

PlantEtruxure<sup>®</sup> PES

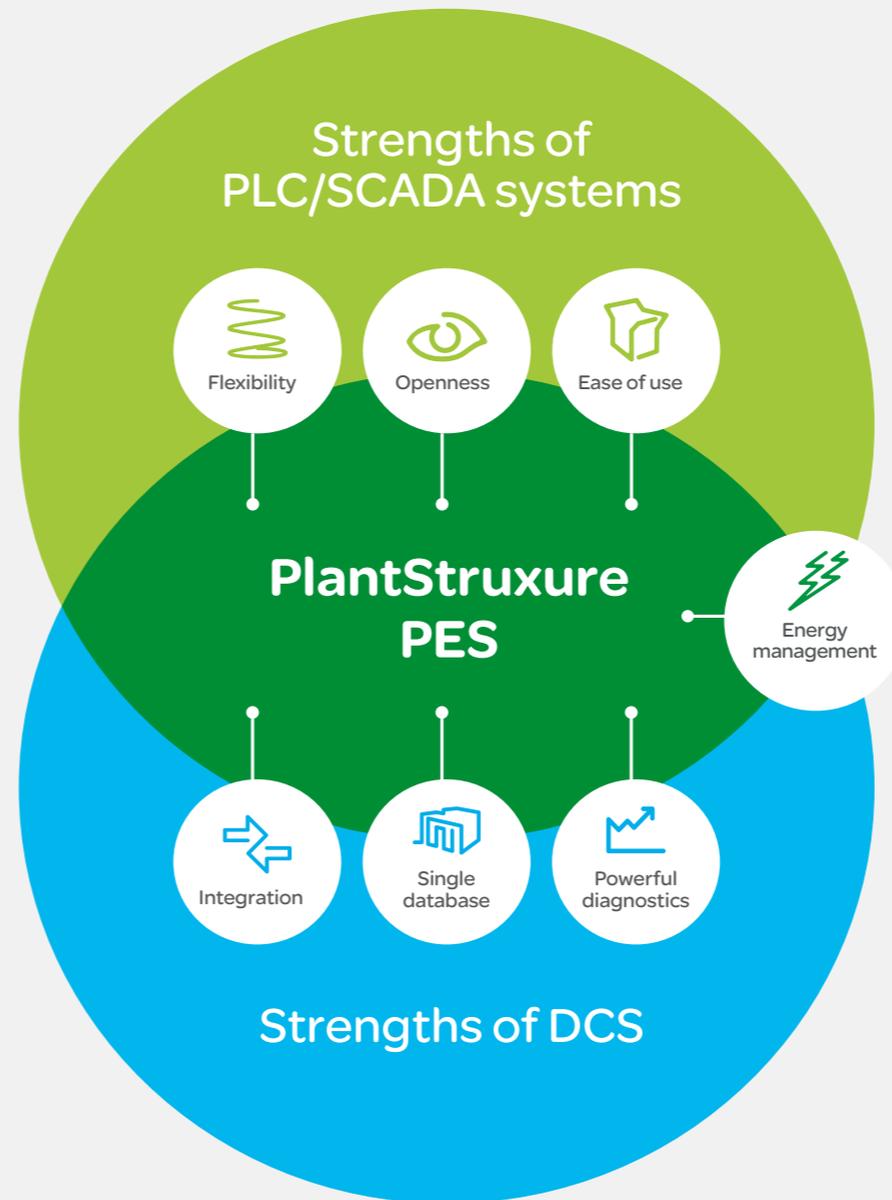
# The next-generation distributed control system for a digitized and energy-aware plant



Adobe<sup>®</sup> Reader<sup>®</sup> required for full interactive experience

**Schneider**  
 Electric<sup>™</sup>

Can't choose between PLC/SCADA or DCS? Now you don't have to.



# The first DCS designed for the reality of modern day production

Introducing PlantStruxure™ PES, the next-generation Distributed Control System (DCS) from Schneider Electric™ that brings together the advantages of both worlds to uniquely address your modern needs.

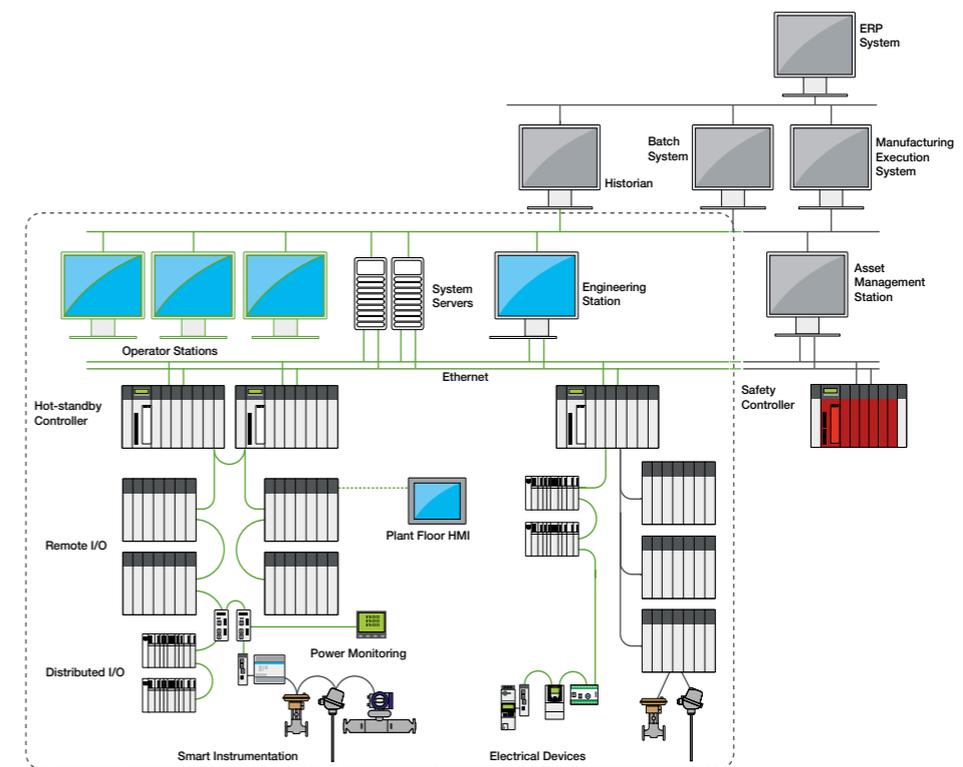
The hybrid design of PlantStruxure PES combines the ease and openness of PLC/SCADA with the integration, single database, and powerful diagnostics of a traditional DCS. Result? An innovative and energy-aware DCS that meets the demands of modern production facilities and delivers on growing energy management requirements.



