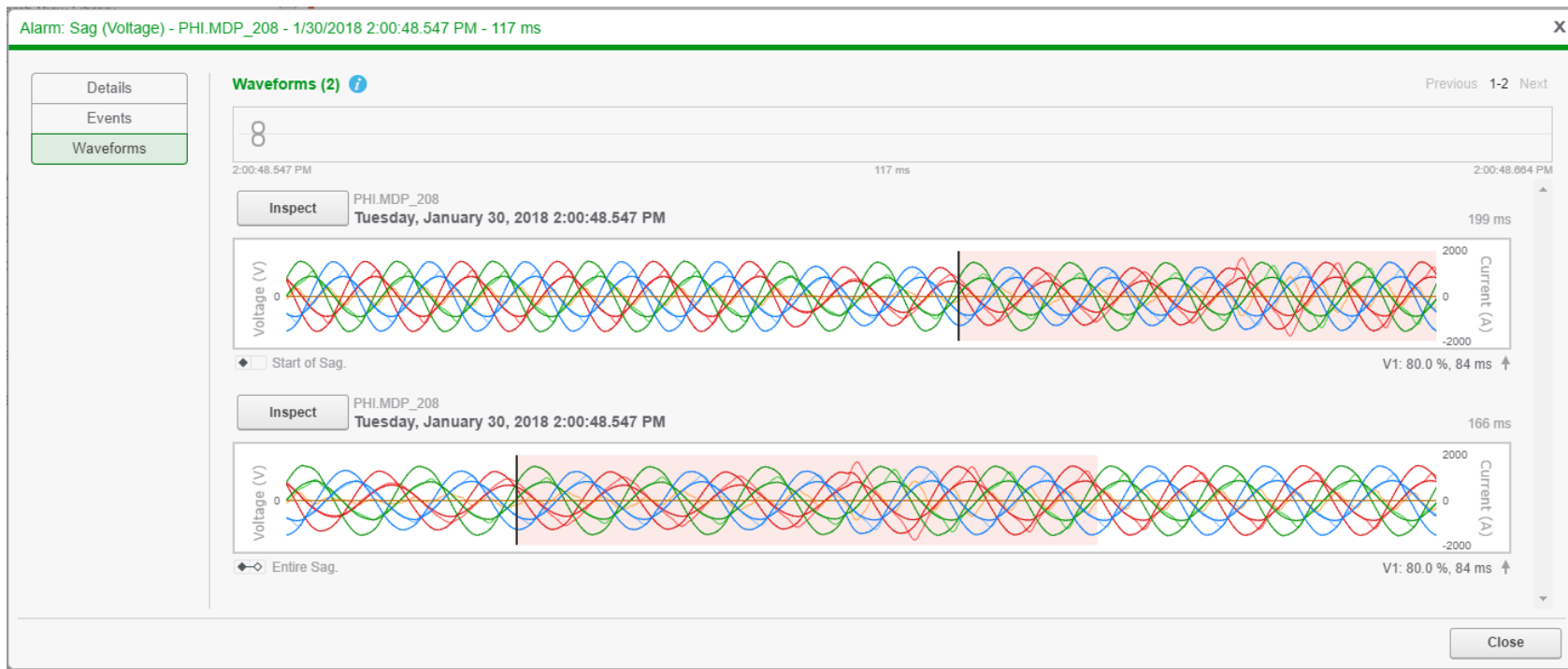
The interface includes a search bar, a filter dropdown, and a list of incidents with details such as 'Sag, Swell (186.7% Nominal Voltage – 2 Alarms)', '3 Under Voltages, 3 Sags, 2 Unclassified Disturbances', and '2 Sags, 2 Swells (149.2% Nominal Voltage – 4 Alarms)'. Each incident card shows the number of devices affected and the duration of the event.

Incident Timeline Analysis



New Alarm and Incident Summaries

Where, What and When of Alarms



New Alarm and Incident Summaries (Cont.)

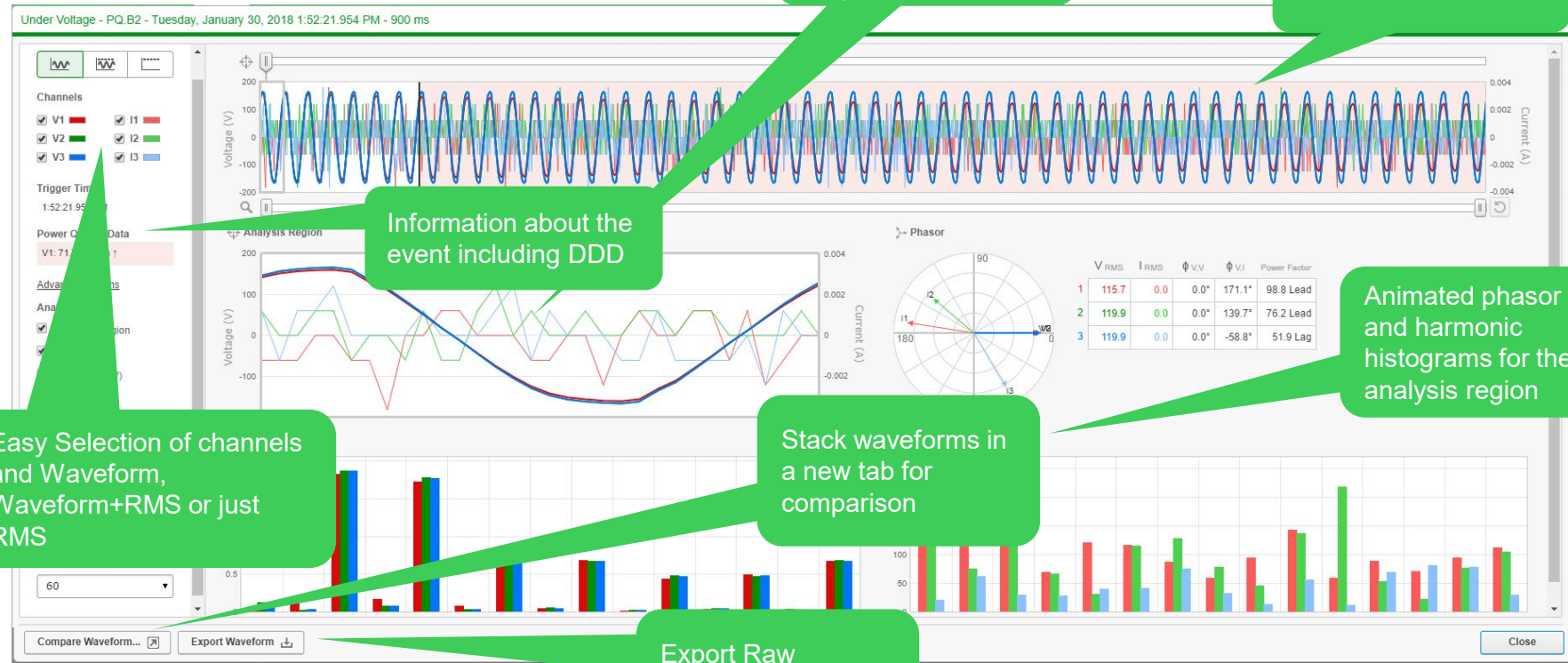
Where, What and When of Incidents



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New Web Waveform Viewer



Move analysis region
for detailed analysis
of cycles

Easy Pan and Zoom

Information about the
event including DDD

Animated phasor
and harmonic
histograms for the
analysis region

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

Stack waveforms in
a new tab for
comparison

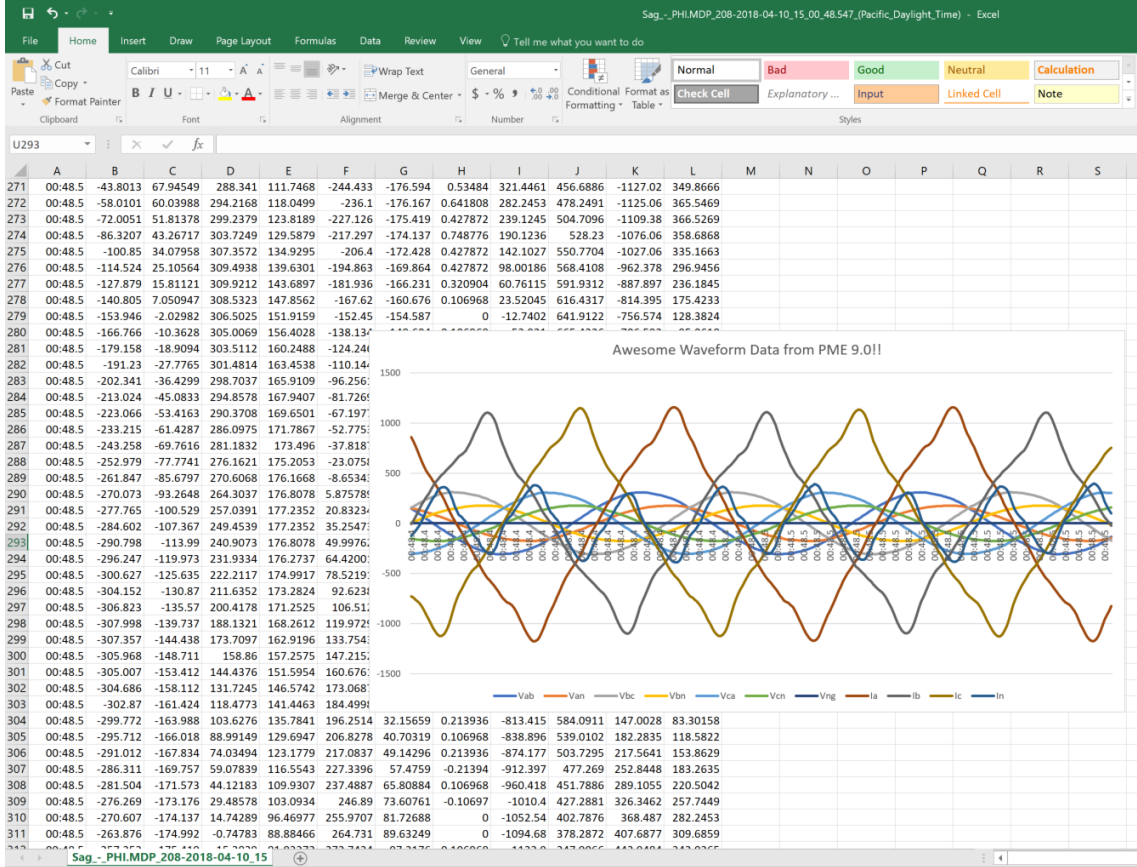
Export Raw
Waveform Data to
CSV

Waveform Viewer Comparison View

Print format ready



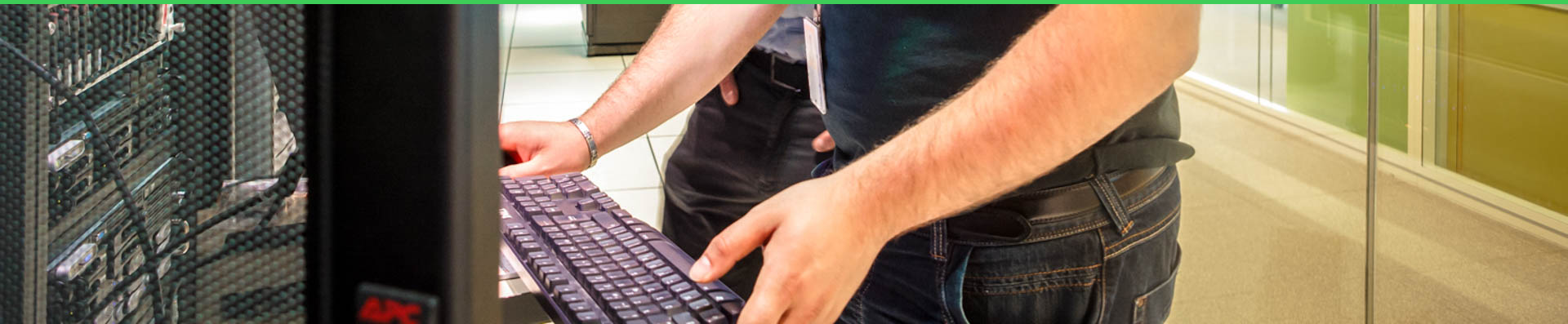
Waveform Data Export (CSV)





IT Compliance

Operation in the most demanding IT environments



IT Compliance

Operate in Demanding IT Environments



- *“As the IT department, we need our facility systems on our IT network to comply to our IT policies and minimize risk from cybersecurity threats that could impact our operations or reputation”*



- Support for commonly recognized IT policies such as Windows Active Directory to enable centralized user management and security policies.
 - Central user management
 - Secure password change policies
- Comply with corporate cybersecurity directives and align with industry-standard best practices



The Scope of IEC 62443 standard



Active Directory

Cybersecurity



Windows Authentication



100% HTML5

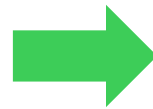
Windows Active Directory Integration

PME supports integration of Windows users and groups

- Login to PME using your windows credentials (active directory or local users)
- Single sign on (SSO) support.
- Enforce password policies via Windows (complexity, expiration, etc)
- Support for both Windows and local PME users
- Compliance with common IT requirement



Hi! I'm Windows user Jane



Is Jane in your records?

