Electrical Asset Life Cycle Management (NEMA)

Streamline Electrical Asset Life Cycle Management to Improve Preventative Maintenance

EcoStruxure Power Digital Application

0100DB2308
12/2023

EcoStruxure™ Power

www.se.com

Schneider Electric™

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Overview

Context of Application

Traditional methods for managing maintenance of electrical assets such as medium and low voltage switchboards, circuit breakers, busway, and transformers can be cumbersome, complex, and time-consuming. Large amounts of documentation to store and manage as well as asset maintenance schedules (especially in large electrical networks) can lead to unexpected failures and costly unplanned downtime if not properly managed. Digital asset tracking can help facility maintenance teams improve maintenance effectiveness and efficiency.

Problem to Solve

The facility and maintenance manager needs to:

- Have electrical asset documentation readily available.
- Improve the effectiveness of maintenance teams to manage and assign tasks for electrical asset maintenance routines.
- Increase the mean-time-between-failures (MTBF), reduce the mean-time-to-repair (MTTR), reduce the total cost of ownership (TCO), and optimize overall asset life cycle.

Purpose of the Application

Simplify asset tracking with a digital representation of your equipment:

- Digital repository of asset location and documentation
- Easy access to documentation, drawings, warranty information, etc. using a mobile or desktop application

Switchboard with QR Code®[1] on Front Face

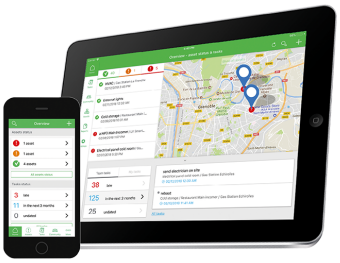
Plan preventative maintenance

- Standard maintenance plan template per asset

Receive maintenance notifications

- Receive proactive notifications on mobile phone or desktop application
- Simplify maintenance planning
- Avoid missed maintenance tasks that could lead to failures
- Track maintenance history

1. QR Code is a registered trademark of DENSO WAVE INCORPORATED in Japan and other countries.



Maintenance Status and Location at a Glance

Easily manage maintenance tasks within facility teams

- Easily and quickly share tasks with teams
- Provide instructions and guidance to designated service engineer
- Generate event log and report on asset maintenance

Keep asset information up-to-date

- Once maintenance has been performed, update documentation, future maintenance tasks, and schedules

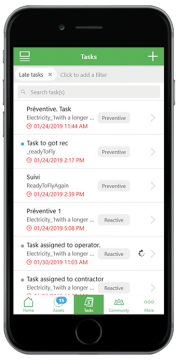
Share projects and collaborate online

- Collaborate with professional partners to achieve a common goal
- Easily identify the key stakeholders in charge of the different stages of the project to reduce contradictory or missing information

Application Outcomes

Dashboards

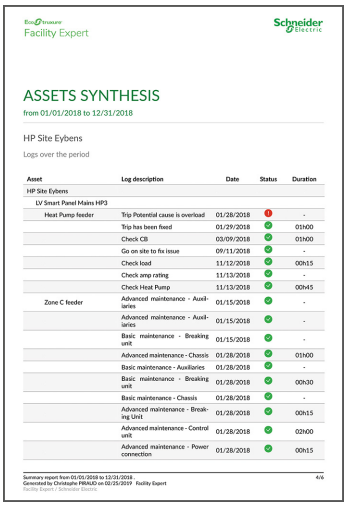
- Asset location map
- Overview of asset status
- Summary of team maintenance task status (late, upcoming)



EcoStruxure Facility Expert Maintenance Task List

Reports

- Editing and automatic storage of maintenance reports and asset information
- Log of maintenance tasks per asset with late/upcoming maintenance task due dates