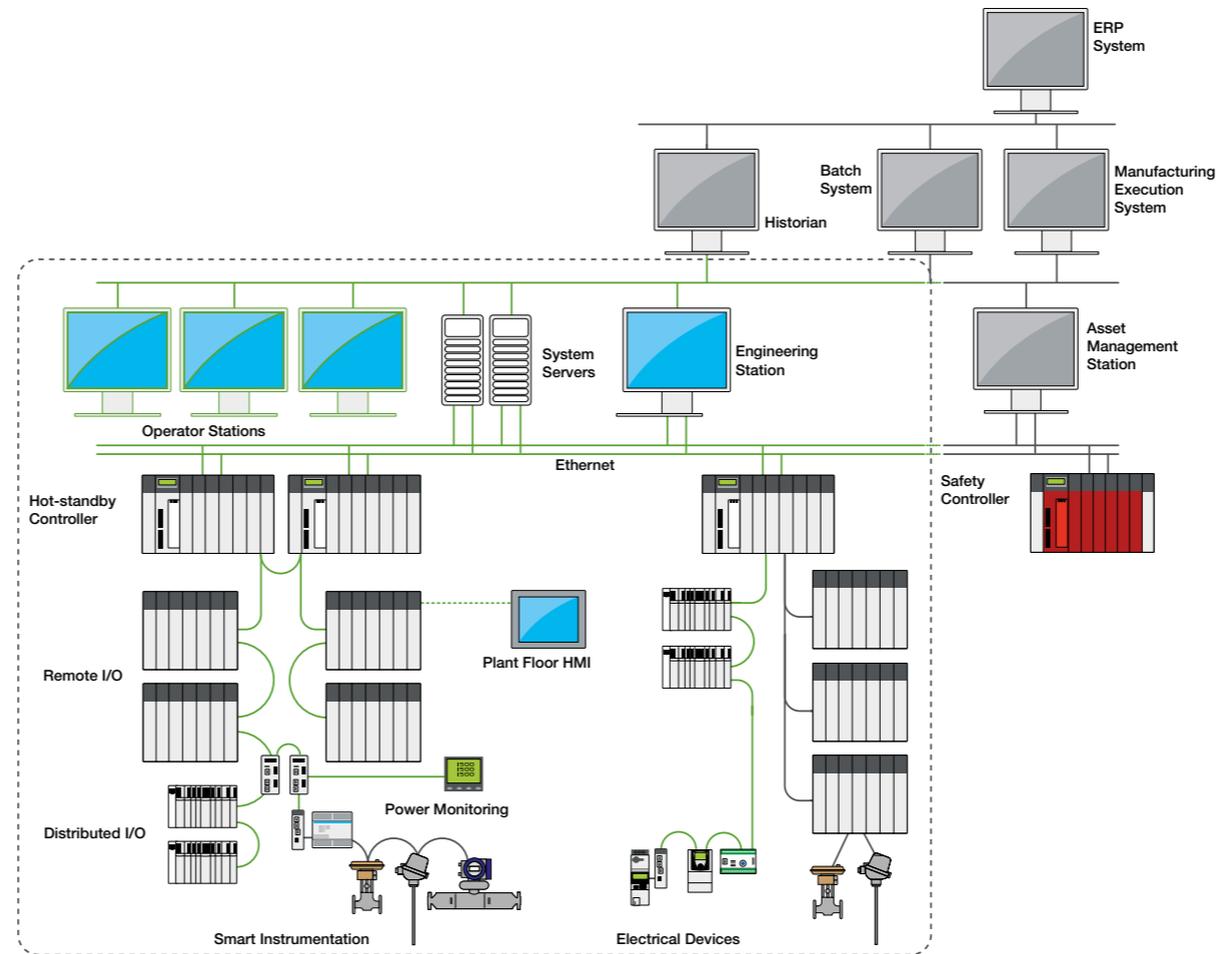
# A single architecture packed with functionality

All the key process functionalities seamlessly integrated in one environment:

- > A single object-oriented database to engineer and maintain your system quickly and easily
- > Dedicated object and vertical libraries to support standardization, engineering, and maintenance
- > Powerful operations and runtime navigation services for real-time monitoring and control of the plant, including alarms, events, and trend data



# PlantStruxure PES architecture



# Systemwide Ethernet architectures

Based on standard Ethernet, PlantStruxure PES brings flexibility and openness to the DCS world, allowing customization of applications while maintaining strong integration capabilities.

This is in line with the ODVA Vision of a Unified Automation Architecture for the Process Industries:

- > Convergent in its long-term approach to support the deployment of standard Ethernet across all domains of the industrial ecosystem
- > Compatible by enabling users to integrate new devices and systems with their installed base while evolving their automation architecture
- > Scalable from simple field devices to complex automation systems
- > Open by virtue of its use of multivendor, interoperable standards managed by an independent, vendor-neutral organization



# Powerful, scalable controller platform

PlantStruxure PES supports a range of controllers to meet your process needs. The controller platforms are modular, scalable, and redundant, with the ability to add or remove hardware online.

## **A complete range**

The controllers support a full range of input and output modules, along with dedicated communication and fieldbus modules, motor control and connection to rotating machines, electrical, power, or smart devices and instrumentation.



# Based on tested, validated, and documented architecture

## **Tested:**

You benefit from a tested system. All components are operational and work together.

## **Validated:**

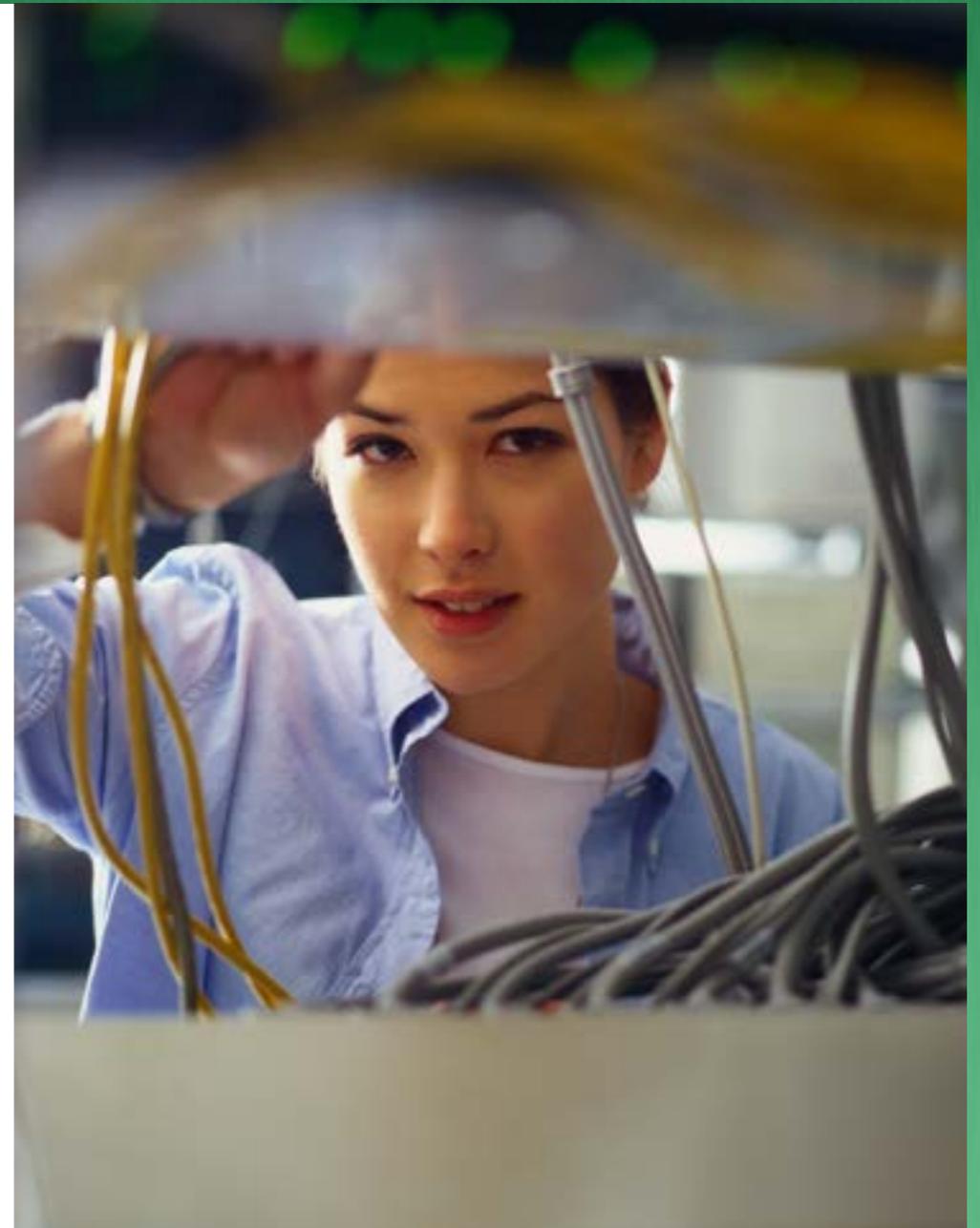
System performance and functions are validated against requirements.