Yes! Authenticate

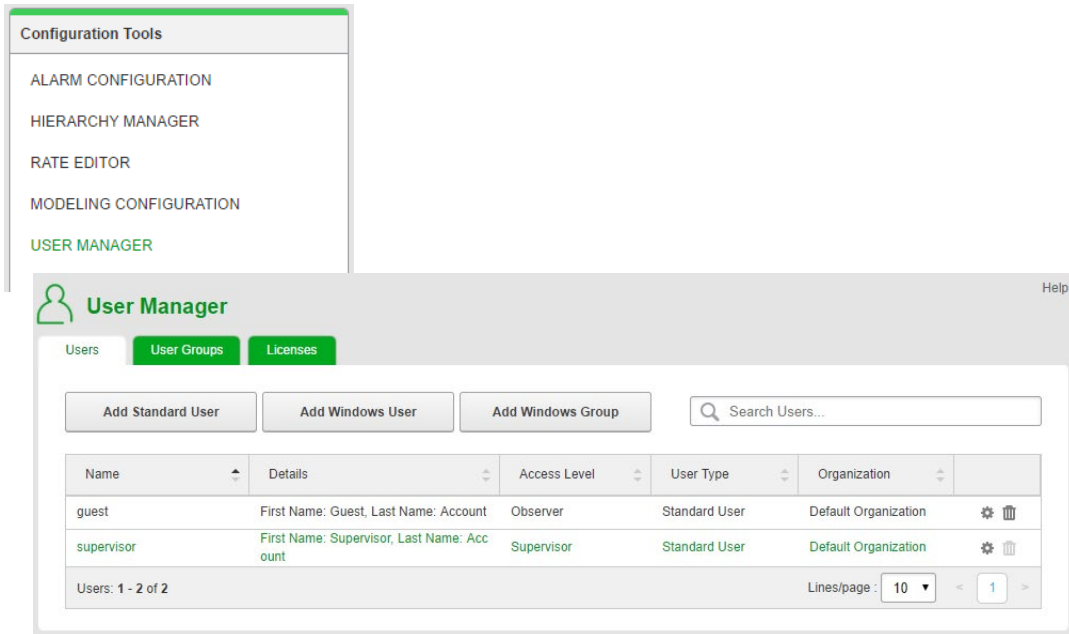


Microsoft
Active Directory

Web Based User Management

User Manager is now a configuration tool on the web:

- Create standard users or import Windows users and/or groups
- Create PME groups and add users, sources and web apps to it.
- Review Web Client licences assignation. Total available, issued and remaining
- User Manager has been removed from Management Console

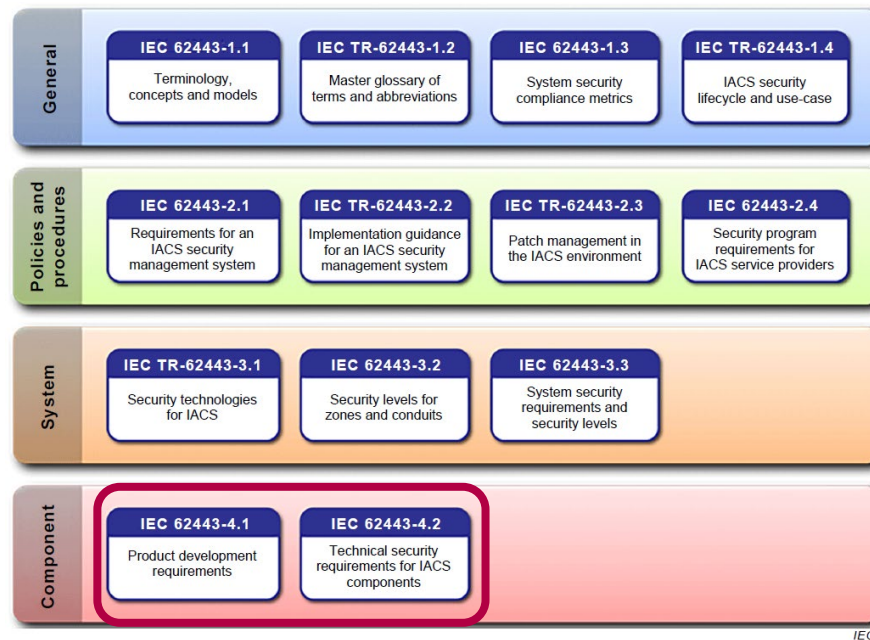


Cybersecurity Compliance

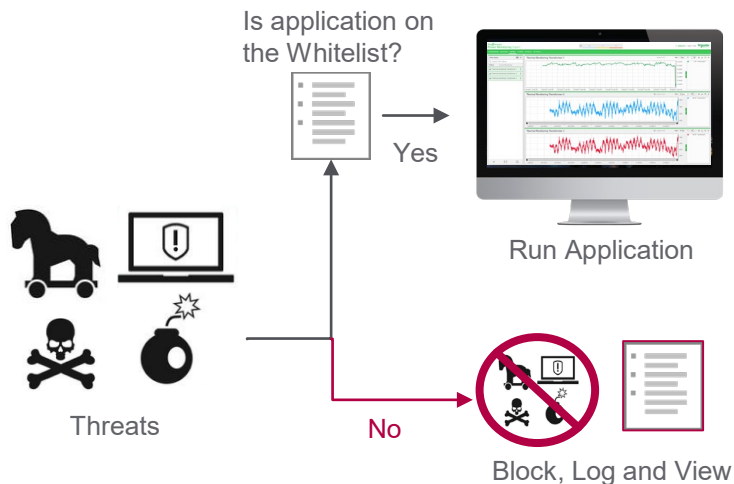
PME 9.0 is designed for IEC62443 compliance at the component level:

- **IEC62443-4-1**: Assess a supplier's product development lifecycle for industrial automation and control systems (IACS)
- **IEC62443-4-2 (SL1)**: Defines the security requirements for the components of an IACS

Key prescription item. Make sure to specify this requirement



Support for McAfee Whitelisting



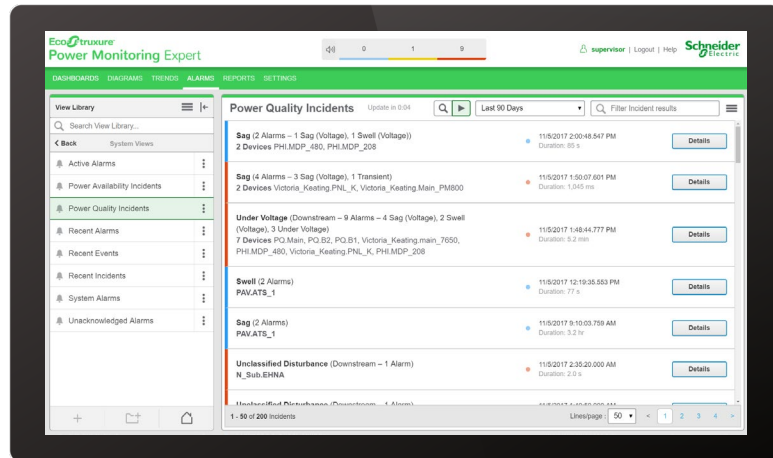
Fast, flexible, and scalable protection against zero-day and advanced persistent threats

- PME 9.0 has been tested and validated with McAfee Application Control
- McAfee Application Control blocks unauthorized executables on the PME server
- Blocks executables, libraries, drivers, java apps, Active X controls, Scripts and specialty code.
- App note available to deploy PME with McAfee application Control

Multi-Browser Web Client

PME Web Client is Silverlight free!

- **NEW** HTML5 Alarm Viewer
- **NEW** Grid gadget replaces Tables application
- Use PME in you preferred internet browser
- Comply with IT policies that do not allow browser Plugins
- Access all web applications from tablets and other mobile devices



More IT Compliance

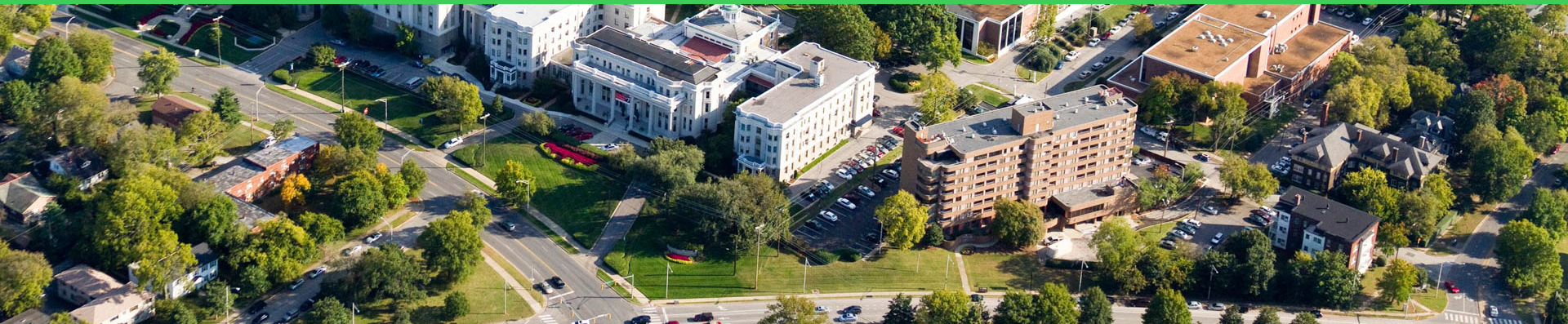
- SQL Server Windows Authentication Mode
 - Allow access to SQL Server in more secure mode
- TLS 1.2 Compliance
- Default self-signed certificates
- EWS FIPS (Federal Information Processing Standard) Compliance
 - Use of TLS 1.2 and SHA-256 for authentication
- Documented workaround for **non-Sysadmin** distributed PME installs!