Facility Expert

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ASSETS SYNTHESIS

from 01/01/2018 to 12/31/2018

HP Site Eybens

Logs over the period

Asset	Log description	Date	Status	Duration
HP Site Eybens				
LV Smart Panel Mains HP3				
Heat Pump feeder	Trip Potential cause is overload	01/28/2018		-
	Trip has been fixed	01/29/2018		01h00
	Check CB	03/09/2018		01h00
	Go on site to fix issue	09/11/2018		-
	Check load	11/12/2018		00h15
	Check amp rating	11/13/2018		-
	Check Heat Pump	11/13/2018		00h45
Zone C feeder	Advanced maintenance - Auxiliaries	01/15/2018		-
	Advanced maintenance - Auxiliaries	01/15/2018		-
	Basic maintenance - Breaking unit	01/15/2018		-
	Advanced maintenance - Chassis	01/28/2018		01h00
	Basic maintenance - Auxiliaries	01/28/2018		-
	Basic maintenance - Breaking unit	01/28/2018		00h30
	Basic maintenance - Chassis	01/28/2018		-
	Advanced maintenance - Breaking Unit	01/28/2018		00h15
	Advanced maintenance - Control unit	01/28/2018		02h00
	Advanced maintenance - Power connection	01/28/2018		00h15

Summary report from 01/01/2018 to 12/31/2018 4/6
Generated by Christophe PRAUD on 02/25/2019 Facility Expert
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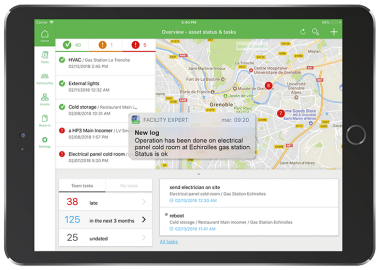
Asset Maintenance Report

Notifications

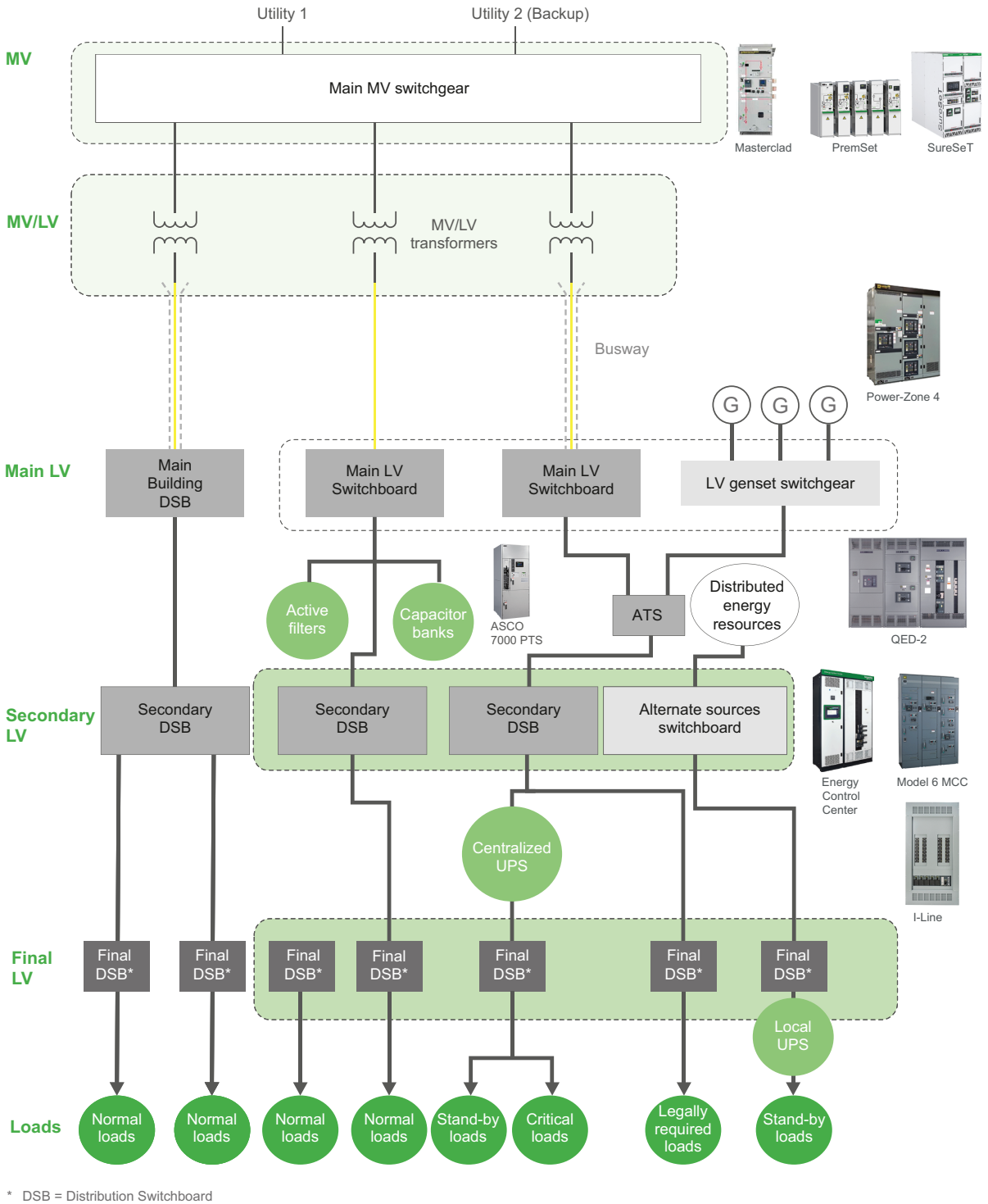
- Notification through mobile or desktop application of assigned, scheduled, or late maintenance tasks