## **Documented:**

Rules are given about how to design a system architecture so that it conforms with a reference architecture. All measured information and limitations are documented.

## **Architecture:**

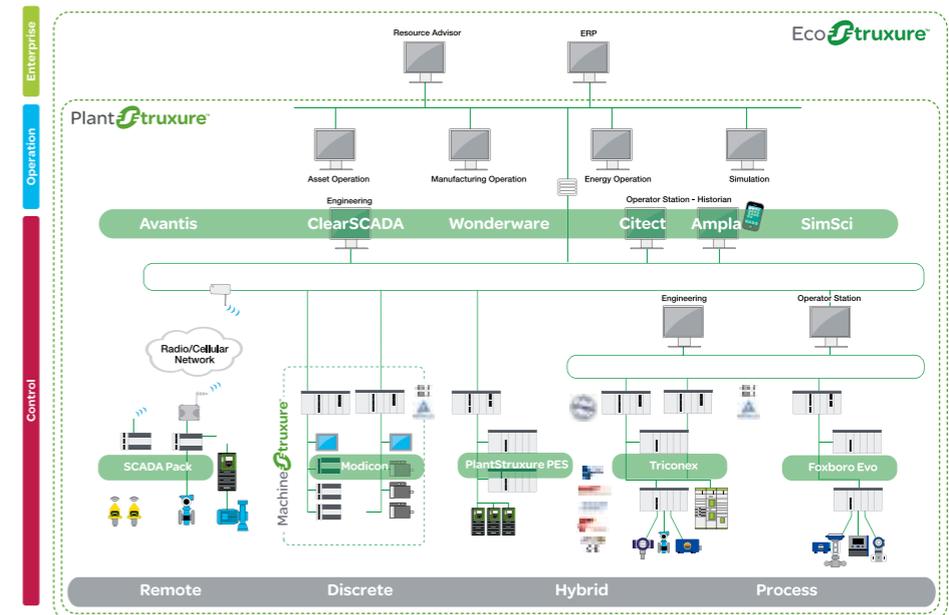
A reference architecture is selected from typical customer cases or from specific segment requirements.



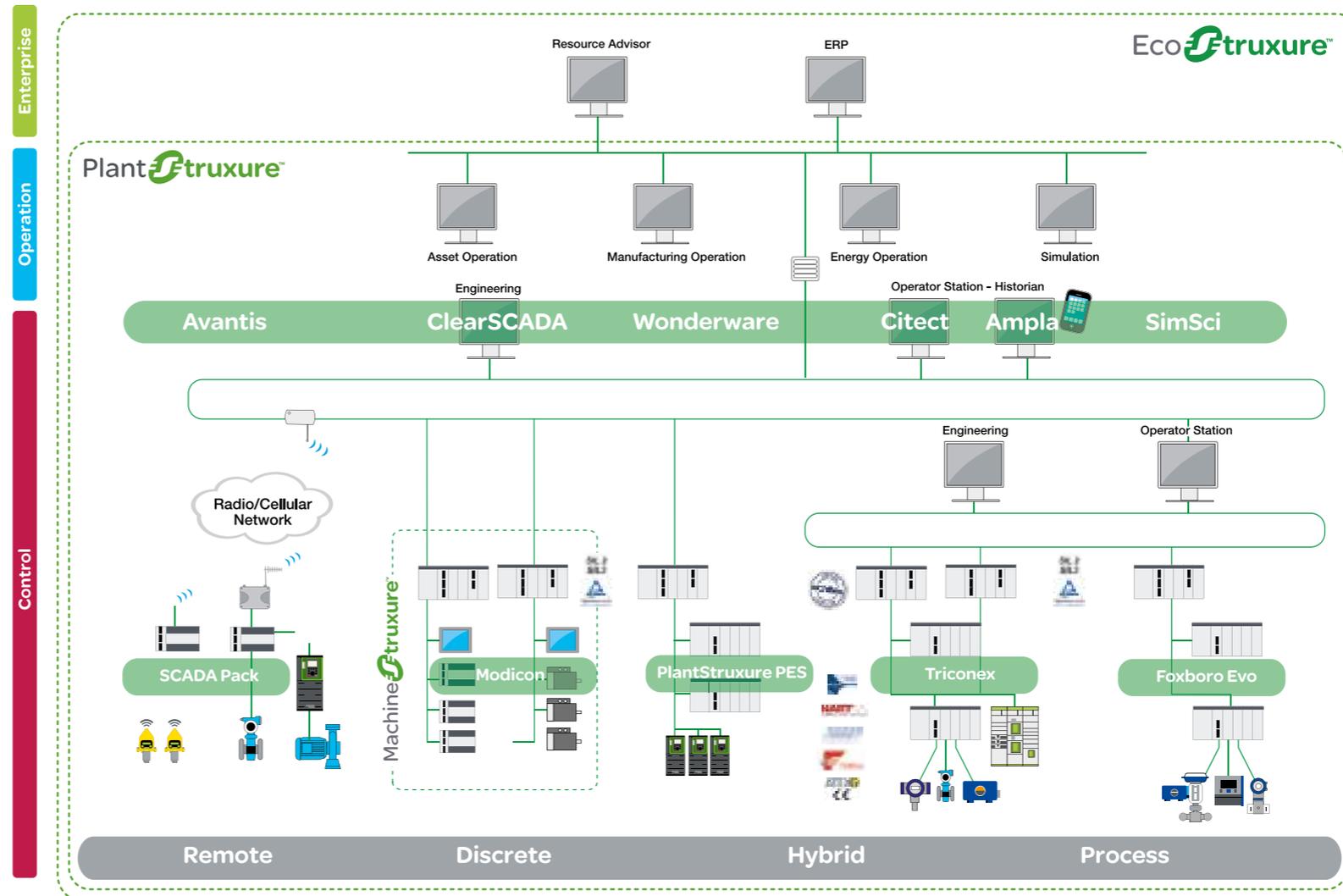
# Start your journey to PlantStruxure, the integrated architecture

## PlantStruxure, your integrated and collaborative architecture

PlantStruxure from Schneider Electric is our global process automation architecture for discrete to continuous applications. Its scope has expanded to include the former Invensys portfolio, including DCS for process applications and a complete range of solutions for your safety system requirements. These are now delivered alongside hybrid control system applications, plant, and infrastructure for discrete applications, and telemetry for remote architectures.