Multi-Site Power Management Solution

Empower Users Without Compromising Security or Usability



Multi-Site Support

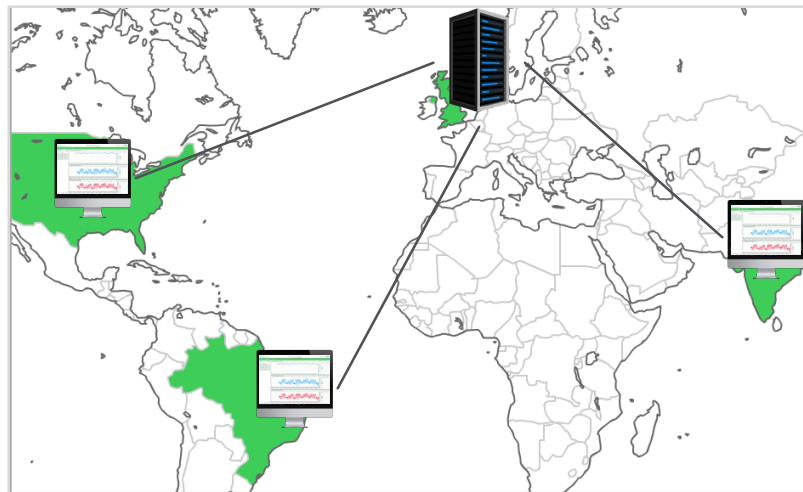
Localized Role Based Access Control



- “I manage multiple locations from one system, and I need to let local users view the data from their site without being overwhelmed by all the data from the other sites”



- For local users in a system connected to multiple sites, enables a user experience like having their own system
- Enables restriction of users to authorized sources and content based on their Group.
- Easy setup and administration.
- Simplifies user management with Active Directory integration.



User Groups



App Shared Library



Multi-Timezone

Multi-Site PME

Capabilities to enable new applications:

- Monitoring of multiple sites not big enough for a full system (**constrained to the device capacity of PME**)
- Virtualized IT environments (remote servers)
- System access to multiple internal/external stakeholders
- Serve different groups with a single system (maintenance vs operations)

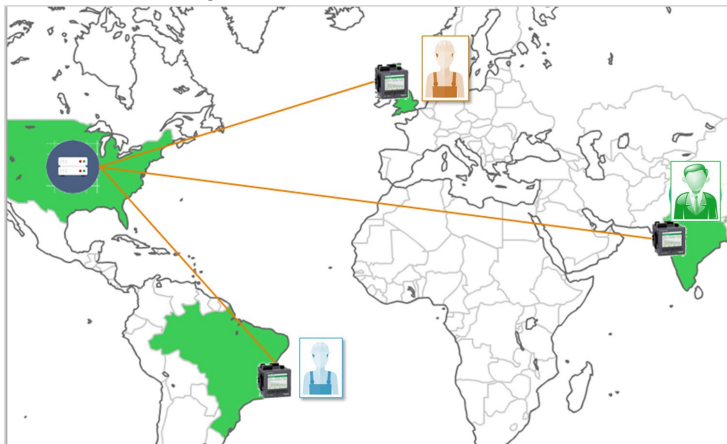
How?

- PME User Groups
- PME Web Apps Shared Library
- Multi-Time zone support



Role-Based Access Control (RBAC)

PME Groups



A user group is a set of users with access to the same list of devices/sources and the same shared web content.

- Users of a group can have private content (dashboards, diagrams, alarms and reports)
- Users can belong to multiple groups
- Users can be Windows or native PME
- PME groups are not required if content partitioning is not needed

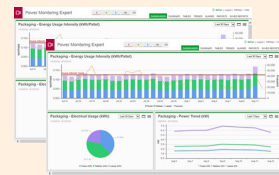
UK Facilities Team



Users



UK Devices



UK Content views

Brazil Facilities Team



Users



Brazil Devices



Brazil Content views

International Facilities Team



Users



All Devices



All Content views

PME Shared Library: Navigation

Dashboards

Common look and feel

Diagrams

Improved diagram navigation, faster and easier to find key diagrams

Trends

Common Create New, add Folder and Home button options

Alarms

Create nested folders and access settings using the same workflow

Reports

Visualize only content shared in/to your group and your private content

PME Shared Library: Configuration

Dashboards

Dashboard Settings

Search Dashboard Library...

< Back Demand Dashboard

Name

Demand Dashboard

Add Gadget...

Styling...

Public Private

Location

Home

Cancel Save

Diagrams

Diagram Settings

Search Diagram Library...

< Back test 2 *

Name

First Floor Diagram

Location

Energy Intensity Maps

Diagram

dgm-/diagrams/ud/DataCenter/KPIs/KP...

Cancel Save

Trends

Folder Settings

Search Trend Library...

< Back New Folder *

Name

New Folder

Location

Thermal Monitoring

Cancel Save

Alarms

View Settings

Search View Library...

< Back Active Alarms last 24H

View Name

Active Alarms last 24H

Location

Home

Public Private

View Type

Alarm Status Alarm History

Level of Detail

Incidents Alarms Events

Priority

Status

Active or Unacknowledged

Sources

All Sources

Categories

Power Quality

Power Availability

Cancel Save

Reports

Folder Settings

Search Trend Library...

< Back New Folder *

Name

New Folder

Location

Thermal Monitoring

Cancel Save

Multi Time Zone Support

PME 9.0 is aware of meter and client local time

- Ability to display data in meter time zone regardless of where the server is located
- Intuitive cross-site benchmarking
- No changes to how data is stored in database

App	PME 8.2 Displays	PME 9.0 Displays
Dashboards	Server Local	Source Local
Diagrams	Server Local	Source Local
Trends	Browser Local	Browser Local
Alarm Viewer	Server Local	• Browser Local for summary • Source local for details
Reports	• Server Local • UTC	• Browser Local default

A photograph of two young women with dark hair, smiling and looking towards the camera. They are positioned in the upper half of the frame. The woman on the left is wearing a grey hoodie and has a pearl bracelet on her left wrist. The woman on the right is wearing a black and white striped shirt. A solid green horizontal band is overlaid across the middle of the image, containing white text.

New and Improved Advanced Applications

The Ultimate Energy and Power Management System

PME 9.0 + ION9000



Power Events Analysis



Power Quality Performance



Power Quality compliance



Backup Power Testing



Utility Bill Verification



Energy Usage and Performance

- From microseconds to years of data analysis of your power network
- Verify compliance with most common PQ standards or customize to meet local regulations
- Device specific to system wide event analysis
- And much more...

Harmonic Compliance Report V2

IEEE519-2014

Simplify compliance verification regarding harmonic distortion levels using an internationally accepted standard.

- Pass/fail summary table with color indication for easy identification of threshold violations.
- Detailed tables and histograms for reporting period selected.
- IEEE519-2014 references IEC61000-4-15

Requirements: High end meters: ION9000, PM8000 and ION7400 (Firmware to be released with ION9000)

Short Term Current Distortion Compliance - 99th Percentile						
Isc/IL=40	Individual Harmonic Order (Odd)					TDD (%)
Ratio Window Limit (20-50)	<11	11<=h<17	17<=h<23	23<=h<35	35<=h<=50	
IEEE 519 Limit (%)	10.5	5.3	3.8	1.5	0.8	12.0
Non-compliant 10-minute Weeks	2					1
Total Days	20					
%Days out of Compliance	10.00%					5.00%
Recommendation	WARNING					PASS
Short Term Current Distortion Non Compliant Weeks - 99th Percentile						
Date	Individual Harmonic			TDD - Limit		12.0%
Jan 15 2018	98.99%			99.90%		
Feb 5 2018	99.30%			94.50%		
Mar 28 2018	96.37%			93.40%		
Short Term Current Distortion Compliance - 95th Percentile						
Isc/IL=40	Individual Harmonic Order (Odd)					TDD (%)
Ratio Window Limit (20-50)	<11	11<=h<17	17<=h<23	23<=h<35	35<=h<=50	
IEEE 519 Limit (%)	7.0	3.5	2.5	1.0	0.5	8.0
Non-compliant 10-minute Weeks	1					1
Total Days	20					
%Days out of Compliance	5.00%					5.00%
Recommendation	PASS					PASS
Short Term Current Distortion Non Compliant Weeks - 95th Percentile						
Date	Individual Harmonic			TDD - Limit		8.0%
Mar 28 2018	91.20%			90.10%		

Energy Analysis & Performance

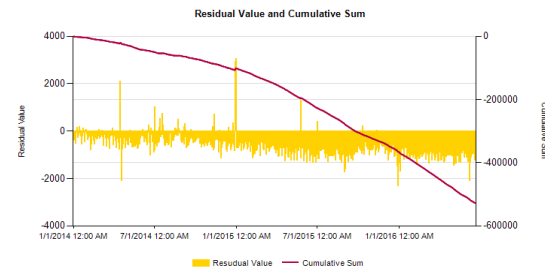
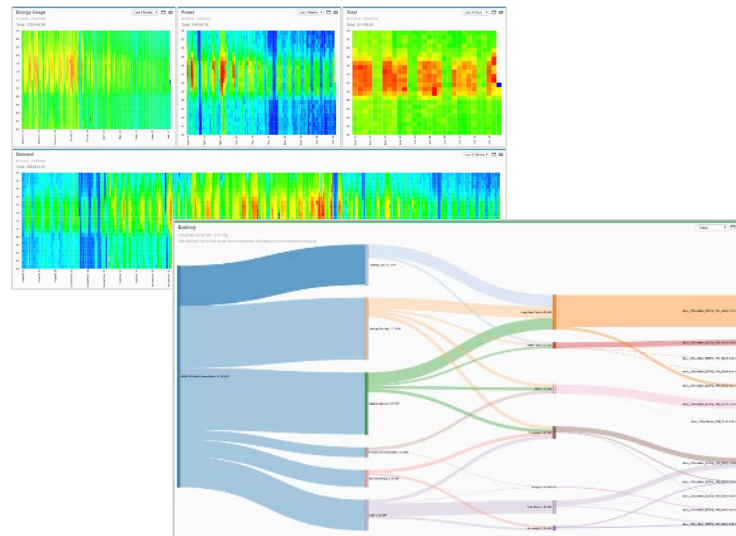
Powerful Energy Management Tools



- “I want to analyze energy usage and performance indicators for my facility or building against a baseline and monitor and verify systematic improvement initiatives like ISO50001”



- Understand better what influences your energy usage
- Create energy usage models and compare actual consumption against expected
- Accurately measure energy savings in the presence of changing variables like weather or production.
- Track KPIs such as Energy Intensity (kWh/unit) or Coefficient of Performance (COP)



Energy Analysis Module



Advanced Usage Analysis
Gadgets



Smart Setpoints and
Scheduled alarms

Energy Analysis Module

Improve operational efficiency, energy performance and compliance (ISO50001) with **new** and **improved** functionality:

- Energy modelling
- KPI/EnPI calculation and tracking as per ISO50006 requirements

KPI: Key Performance Indicator

EnPI: Energy Performance Indicators

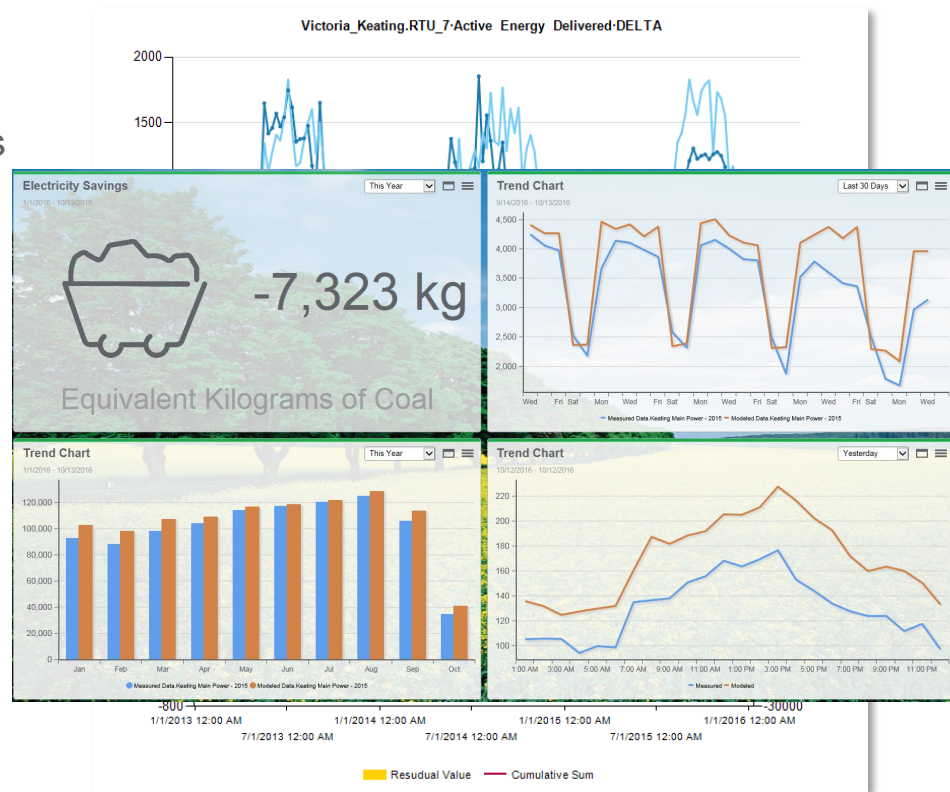
ISO 50006:2014: Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI)



Energy Modelling

Understand better the influence of external factors and schedules on energy usage.