EcoStruxure Facility Expert Maintenance Notifications

Electrical Architecture

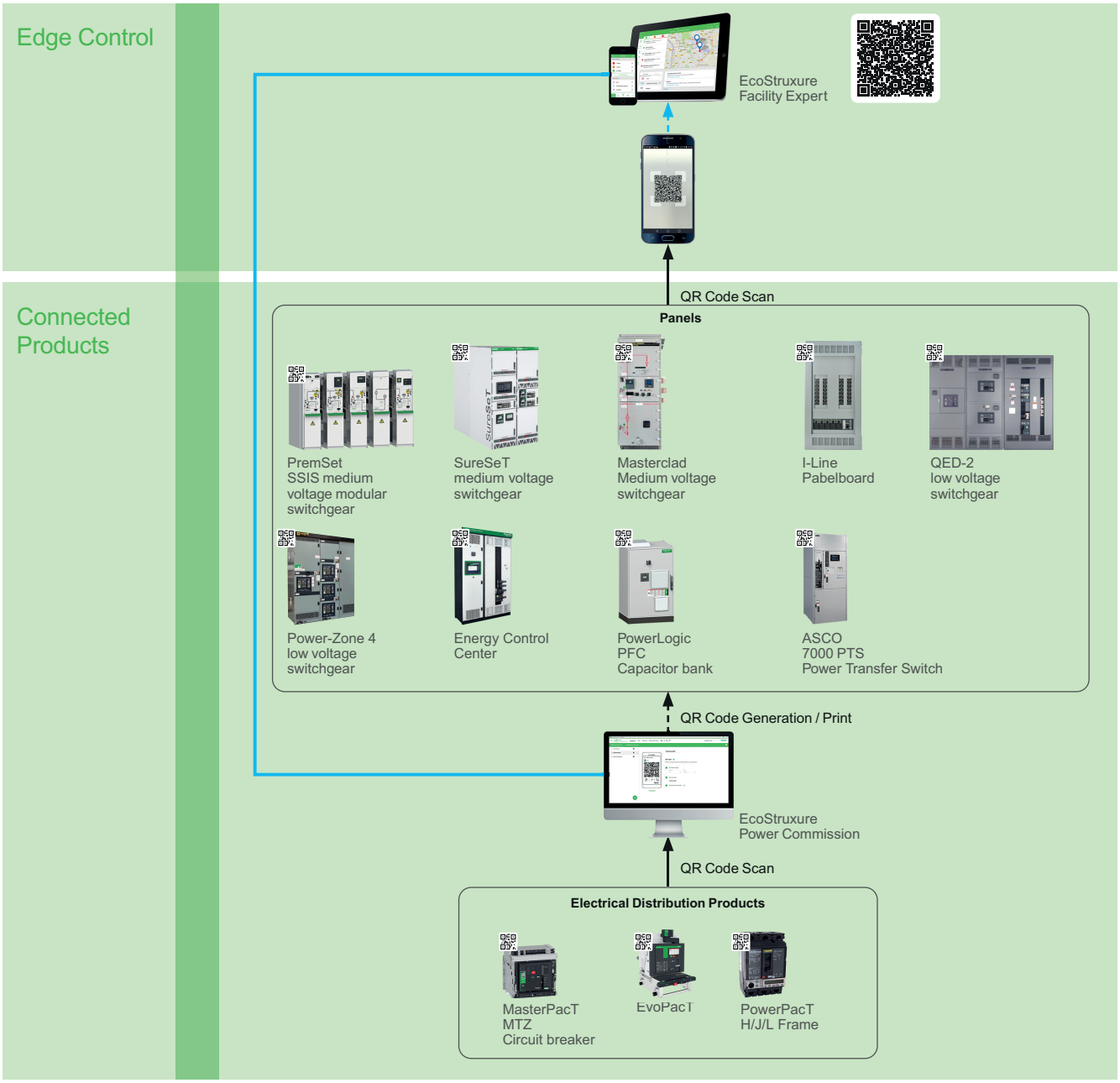
The following diagram details the areas of the architecture where the Electrical Asset Life Cycle Management application can be deployed.