# Start your journey to PlantStruxure, the integrated architecture



# Increase efficiency at every stage of the life cycle with dedicated services

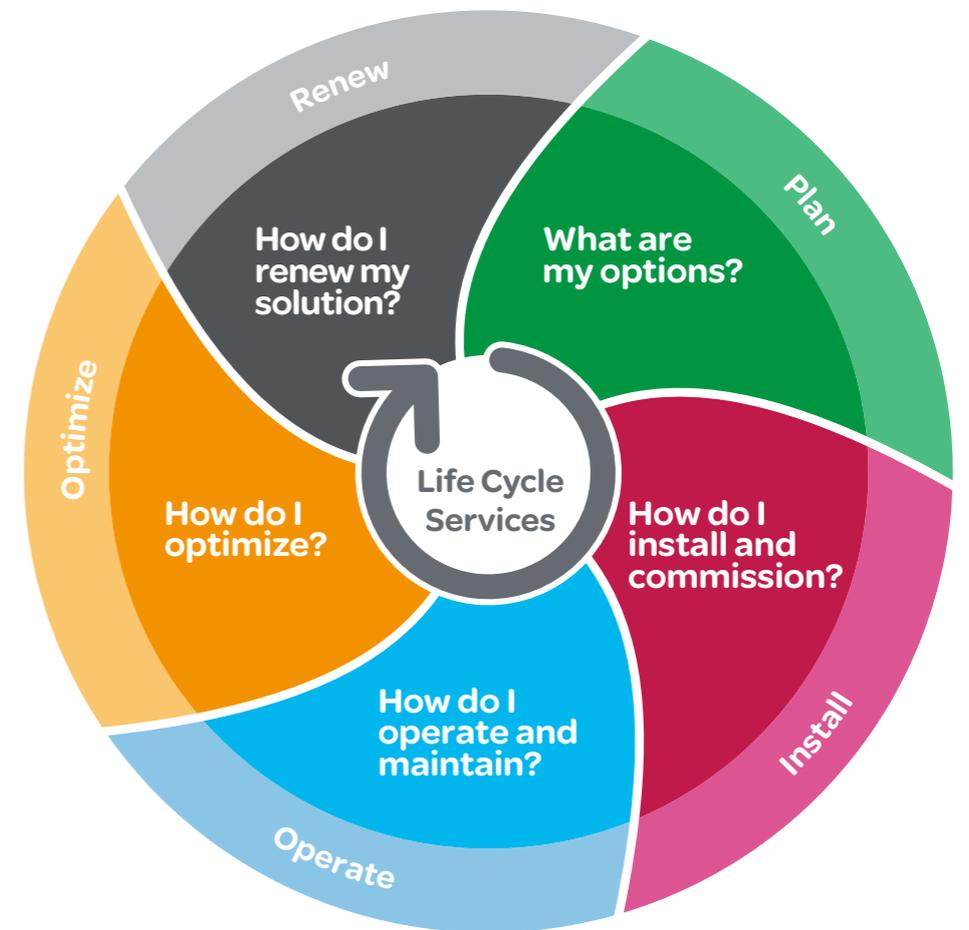
From design and implementation through to training, maintenance, and modernization, PlantStruxure PES is supported with a suite of comprehensive services delivered by the Schneider Electric support centers worldwide.

## PlantStruxure PES Support Portal

The dedicated PlantStruxure PES Support Portal offers online case management and collaborative content like white papers and design guides produced by our solution architects and development teams.

## A complete suite of eServices

From email support, news, and online forums to Web-based training and downloads of service packs and hotfixes.



See the brochure for more info on PlantStruxure PES Global Support!

# Discover what PlantStruxure can do for your plant

## **Digitized operations for the modern era**

Get the right process information to the right person at the right time.

## **Smart process intelligence for your teams**

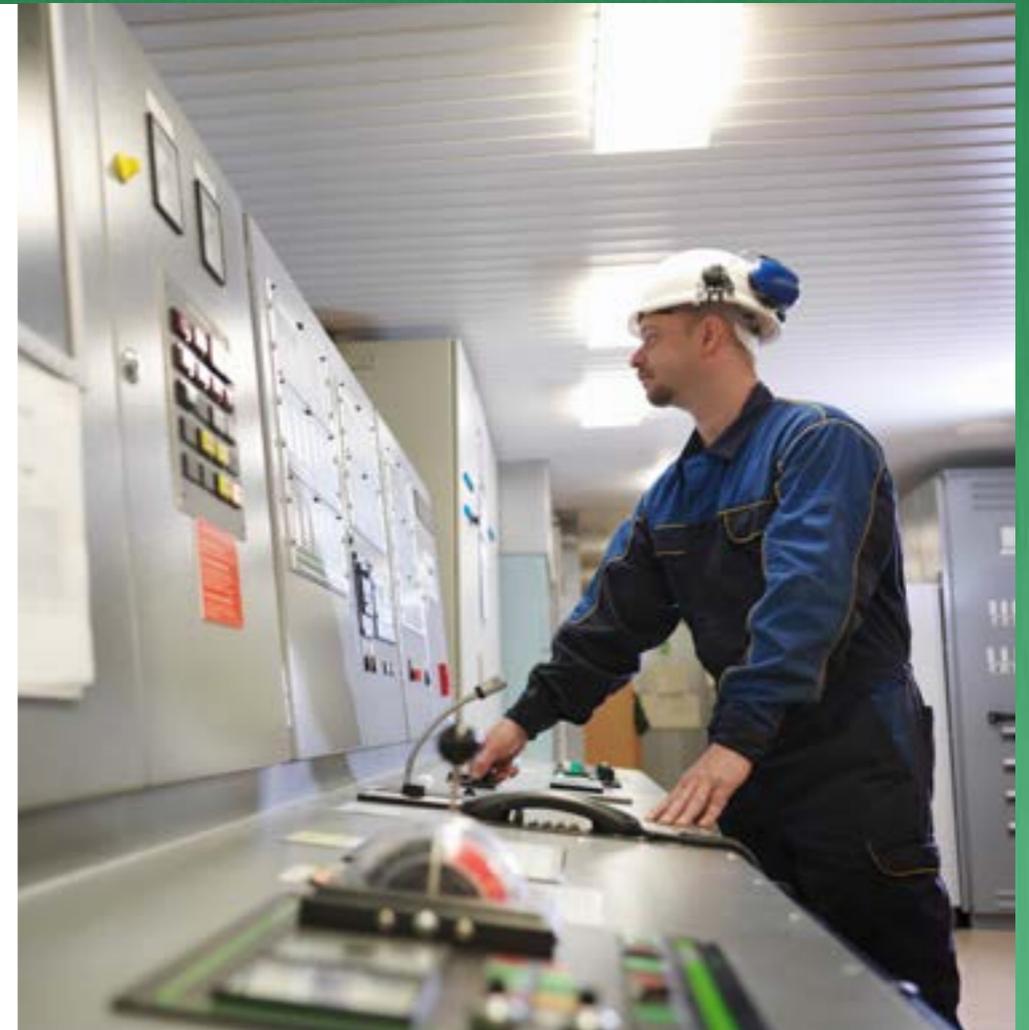
Make faster and better decisions using systemwide cross-references. Minimize training to help ever-leaner teams with process and automation knowledge.