- Meet ISO50001 and SEP standards requirements for baselining and tracking energy performance
- Quantify **savings or losses** caused by any system/behavior change
- Get **notified** if usage is **outside expected values** as per model
- **Forecast** power/energy usage



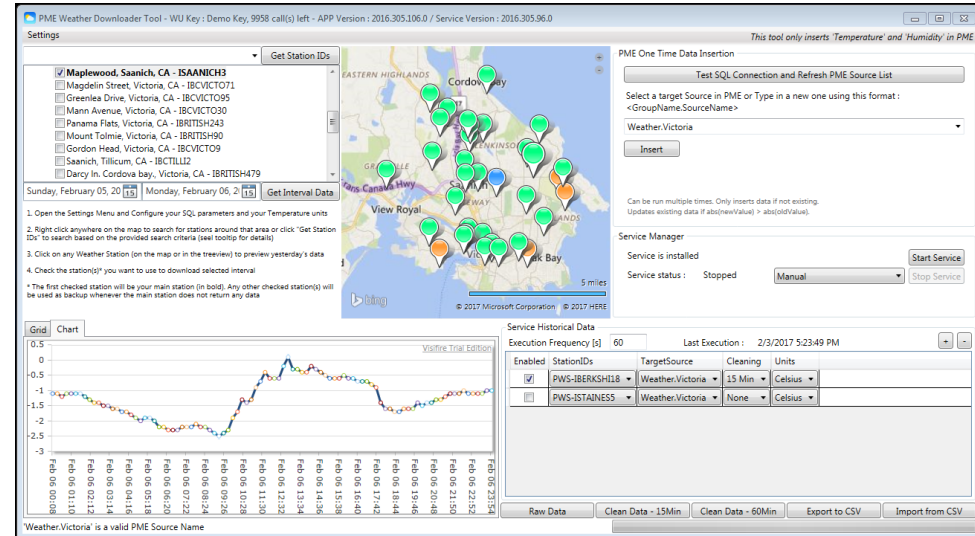
SEP: Superior Energy Performance (US Department of Energy)

Weather Data Import Tool

Reminder!

PME Weather Data Import Tool allows you to fetch weather data (historical and forecast) from www.wunderground.com for virtually any place in the world and:

- **Key for energy modelling and normalization applications**
- Insert that data in PME as a one shot activity (for a database backfill for example)
- Create a Service that will run automatically to fill in PME database as time passes
- Export that data to CSV
- FREE!

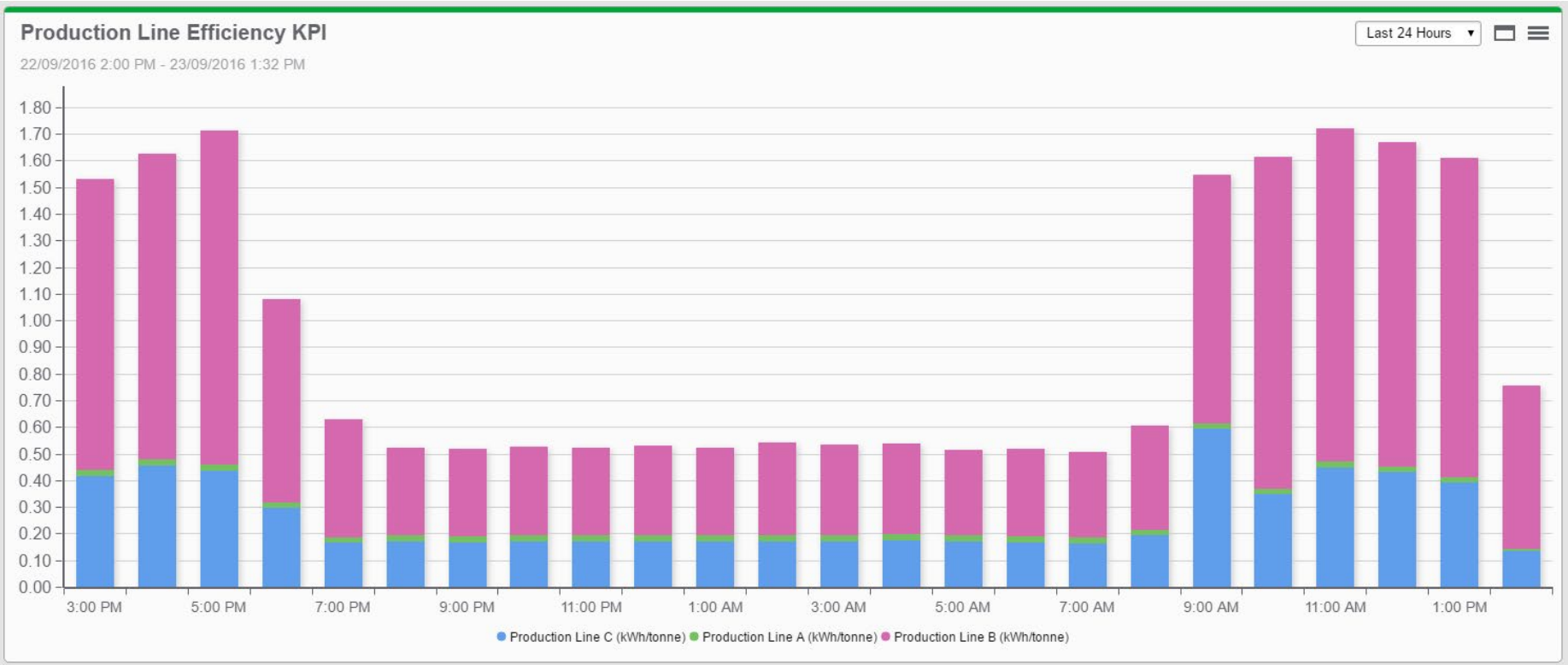


[Download Link](#)

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KPI Engine



KPI Engine (Cont.)

KPI examples:

- Production kWh / kg, €/ kg, kWh/Ton, kWh/Unit
- Carbon footprint: kg of CO2 / Ton, kg of CO2 / m3
- Pumps efficiency: kWh / m3 of water pumped
- Blowers efficiency: kWh / kNm3 of air forced

PME Data import options:

- ETL (CSV, OLEDB, WW Historian, EBO)
- OPC
- XML
- Meter or PLC I/Os
- NEW! Manual Data Editor

Process Data



Wonderware
Historian

Ecostruxure
Innovation At Every Level

Building



3rd party



Ecostruxure
Power Monitoring Expert
v9.0



Energy/WAGES Data

Alarm Configuration

- PC based Alarm Configuration web interface aligned with the rest of the PME apps
- 24 alarm rule templates to quickly create the most common type of alarms
- Rule template categories aligned and consistent with the Smart Alarm viewer alarm categorization

	Air Consumption Compare recent datalog consumption data against a fixed setpoint. Creates Air Alarms.
	Air Consumption (Smart Setpoint) Compare recent datalog consumption data against a relative setpoint. Creates Air Alarms.
	Electricity Consumption Compare recent datalog consumption data against a fixed setpoint. Creates Electricity Alarms.
	Electricity Consumption (Smart Setpoint) Compare recent datalog consumption data against a relative setpoint. Creates Electricity Alarms.

PME 9.0 Turns Historical Data into Insights

Smart Setpoints

Is my current energy usage typical for this hour of the day and this day of the week based on my last 6 months usage?

I need to be notified if my current demand is higher than the demand values in the last 6 months

Is my current harmonic distortion 5% higher than my average in the last week?

Notify me when my daily water usage is 20% higher than the average for the last 3 weeks

Smart Setpoints

Setpoints Based on Usage Analytics

Monitor values being logged in the database (raw of aggregated) and alarm on exception rules and time based comparisons

- Raw data (datalog values, 15 min, 10min, etc)
- Aggregate hourly or daily
- Over/Under Active conditions vs Average, Maximum or Std deviation (σ)
- Comparison range for up to 2 years back
- Evaluate for all values or same hour of day and/or same day of week



Electricity Consumption (Smart Setpoint)
Compare recent datalog consumption data against a relative setpoint.
Creates Electricity Alarms.

Edit Smart Setpoint

Smart Setpoint Type

Highest Value in last 30 days	Abnormally High Value
Lowest Value in last 30 Days	Abnormally Low Value
Highest Value in last Year	Abnormally High Value for similar time of day
Daily Value higher than 50% above Average	Abnormally High Value for the day of week
User Defined	

Setpoint Parameters

Type and Interval

Aggregated

Hourly

Alarm Active When

Over

2.66

×

Standard Deviations from Mean (σ)

Comparison Range

6

Months

Comparison Filter

Same Day of Week and Hour of Day

Cancel

Apply

Alarm Schedules

- Part of the workflow to configure software based alarms
- Schedules define when software based Alarm rules are active or inactive
- Define active or inactive hours per day
- Apply multiple schedules to an Alarm Rule

Edit Alarm Rule

Alarm Template | Measurements | Details | Sources | **Schedule** | Summary

Select Alarm Schedule

Week Days ▼ [Edit Schedule](#) [Add Schedule](#)

A schedule defines when an enabled Alarm Rule can enter the Active Condition.

Schedules are applied in the timezone of each source. If an Alarm Rule has sources from different timezones, then it is possible for a schedule to be active for some sources, while inactive for others at a given point in time.

If an Alarm is in the Active Condition when a schedule transitions to inactive then the Alarm will be deactivated.

Realtime and Communication Status alarms input conditions will only be evaluated during the Active portion of the schedule.

Datalog alarm inputs will be evaluated against the schedule to ensure that a given reading represents data from within the Active portion of the schedule. Datalog alarm inputs are considered to be 'Interval Ending', implying that they represent a reading for the previous time interval.