* DSB = Distribution Switchboard

Digital Architecture

The recommended digital architecture for the application is shown below:

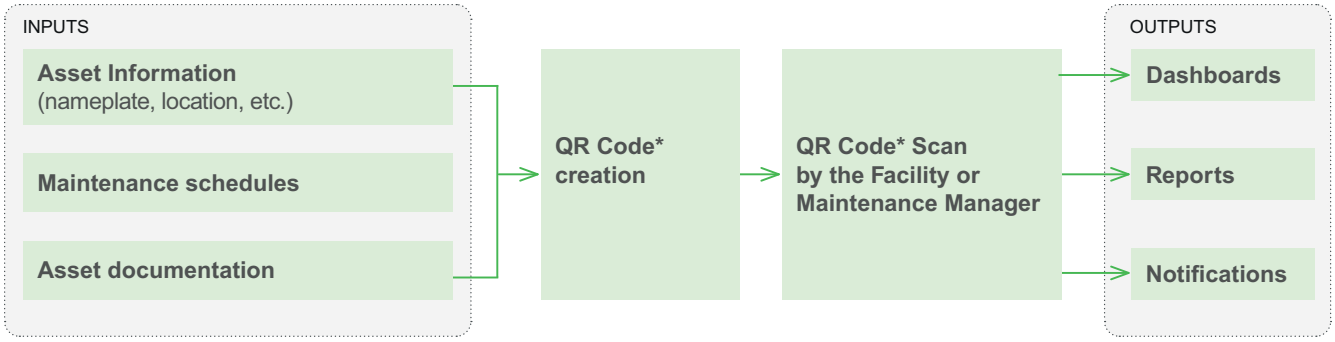


Scan
Print
Data (WIFI / 3G/4G/5G)
Ethernet - public LAN/WAN

System Description

Data Flow

The Electrical Asset Life Cycle Management application can be broken down as follows:



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Inputs

The following data are acquired during the manufacturing and commissioning of electrical assets:

Asset Information and Maintenance Schedules

- Electrical characteristics and serial number are captured as per nameplate, as well as context information that will help locate the Asset (customer, country, town, facility, building, floor, etc.).
- Maintenance templates and schedules include the standard manufacturer recommended maintenance procedures and schedules for a given electrical asset.
- Standard templates exist for a number of electrical assets such as:.
  - Medium voltage equipment (Masterclad, PremSet, Model 3 Motor Control Centers)
  - Low voltage equipment (Power-Zone 4 Switchgear, QED-2 Switchboards, Model 6 Motor Control Centers, I-Line Panelboard, etc.)
  - Circuit breakers such as MasterPacT MTZ and PowerPacT H/J/L Frame
- For non-native equipment, templates can be created in EcoStruxure Facility Expert.