## **Reduced time to market**

Reduce engineering by up to 25 percent thanks to standardization and reuse capabilities.

## **Unique insight to energy use in your process**

Automate energy management into your process and achieve energy savings of up to 30 percent.



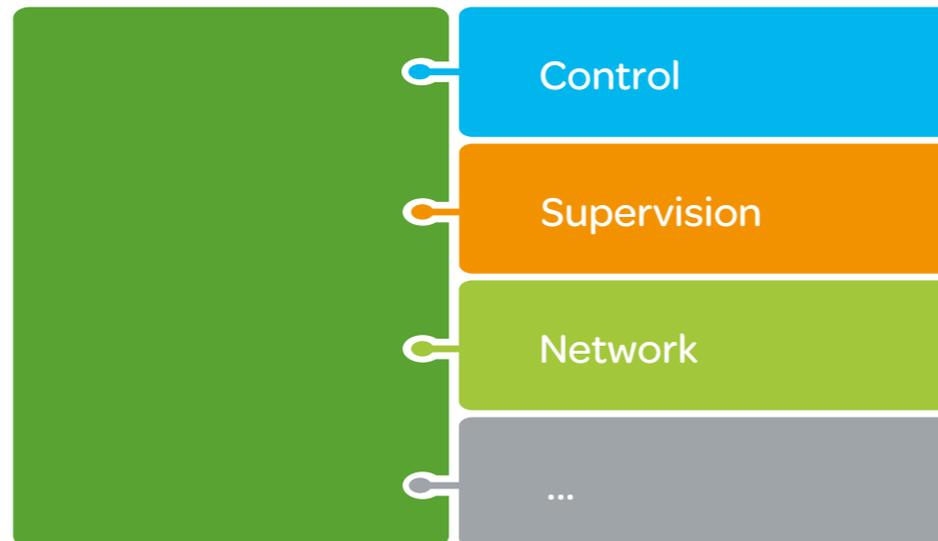
See examples of what PlantStruxure PES can do for your industry:

# Flexible platform architecture

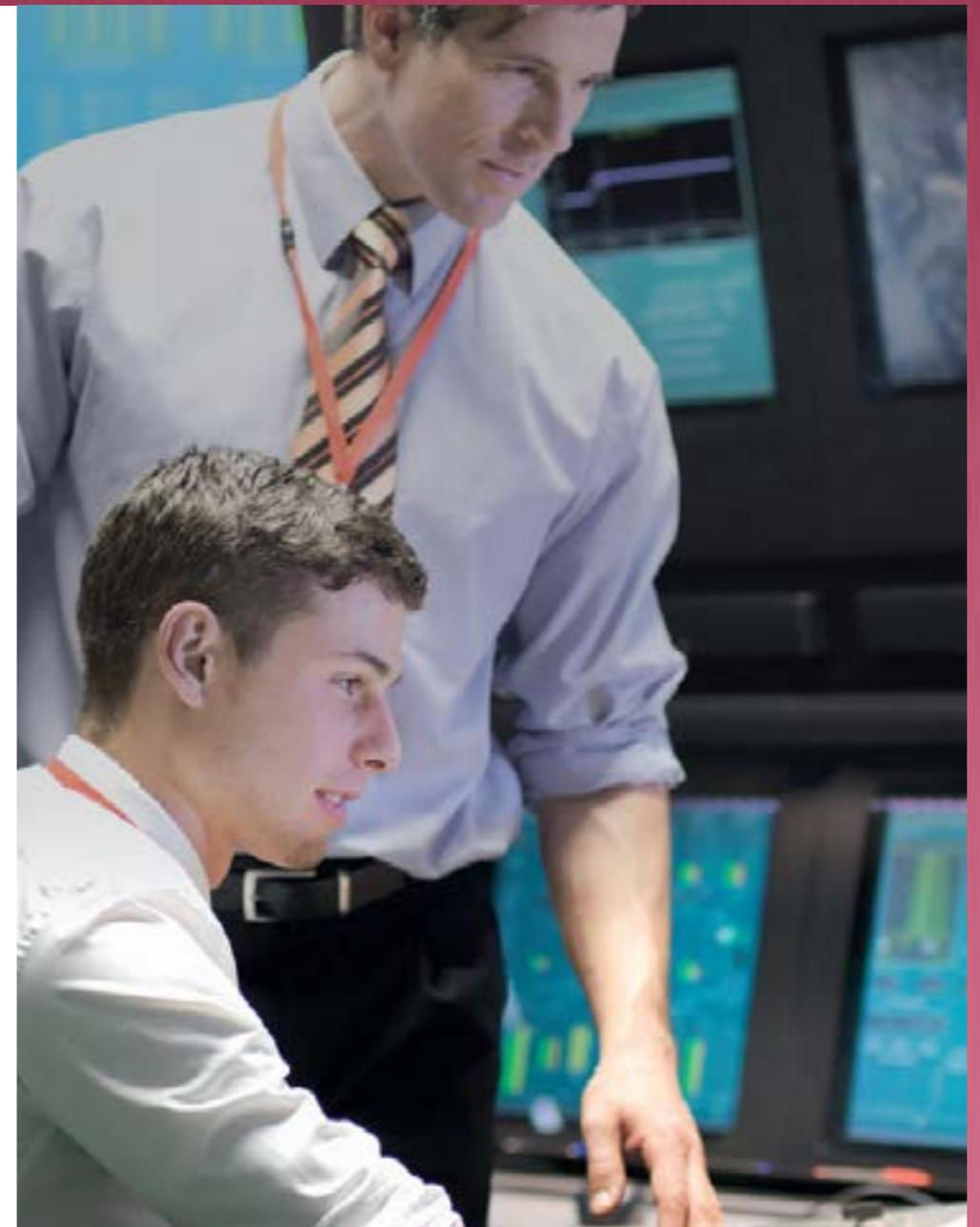
## One platform

PlantStruxure PES  
Platform

PlantStruxure PES  
participants



PlantStruxure PES offers a single platform environment to house system structure, database, and single-object model. External components can plug in to and collaborate within the platform to offer a unified engineering life cycle.



# An object model approach

As a next generation DCS, PlantStruxure PES delivers an object model based on a structure with components that can be used selectively for more flexibility. The code size is optimized, as only the necessary elements are downloaded.