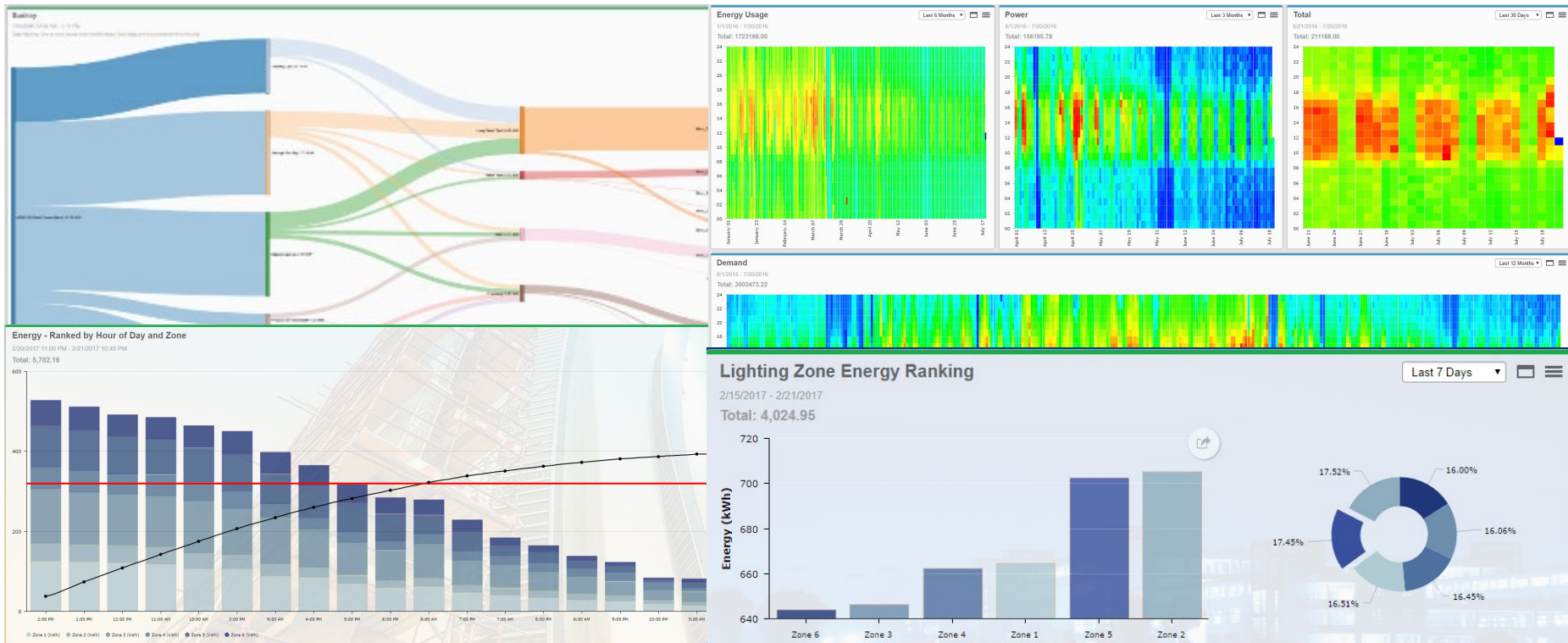
Example:

- Using a schedule that goes Active at 3:00pm, a data input from exactly 3:00pm will not be considered part of the Active schedule.
- Using a schedule that goes Inactive at 5:00pm, a data input from exactly 5:00pm will not be considered part of the Inactive schedule

[Cancel](#) [Save](#)

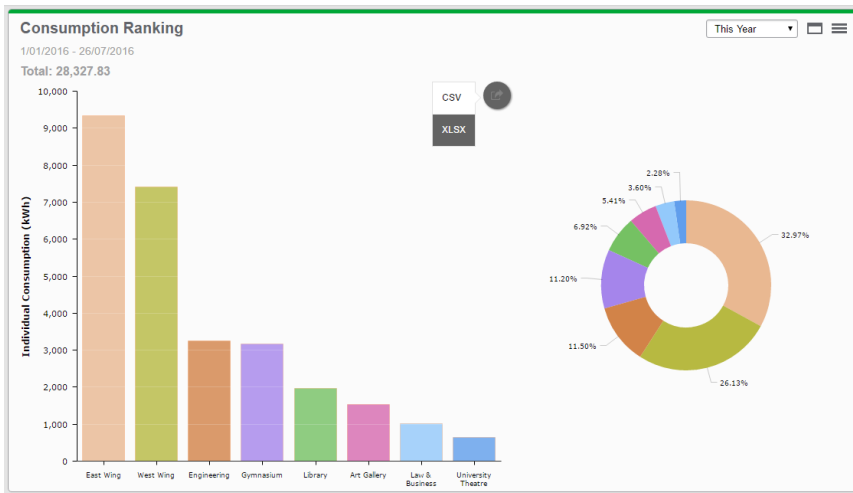
Usage Analysis Dashboard Module

6 New Gadgets!, Single Licence, Easy Supply Chain



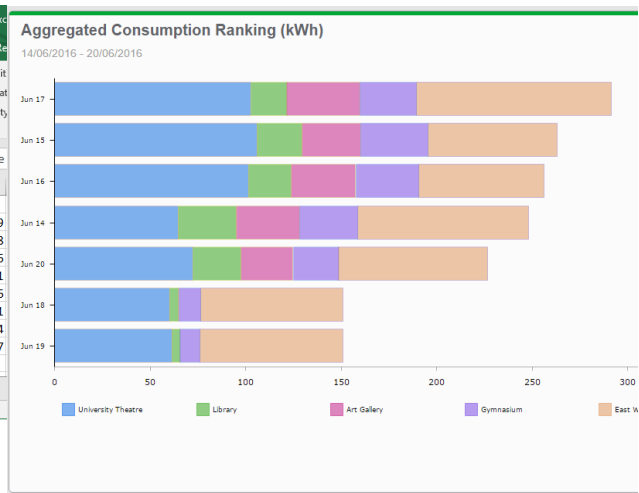
Consumption Ranking & Aggregated Consumption Ranking

Build energy awareness through normalization and ranking – easy to read and understand



amCharts (3).xlsx - Excel

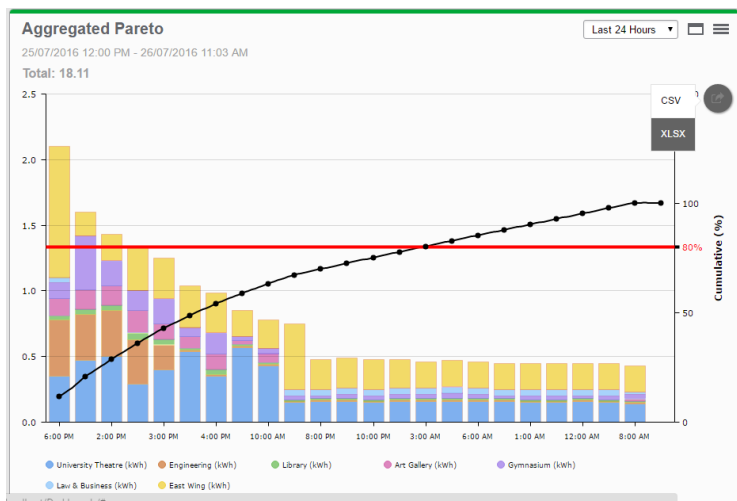
Source	Value
East Wing	9339
West Wing	7402.88
Engineering	3258.46
Gymnasium	3171.61
Library	1960.16
Art Gallery	1531.21
Law & Business	1019.94
University Theatre	644.57



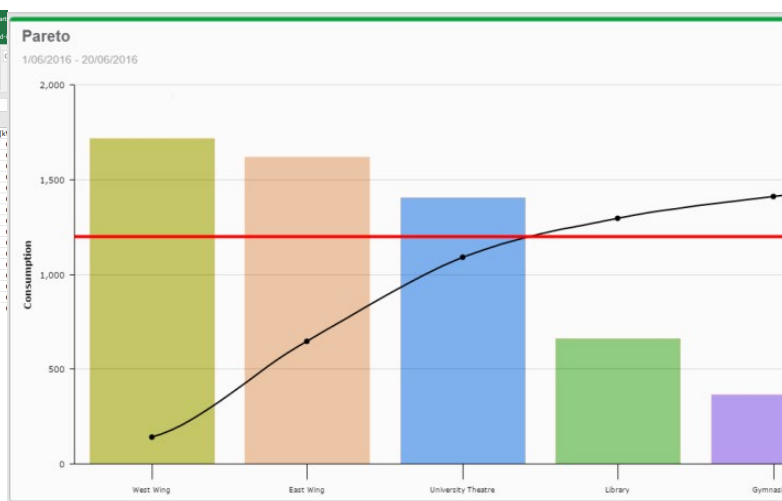
- Create a competitive environment with dynamic rankings
- Normalization to facilitate fairer comparisons
- Relative visualization
- One-click export to excel

Pareto & Aggregated Pareto

The Pareto principle is also known as the 80–20 rule, quickly see where your biggest issues are



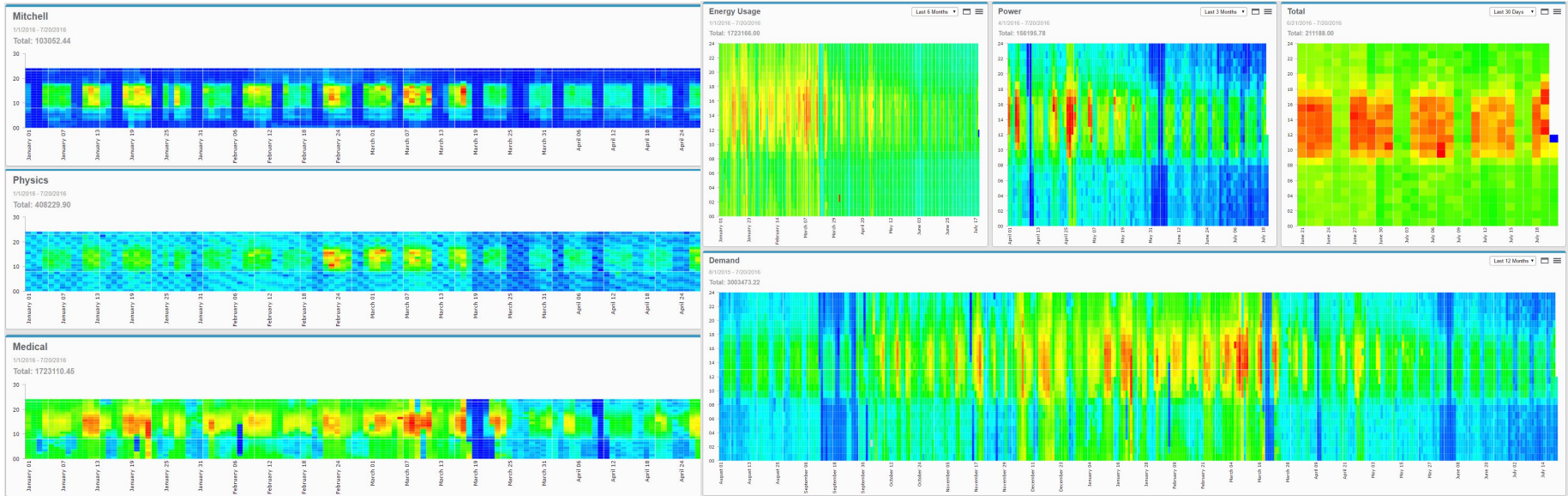
Name	Cumulative (%)	University Theatre (kWh)	Engineering (kWh)	Library (kWh)
1				
2	6.00 PM	11.67	0.35	0.43
3	1:00 PM	20.54	0.47	0.35
4	2:00 PM	28.5	0.5	0.35
5	5:00 PM	35.86	0.29	0.34
6	3:00 PM	42.8	0.4	0.19
7	11:00 AM	48.53	0.54	0.01
8	4:00 PM	53.95	0.35	0.01
9	9:00 AM	58.71	0.57	0.01
10	10:00 AM	63.06	0.43	0.01
11	7:00 PM	67.16	0.15	0.01
12	8:00 PM	69.81	0.16	0.01
13	9:00 PM	72.45	0.16	0.01
14	10:00 PM	75.08	0.15	0.01
15	11:00 PM	77.64	0.16	0.01
16	1:00 AM	80.2	0.16	0.01
17	4:00 AM	82.72	0.16	0.01



- Roughly 80% of the effects come from 20% of the causes
- Develop timely solutions to energy management/performance
- Powerful method of assessing your facility
- One-click export to excel