PremSet

SureSeT


Masterclad


Energy Control Center


QED-2


Power-Zone 4


ASCO 7000 Series PTS


Model 6 MCC


EvoPacT


MasterPacT MTZ


PowerPacT H/J/L


I-Line Panelboard

Asset Documentation

Asset documentation produced during panel construction can be attached to a defined electrical asset. This documentation may include wiring diagrams, single-line diagrams, user documentation, bill of materials, device serial numbers, and more. Documentation is stored digitally, accessible through the EcoStruxure Facility Expert app, and maintained as necessary during the operational life cycle.


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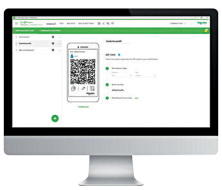
QR Code Creation

A QR Code[2] is produced through a process of installation and commissioning of electrical assets by Schneider Electric or the licensed panel builder using EcoStruxure Power Commission.


EcoStruxure Power Commission

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QR Code Scan by the Facility or Maintenance Manager

The QR Code[3] for a given asset gives access to its associated documentation, maintenance requirements, and schedules. This simplifies utilization and maintenance of the equipment throughout its operational life cycle.

Equipment QR Code[3] (Nonfunctional Example Code)

Outputs

Outputs are displayed remotely via EcoStruxure Facility Expert software.

Dashboards

Map View

EcoStruxure Facility Expert provides a map view of where electrical assets are located.

- By clicking on a particular site, the list of the electrical assets can be viewed.
- Selecting an electrical asset provides access to its preventive maintenance status, procedures, and documentation.
- The available documentation consists of test reports (electrical, communication, etc.), electrical drawings, bill of material (BOM), etc.
- Users can also identify the required maintenance tasks and assign them to the appropriate person or team.

EcoStruxure Facility Expert Map View

Reports

Facility Expert Maintenance Report

Maintenance reports can be generated to easily identify a summary of the status of maintenance tasks for electrical assets.

For a given asset, it provides:

- nameplate information
- key information including maintenance logs over the selected period, list of performed tasks, duration of inspections, and maintenance contributors
- visualization of all late or upcoming maintenance tasks

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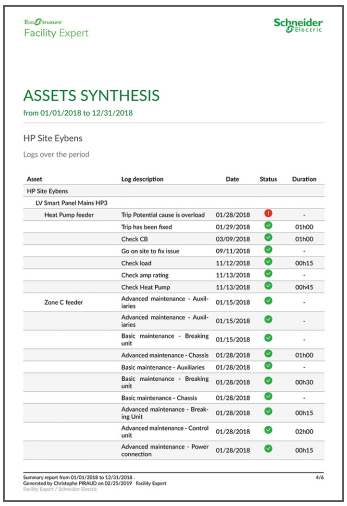

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Summary report from 01/01/2018 to 12/31/2018 4/6

Generated by Christophe PINAUD on 02/25/2019 Facility Expert

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EcoStruxure Facility Expert Maintenance Report

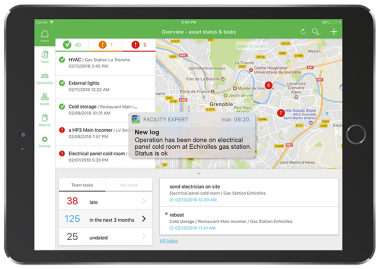
Maintenance Plan

Maintenance plans with auto-generated templates for Schneider Electric assets can be generated.

Notifications

The EcoStruxure Facility Expert application provides alerts and notifications when preventative maintenance tasks are due.

Alarm details and relevant associated actions such as acknowledgement, planning, and assignment of tasks are instantly accessible from the notification.



EcoStruxure Facility Expert Maintenance Notifications

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