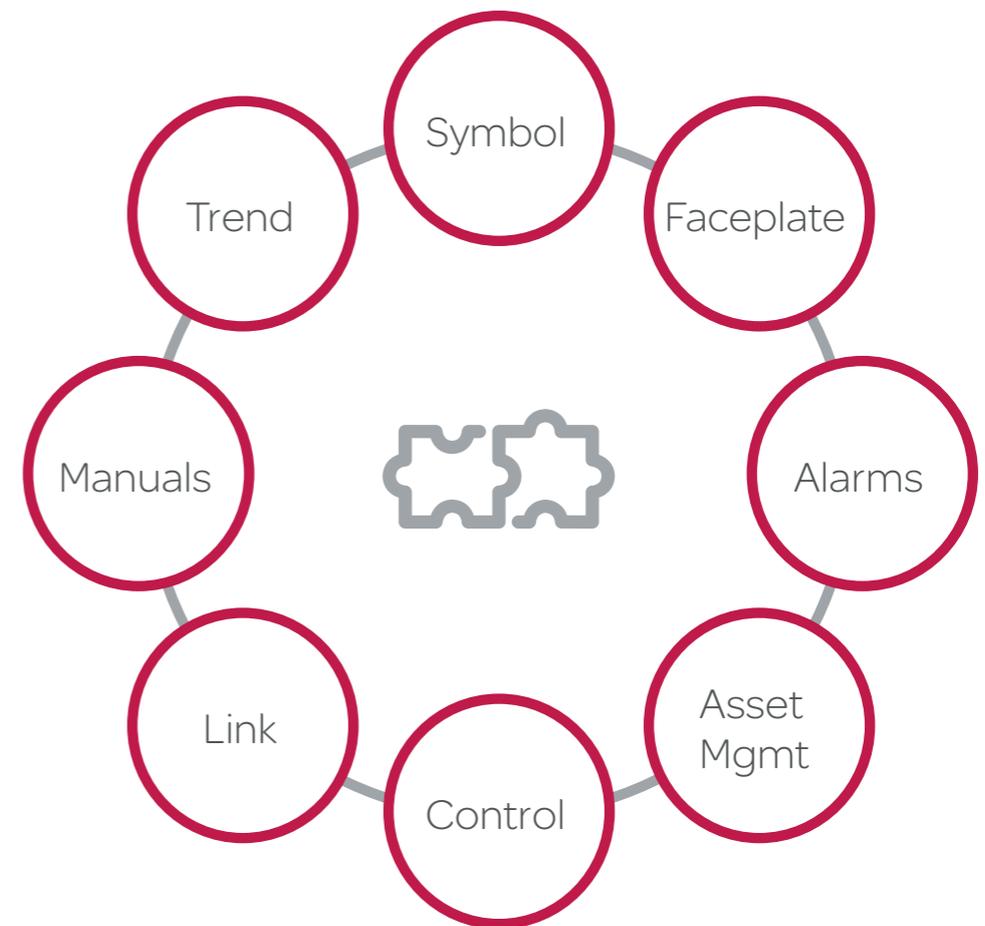
## Object facets

An object is made of facets that offer different views of the same object: the developer facet, the operator facet, and the maintenance facet. Interfaces allow connections between object instances, enabling collaboration between participants while keeping them decoupled.

## Change propagation

The model also enables change propagation to support the object's life cycle, offering room for future expansion and customization, as well as capabilities for a concurrent run of different versions of the same object with full traceability of the change.

## One device, configured once

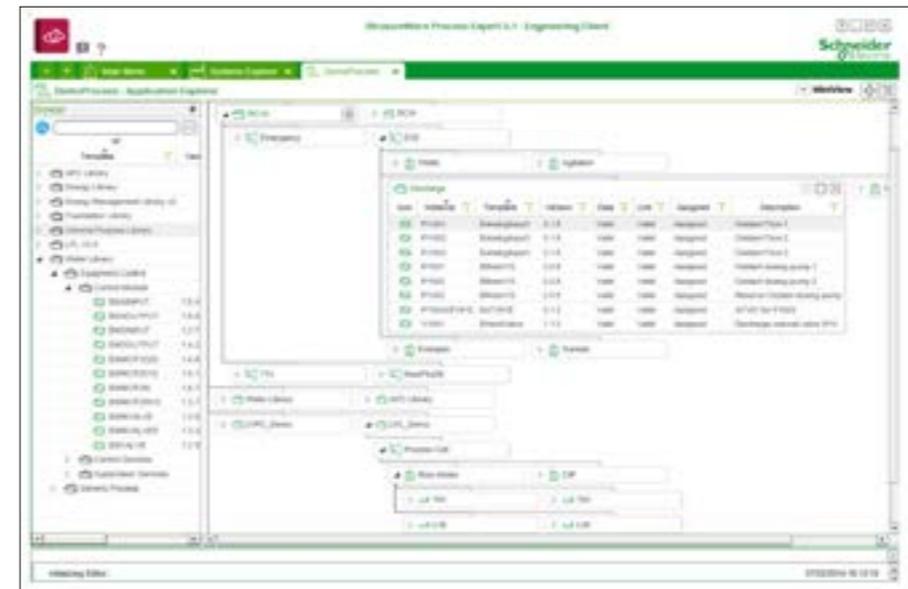


# Single database with a configure-once philosophy

As a true DCS, PlantStruxure PES offers a single object-oriented database that allows it to keep consistency during engineering but also throughout system life cycle, allowing complete traceability and easy modification or extension.

## All-in-one

PlantStruxure PES offers an all-in-one configuration functionality, allowing faster system design from a single point of data entry. Via application manager, you replicate the application as it is in real life, using your own model, the ISA88 or ISA95 standards, or any other model of choice. The design can be based on a hierarchical organization according to the P&ID definition, allowing easier evolution of the installation.