Heat Map/Carpet Plot

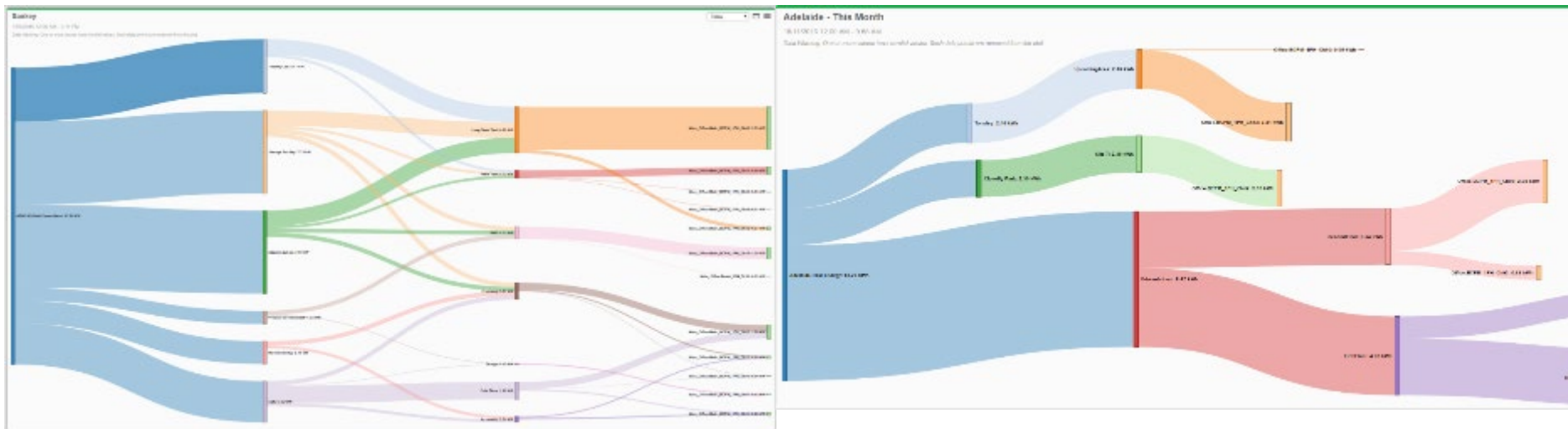
Intuitive graphical visualization of your energy use



- Quickly and easily identify anomalies
- Optionally exclude data gaps and spikes/outliers to focus on the true trends
- One-click export to excel

Sankey Diagram

Clearly visualize energy flows, distribution, and losses



- Super easy to setup - automatically generated from hierarchies
- Meet ISO50001/2 requirements, full WAGES support
- Interactive gadget - hover over, move nodes, one-click export to excel

Equipment Monitoring & Performance

Insights on your Electrical Distribution Equipment



- “I want to keep track of key operational parameters for electrical equipment. Be notified of configuration changes, lifespan reduction, or risk/safety hazards”



- Ensuring proper breaker operation and fault isolation avoiding safety hazards
- Detecting abnormal conditions (e.g Temperature) that represent a risk to operations.
- Operate breakers remotely to minimize exposure to arc-flash risk
- Monitor and locate circuit insulation faults (e.g protect patient safety during operations)

Generator_Switch1		
HC.Gen MAIN Bkr		
● Breaker Aging:	22.5	%
● Electrical Wear:	90.0	%
HC.Gen 1 Bkr		
● Breaker Aging:	16.8	%
● Electrical Wear:	68.0	%
HC.Gen 2 Bkr		
● Breaker Aging:	13.7	%
● Electrical Wear:	5.4	%

Hospitals Line Insulation Monitoring System

OR Room 1 Details - Page 1

OR_Panel01:		No Test In Progress
Status:	Hazard	
● Total Hazard Current:	..	7.80 mA
● Load:	...	71.00 %
Volts L1 - L2:	...	120.20 V
Volts L1 - Ground:	...	70.71 V
Volts L2 - Ground:	...	70.71 V
Impedance:	28.00 kOhm	
Resistance:	28.00 kOhm	
Leakage Cap:	...	8.00 nF
Temperature:	Normal	

Circuit Fault Location

EDS151_1 1	EDS151_1 2	EDS151_1 3
EDS151_1 4	EDS151_1 5	EDS151_1 6
EDS151_2 1	EDS151_2 2	EDS151_2 3
EDS151_2 4	EDS151_2 5	EDS151_2 6



Breaker Performance Module



Backup Power Module



Condition Monitoring

Breaker Performance Module

Improve safety and power availability with condition based maintenance.
New benefits:

- Breaker protection settings Monitoring
- Breaker aging now supports Micrologic X (MTZ)



Breaker Settings Monitoring

Facility wide breaker protection settings monitoring

- Document breaker settings post-commissioning with a quick report
- Check for protection settings change in a period of time
- Get notified when settings are modified or check settings after a circuit breaker trips

Note: Only Schneider Electric low voltage breakers are supported



Circuit Breaker Trip Curve Settings

Circuit Breaker Trip Curve Settings

Device Name	Protection Type	Long Time			Short Time			Instantaneous			Ground Fault	
		Pickup (A)	Delay (s)	I _{2t}	Pickup (A)	Delay (s)	I _{2t}	Pickup (A)	Delay (s)	I _{2t}	Pickup (A)	Delay (s)
Victoria_Keating.main_7650	5.62A	16	5	2.5	12	1.2	1.5	9.5	0.05	1.25	0.1	0.75
BreakerAging NSXA	5.62A	16	5	2.5	12	1.2	1.5	10.5	0.05	1.25	0.1	0.75
Test.micrologicP	5.62A	14	5	2.5	11	1.2	1.4	9	0.04	1.20	0.1	0.75
Test.micrologicH	5.62A	14	5	2.5	11	1.2	1.4	9	0.04	1.20	0.1	0.75
Test.compactNsxA	5.62A	12	4	2.0	10	1.2	1.2	8	0.03	1.15	0.1	0.75
Test.compactNsxE	5.62A	12	4	2.0	10	1.2	1.2	8	0.03	1.15	0.1	0.75

Generated on: 1/31/2018 3:18:26 PM

Page 3 of 5

MTZ Breaker Aging Support



MTZ joins the extensive list of supported LV Breakers in PME and in the Breaker Performance module

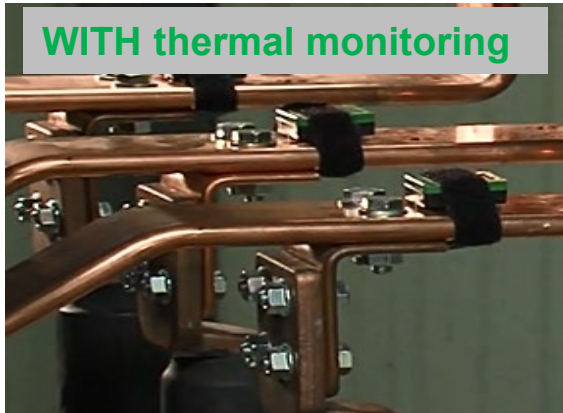
Market	Circuit Breaker Range	Control Unit Range
IEC	• Masterpact NT • Masterpact NW • Compact NS630b-3200	• Micrologic 2 A/E • Micrologic 5 A/E/P/H • Micrologic 6 A/E/P/H • Micrologic 7 A/P/H
	Compact NSX	• Micrologic 5 A/E • Micrologic 6 A/E-M
China	Compact NS630b-1600	• Micrologic 2 A • Micrologic 5 A • Micrologic 6 A
	Masterpact MT	• Micrologic 2 A • Micrologic 5 A/E/D/P/H • Micrologic 6 A/E/D/P/H • Micrologic 7 A/P/H
	PowerPact H-, J-, D-Frame	• Micrologic 2 A • Micrologic 5 A/E/D/P/H • Micrologic 6 A/E/D/P/H • Micrologic 7 A/P/H
USA	• Masterpact NT • Masterpact NW • Compact NS630b-3200 • PowerPact P-, and R-Frame	• Micrologic 2 A • Micrologic 3 A • Micrologic 5 A/P/H • Micrologic 6 A/P/H
	PowerPact H-, J-, and L-Frame	• Micrologic 2 A • Micrologic 3 A • Micrologic 5 A/P/H • Micrologic 6 A/P/H

Breakers Supported with Breaker Performance Module in PME 8.2

Continuous Thermal Monitoring

22% of fires in a facility are due to electrical failures

WITH thermal monitoring



WITHOUT thermal monitoring



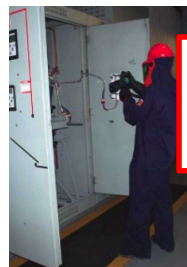
As busbar joints degrade, they can overheat and cause a fire risk.

Avoid electrical fires by **detecting and alarming on abnormal temperature** rise in electrical distribution equipment.

24/7 continuous monitoring in MV and LV equipment to provide early detection of abnormal temperature rises.

Reduce total cost of ownership by 60% throughout the lifecycle by reducing periodic thermography.

Wireless, self-powered sensors (no batteries) can be deployed anywhere, including in areas that are difficult to see with a thermal camera



Reduce recurring manual thermal imaging costs

Life Is On

Schneider
Electric

PME Support for Continuous Thermal Monitoring

Benefits:

- Early detection of thermal run away. Eliminates the need for periodic thermography
- Optimizes operations with condition based maintenance
- Alarming and historical analysis for detection of slow deterioration
- Plot against and correlate to other electrical parameters (e.g Harmonics)

Included with PME 9.0:

- SMD (M251) Device type (PLC comes pre-programmed from factory)
- Preconfigured Vista Diagrams for MV Cubicles and Transformers

SMD: Substation Monitoring Device



Dashboard Report: Custom Reports Made Easy

Turn any PME Dashboard into a report

- Schedule and subscribe in any of the existing report formats (pdf, landscape/portrait, Excel, tiff)
- Two Reports, Landscape & Portrait
- Allows for multi dashboard/slideshow selection, each selection is on its own page
- Allows for an additional custom page where any link can be entered



PME Report Customization Reminder

PME reports help our customers better understand their electrical network. Sometimes these reports require further customization, which can be divided into three levels, or "tiers":

- **Tier 1:** Basic report customization. Colors, logo, toggle on/off report components, target lines, **Dashboard Report**. **End Users, EcoXperts, SE teams**
- **Tier 2:** Advanced report customization. Modify the format/layout of existing report templates, create new basic ones. Excel and Power BI integration. **EcoXperts, SE teams**
- **Tier 3:** Expert custom report creation. Create completely new reports with existing and new view providers (data sets). **RDK no longer supported. EcoXperts, SE teams SW devs**



More information can be found [HERE](#)

Grid Gadget

- Real time tables functionality embedded in Dashboards
- **Hierarchy support!**
- Default Templates for quick selection
- Configurable row/column headers (Sources or Measurements)
- Improved diagnostic information:
 - Disabled, Comm Error, Measurement not supported, Stale, etc.
- Supports numbers, Boolean, date/time and strings.

Grid Gadget  

Last Update: 11/20/2017 10:39:12 AM Update in 0:07

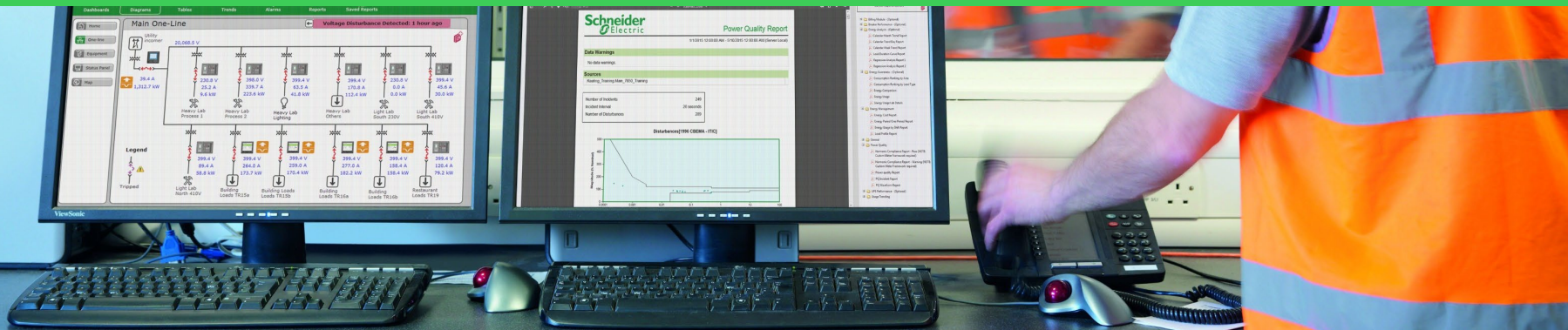
Sources ▾	Voltage A-B (V) ▾	Current A (A) ▾	Real Power (k... ▾	Power Factor ▾
Substation1.feeder_2	0	8	2	74.7
Substation1.Main_Feeder	0	8	2	-87.3
Substation1.Main_Meter	0	83	22	-87.3

Grid Gadget  

Last Update: 11/20/2017 10:41:03 AM Update in 0:04

Measurements ▾	Substation1.feeder_2 ▾	Substation1.Main_Feeder ▾	Substation1.Main_Meter ▾
Voltage A-B (V)	0	0	0
Current A (A)	8	8	83
Real Power (kW)	2	2	22
Power Factor	74.8	-87.3	-87.4

Engineering Tools For the End Users and Channel



Technical Documentation 2.0

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: PME System Guide**

One master guide to rule them all...