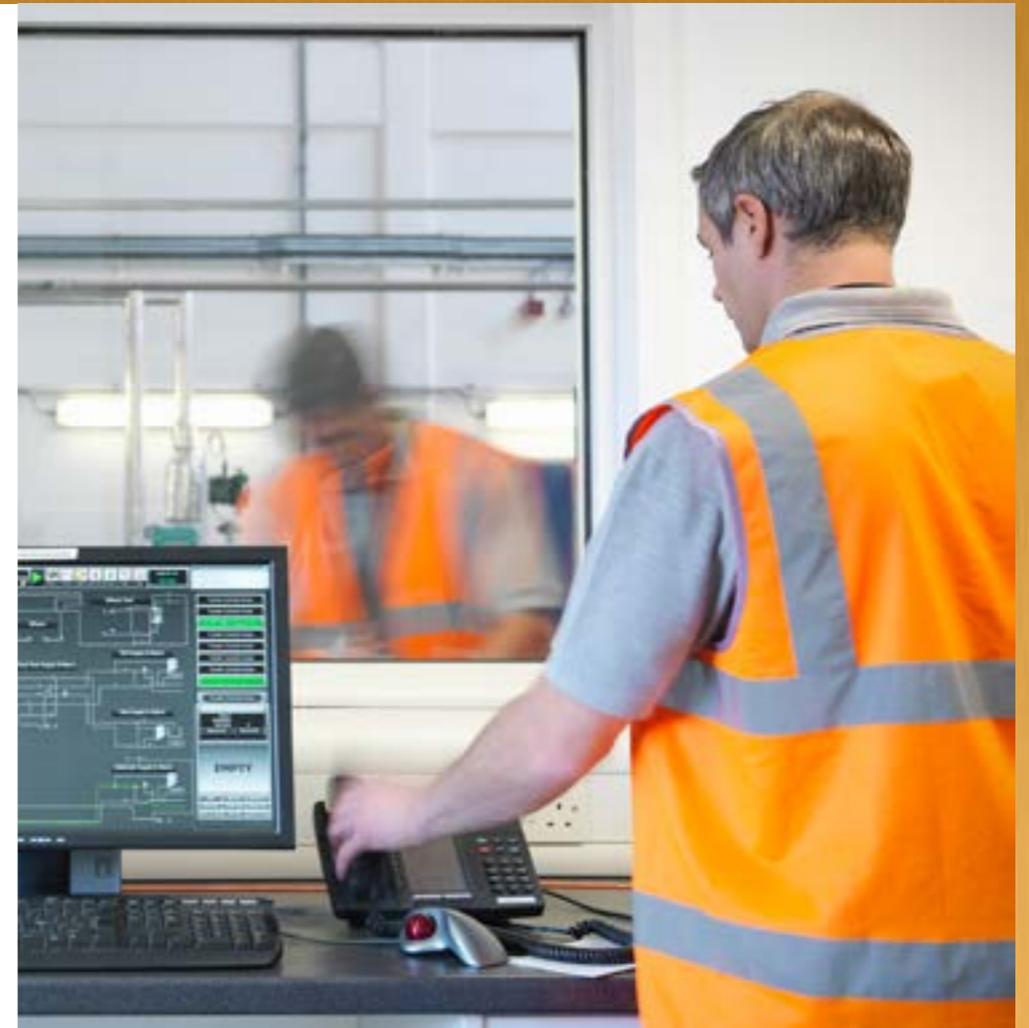


# Runtime navigation services

With PlantStruxure PES, the right person gets the right information at the right time, so they can diagnose and solve problems faster. You can access in real-time any data about any device or equipment in your system, including the code running in the controller, all documentation, historian, asset management, Internet links, etc.

## **Different points of view**

The navigation services in PlantStruxure PES are based on the combination of two innovative concepts — dynamic different point of views for the same object and dynamic access to different editors: process-oriented for process teams, topology-oriented for maintenance teams, and project-oriented for automation teams.



# Online cross-references

PlantStruxure PES offers a unique system of online cross-references that codify process knowledge in the system. Operators can access it through both horizontal navigation (between the different facets of an object) and vertical navigation (between the different objects in the same process area).



# Built-in libraries to standardize and reuse your application

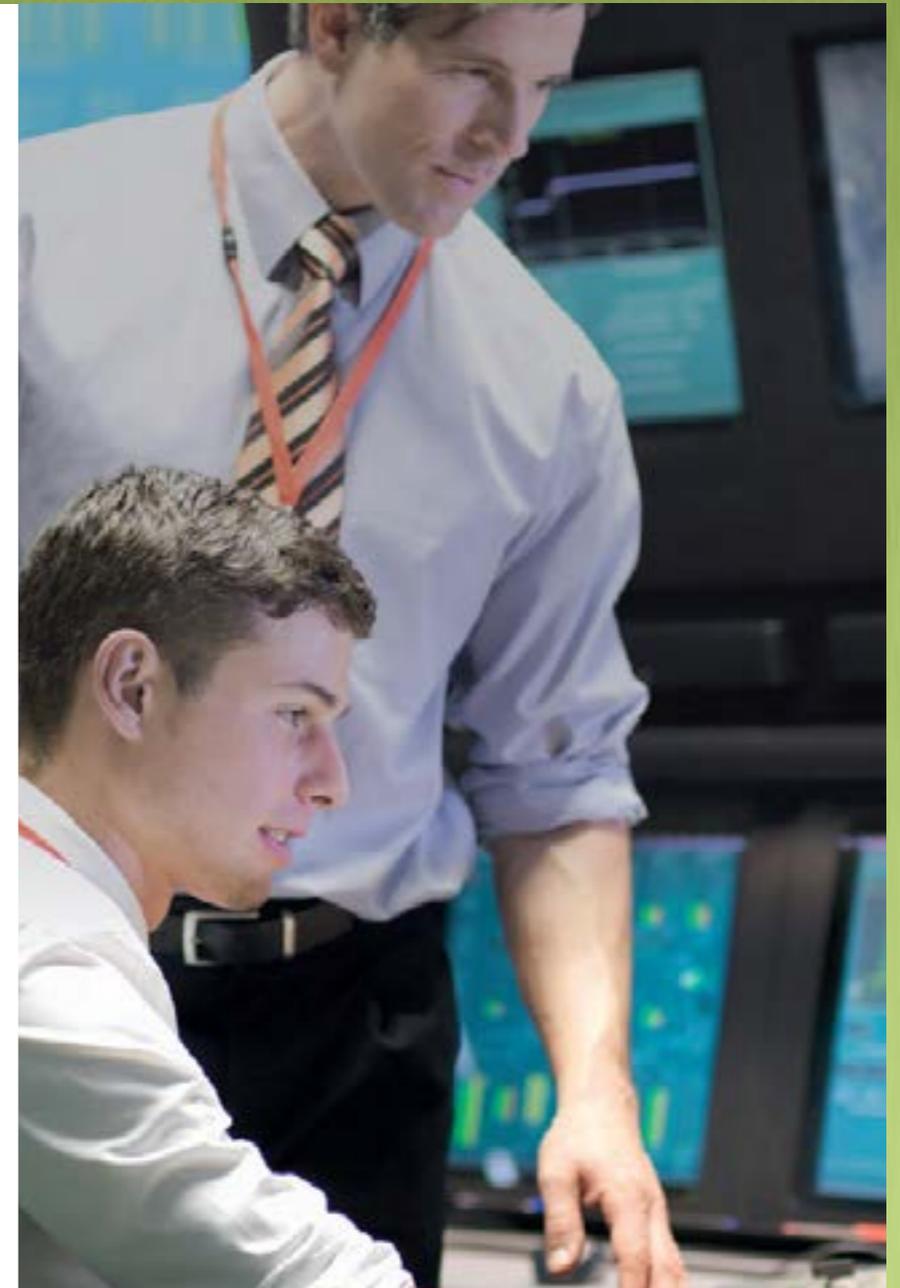
Libraries increase your efficiency in the engineering phase as well as during operation and maintenance by contributing strongly to your savings in terms of schedule and cost. They are pretested to help reduce risks.

## **Vertical libraries**

PlantStruxure PES provides vertical libraries, such as Mining, Cement, Liquid Food, and Water, embedding the specific process know-how of your industry segment. They remain flexible and can be modified to suit your specific preferences.

## **PlantStruxure PES also provides Advanced Libraries such as:**

- Advanced Process Control (APC) that offers high control process features (Enhanced PID with built-in Auto Tuning feature, Model Base Predictive & Internal Model Base Control, etc.)
- Energy Management that raises user's energy awareness of the equipment's energy over consumption, helping the user reduce plant downtime
- Low Voltage Power Control (LVPC) that enables monitoring energy situation in low-voltage power circuits and equipment within a plant; moreover, it intelligently keeps available energy to the critical loads for your operation by reducing energy to the least critical ones.