PME documentation before 9.0

Deployment in just 10 minutes

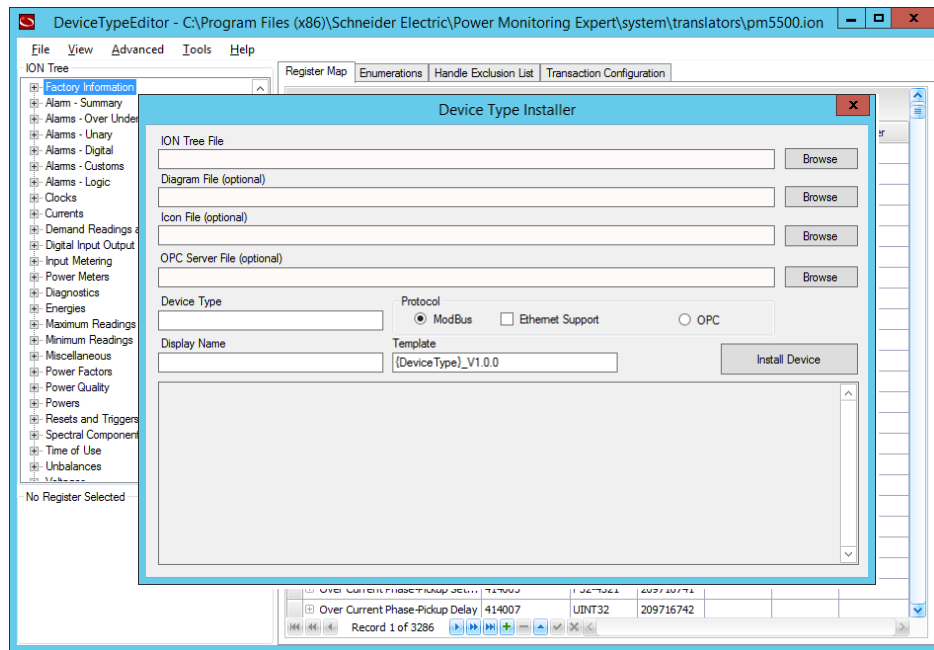
- All required components deployed during installation
- No need to access SQL or even open Designer
- New support for multi-sites
- Just copy paste the objects to your one-line diagram
- No licence required



Device Type Editor

Device Type Editor (DTE) replaces the Modbus Device Importer (MDI) and simplifies the creation of third party Modbus and **OPC** devices:

- Pre-populated measurement tree, avoid custom measurement issues
- **Copy/paste** from **Excel**
- Modbus and **OPC** device types
- Calculation and logging
- Backwards compatible (MDI files)
- Opens any translator file (Native and custom)
- Configure OPC tags to be exposed
- Includes Device Type Installer



Manual Data Editor

Edit/Insert/Delete PME data without SQL

Editor

Load Data Pending Changes Previous Next Save all Changes

Result Information

Time range: 7/1/2016 12:00:00 AM to 7/2/2016 12:00:00 AM [[UTC-08:00] Pacific Time (US_Canada)]

Data Quality Results: Report 2 Issues Detected Previous Next Smart Gap Fill...

Timestamp (UTC)	Timestamp (UTC-8:00)	Victoria_Keating_main_7650 - Real Energy (kWh)
7/1/2016 7:15 AM	7/1/2016 12:15 AM	1,093,663.50000
7/1/2016 7:30 AM	7/1/2016 12:30 AM	1,093,720.87500
7/1/2016 7:45 AM	7/1/2016 12:45 AM	1,093,776.87500
7/1/2016 7:59 AM	7/1/2016 12:59 AM	1,093,832.62500
7/1/2016 8:00 AM	7/1/2016 1:00 AM	<no data>
7/1/2016 8:15 AM	7/1/2016 1:15 AM	1,093,888.75000
7/1/2016 8:30 AM	7/1/2016 1:30 AM	1,093,945.50000
7/1/2016 8:45 AM	7/1/2016 1:45 AM	1,094,000.12500
7/1/2016 9:00 AM	7/1/2016 2:00 AM	<no data>
7/1/2016 9:15 AM	7/1/2016 2:15 AM	<no data>
7/1/2016 9:30 AM	7/1/2016 2:30 AM	<no data>
7/1/2016 9:45 AM	7/1/2016 2:45 AM	1,094,220.37500
7/1/2016 10:00 AM	7/1/2016 3:00 AM	1,094,275.75000
7/1/2016 10:15 AM	7/1/2016 3:15 AM	1,094,331.00000
7/1/2016 10:30 AM	7/1/2016 3:30 AM	1,094,389.25000
7/1/2016 10:45 AM	7/1/2016 3:45 AM	1,094,447.50000
7/1/2016 11:00 AM	7/1/2016 4:00 AM	1,094,508.
7/1/2016 11:15 AM	7/1/2016 4:15 AM	1,094,570.
7/1/2016 11:30 AM	7/1/2016 4:30 AM	1,094,632
7/1/2016 11:45 AM	7/1/2016 4:45 AM	1,094,692.
7/1/2016 12:00 PM	7/1/2016 5:00 AM	1,094,752
7/1/2016 12:15 PM	7/1/2016 5:15 AM	1,094,810.

Logged Value No Data Null Value Changed Value Jitter Timestamp

- Revert Value(s) Ctrl+Z
- Set Value(s) to NULL Ctrl+O
- Delete Value(s) Del
- Copy Cell Value(s) Ctrl+C
- Paste Cell Value(s) Ctrl+V
- View Log Ctrl+L
- Interpolate
- Smart Gap Filling...

Load Data

Data Available Sources BreakerAging NSXA

Time Range Start (start of day) Wednesday, November 29, 2017

Data Quality Report

Victoria_Keating_main_7650 - Apparent Energy (kVAh)

No Data found for the timerange

Victoria_Keating_main_7650 - Reactive Energy (kVAh)

Jitter - 7/1/2016 12:40 AM
Gap - 7/1/2016 3:15 AM to 7/1/2016 7:00 AM [Interval = 00:15:00]
Gap - 7/1/2016 2:45 PM to 7/1/2016 6:15 PM [Interval = 00:15:00]

Victoria_Keating_main_7650 - Real Energy (kWh)

Jitter - 7/1/2016 12:59 AM
Gap - 7/1/2016 2:00 AM to 7/1/2016 2:45 AM [Interval = 00:15:00]

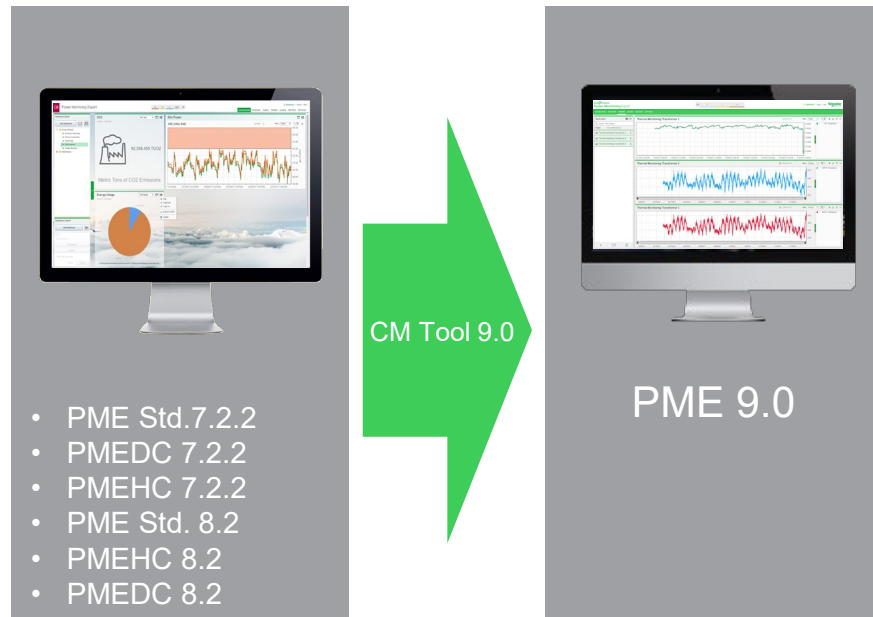
Close

Constant Value 0

Fill Gaps Close

Configuration Management Tool 9.0

- Upgrades, migrations and system backups
- Support for N-2 versions (latest build)
- Same architecture only: Standalone -> Standalone or Distributed -> Distributed
- Same language (English->English, Español->Español,etc)
- Systems that fall outside of the tool support might be upgradable manually.
- CM Tool 9.0 can read/write archives created with CM Tool 2.0.1

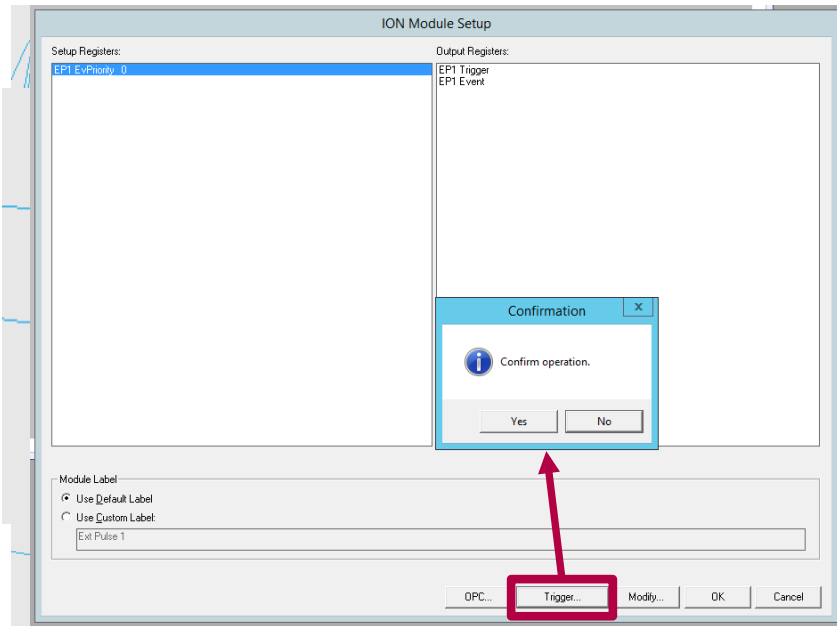


Designer Reloaded!

To Match the Power of ION9000

ION Programming Productivity Improvements:

- New look and feel, new module icons, new module connections (Bezier Curves), module offline/online indication
- HS (burst data) config indication
- Fast framework download. Download complete frameworks as fast as ION Setup
- Trigger External Pulse/Boolean/Numeric from Designer. No more switching to Vista
- Larger ION Module configuration windows
- Framework Diagram selection Option



DSP Cloud Connector

One click connection to Schneider Electric Digital Services Platform

- Serve data automatically to Power Advisor (Coming Soon)
- Streamlines Power Advisor data collection
- Enables connection to other SE Digital Services
- Opt out during installation to disable. Enable/disable anytime from Web Client Settings

DSP Cloud (Azure)



Advisory Services



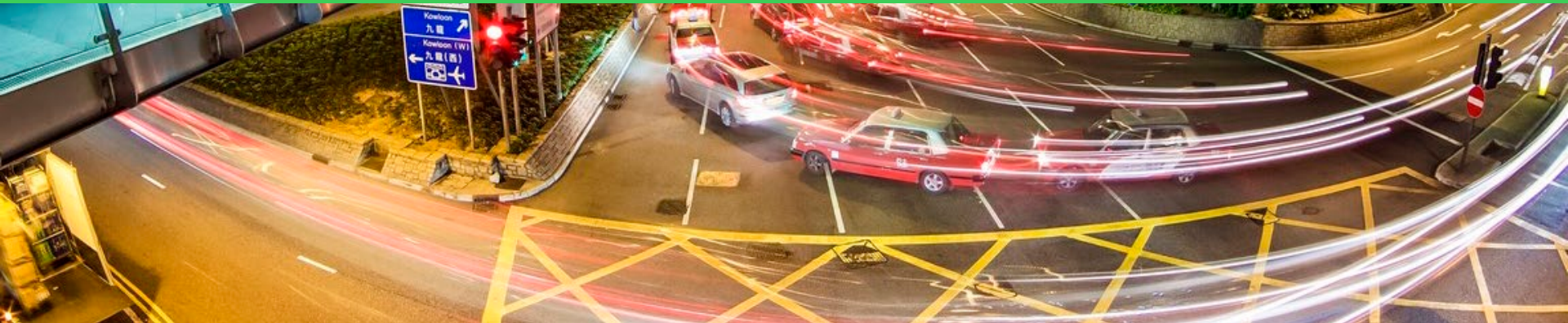
PME





Software and Hardware Support

New Devices, OS/SQL and Server Requirements



PME 9.0 New Native Device Drivers

Unparalleled out of the box functionality:

- ION9000
- PM8000V2 with ION over Modbus support
- MTZ Wave 2 (support for breaker aging)
- EM4900
- PowerTag
- AccuSine PCSN
- IFL
- Galaxy VM/VX
- SmartLink IPZ
- Compact NSXm
- Com'X WAGES

Plus all the updated drivers released as driver packs



PME 9.0 Software Support Matrix

Windows Operating Systems

- Windows 7 Professional
- Windows 10 Professional/Enterprise
- Windows Server 2012 Standard
- Windows Server 2012 R2 Standard/Enterprise
- Windows Server 2016 Standard

SQL Server editions

- SQL Server 2012 Express/Standard/Enterprise/Business Intel.,SP2
- SQL Server 2014 Express/Standard/Enterprise/Business Intel.
- **SQL Server 2016 Express**/Standard/Enterprise/Business Inte.
- SQL Server 2017 Express/Standard/Enterprise/Business Inte.

Browsers:

- IE11, Edge, Firefox, Chrome, Safari, Opera

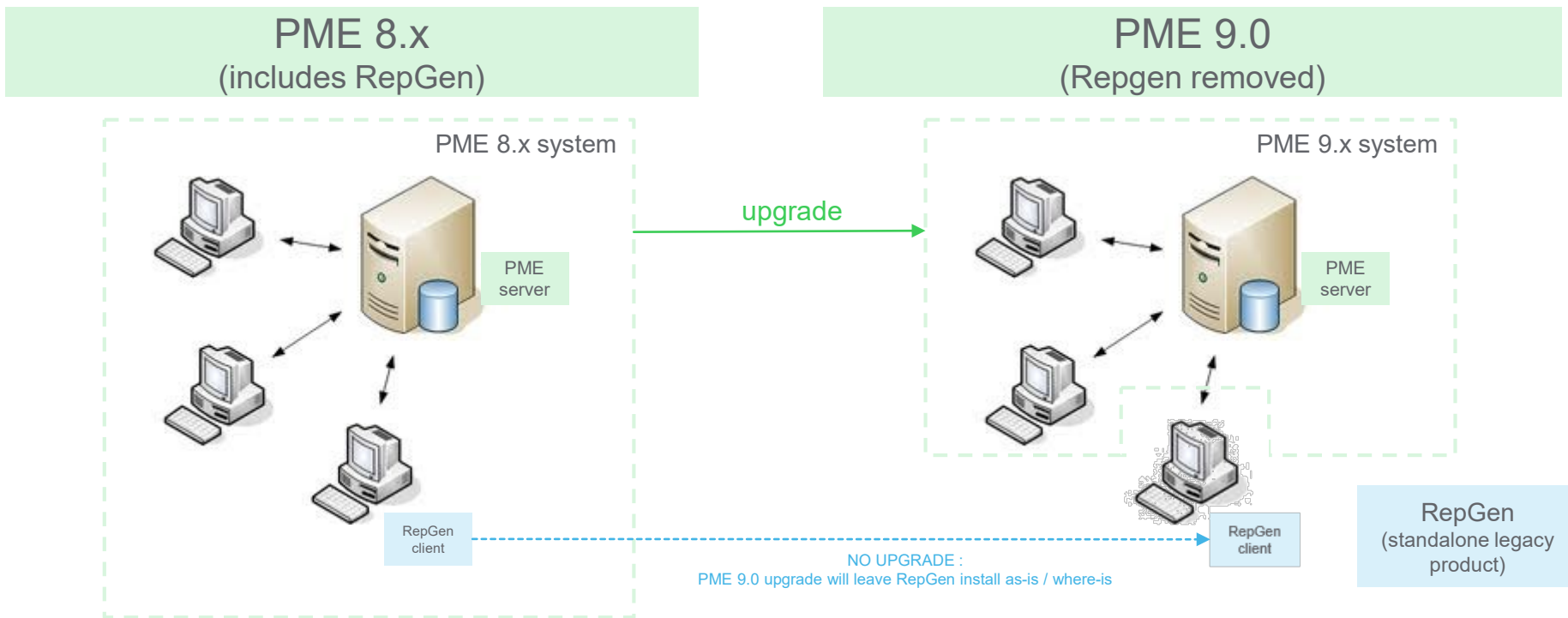
Office

- Excel 2013, 2016 and 365



Repgen Obsolescence

Not installed with PME 9.0 – Maintained on Upgrades from Legacy Systems



Repgen Obsolescence

Existing customers will be responsible to maintain Repgen.

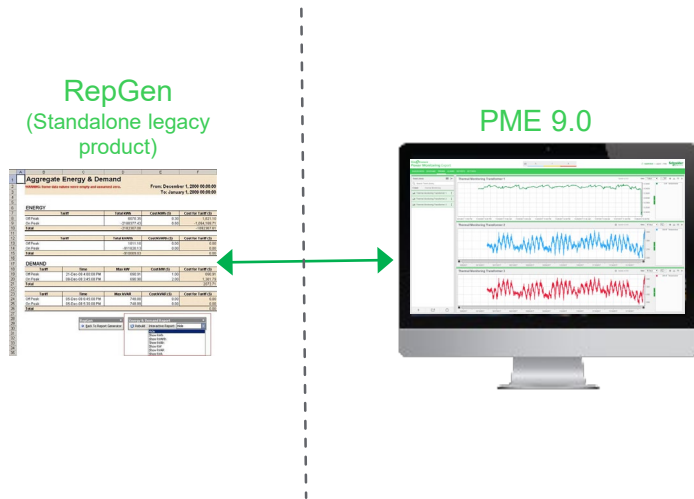
As of PME 9.0, Repgen will be removed from PME

- Repgen will not be included in new installs
- Repgen will be removed from all documentation and training
- Support will be for legacy versions, on an as-is basis: no bug fixes, no security patches, etc. Troubleshooting and self-help (KB articles) only.

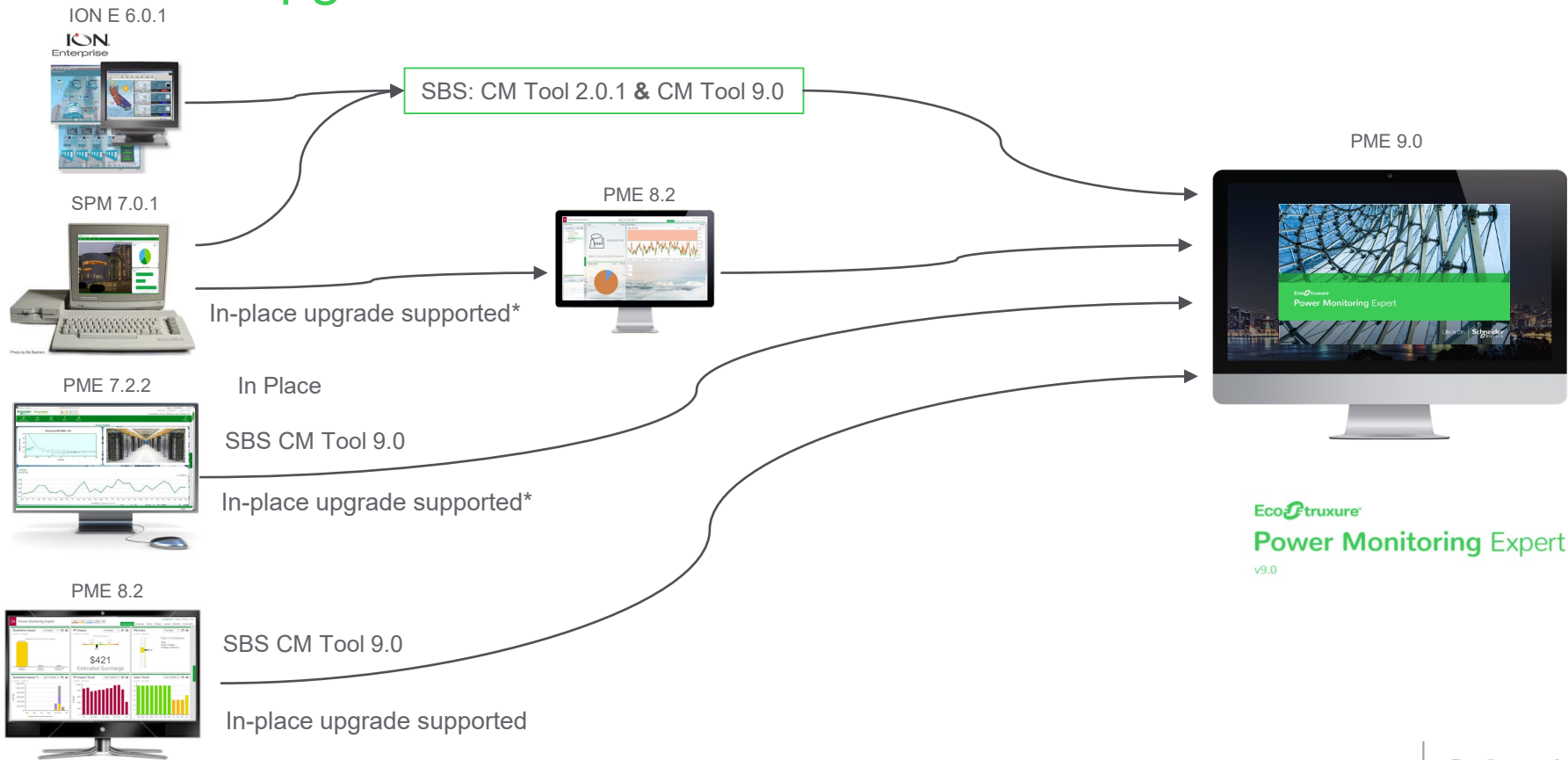
Upgrades to PME 9.0 will leave Repgen in-place

- Independent of PME
- Compatibility will be maintained with PME database.

Customers who wish to use Repgen will be responsible to keep Repgen client running, including the machine where Repgen is installed, and the Windows and Excel versions that support Repgen.



PME 9.0 Upgrade Paths



- Check your OS and SQL compatibility and support
- SBS: Side by Side Upgrade (server migration)

Life Is On