# A productive engineering approach

## PlantStruxure PES embeds three editors to design a process application:

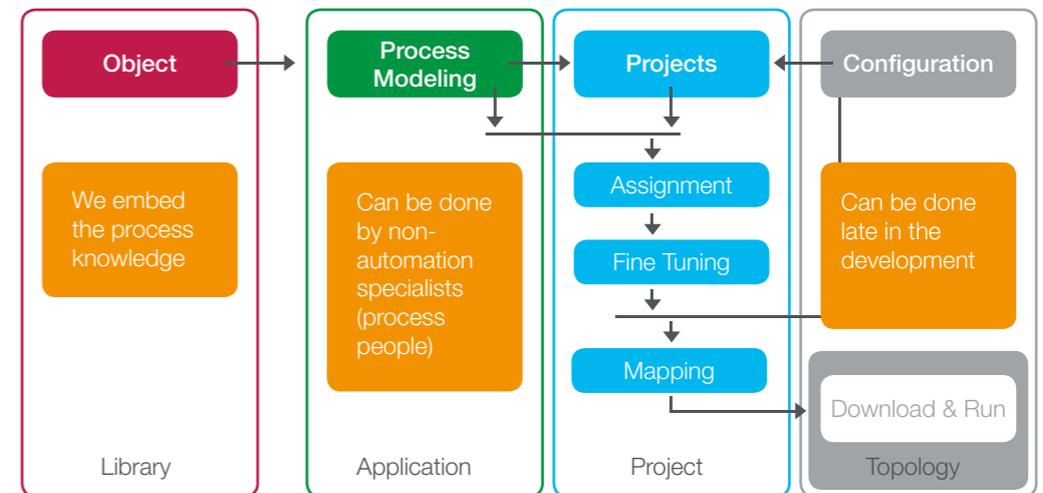
**Application Manager** describes the equivalent plant hierarchy and can be used by nonautomation specialists (Process engineers).

**Topology Manager** describes the overall system topology (Hardware: network, controllers, devices, etc.).

**Project Manager** defines the project that runs in the topology. The project can be linked very late in the process allowing for greater flexibility in design as well as the possibility to have the same project running on different hardware (Pilot plant, Plant A, Plant B, etc.)

In addition, **Library Manager** contains an extensive collection of object templates organized into libraries.

## Engineering Life Cycle



# Openness at all levels

With PlantStruxure PES, openness does not just apply to the operator station, but also objects and libraries, the control network, and the very philosophy in which the system is designed and put together.

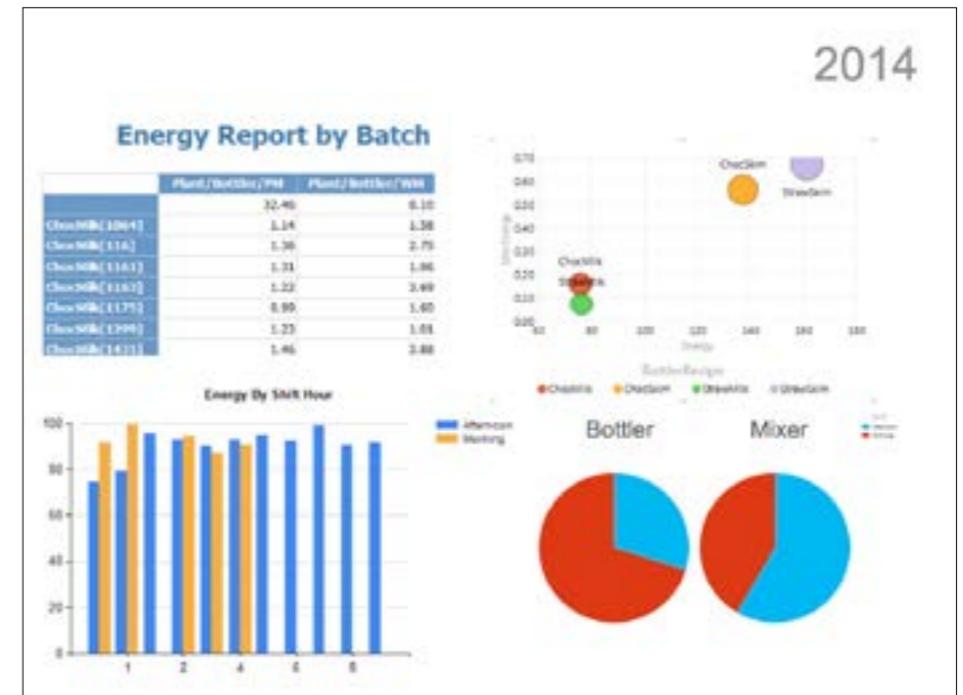
Our object model is adaptable to your requirements, the libraries adaptable to your process, the control network compatible with third-party components, control room open to any IT vendors, and last but not least, state-of-the-art plug-and-play platform open to third-party tools and utilities – a truly open environment that enables Schneider Electric and our Alliance partners to meet your every demand.



# Turn raw energy data into active energy awareness

PlantStruxure PES automates energy management in your process by harvesting accurate energy data and putting it in context with process information. The result is an actionable report that helps you eliminate the source of overconsumption — be it device wear, operational mode, a process obstruction, or anticipated device breakdown.

By combining energy and process data in one system, PlantStruxure PES gives you a complete, energy-aware picture of what really goes on in your plant for a positive, real-time impact on process efficiency.



# Embedded tools that reduce your energy bill by up to 30%

- > Dedicated libraries and application templates for energy devices to aggregate data from across the system and reduce energy waste
- > Dedicated energy dashboards to enable your operators to track energy as a process input
- > Intelligent load-shedding — based on defined rules and priorities, the system executes load-shedding if the energy costs exceed your KPIs
- > Idle state services built in to specific objects, putting equipment in to a predefined state, based on another process input or time schedule
- > Predictive maintenance alerts, generated on the basis of combined production and energy data to reduce energy use and downtime



# What's new?

## **PlantStruxure PES 4.0 brings new features:**

### **New capabilities, thanks to a new generation of the software architecture:**

- > Capability to design medium to extra-large applications (typical 20,000 object instances)
- > Better productivity in design, thanks to an improved user interface with new services and a good performance of software response time
- > Multiusers capability, allowing several users to work in parallel on the same control system
- > Advanced diagnostics thanks to the Runtime Navigation Services from any operation station on site

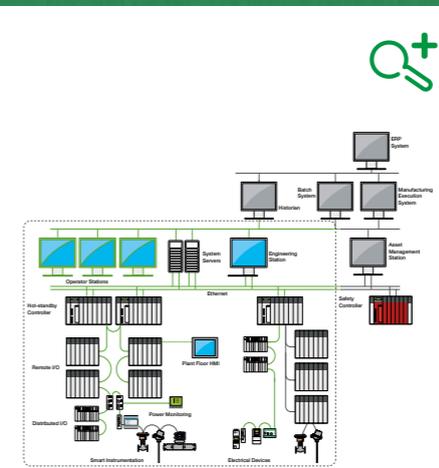
### **Centralized configuration of new hardware architectures:**

- > Cost-effective controller architectures with Modicon x80 remote drops
- > Native time stamping configuration at system level with 1 or 10 ms resolution
- > Integrated configuration of Profibus Remote Master

## A single architecture packed with functionality

PlantStruxure PES automates energy management in your process by harvesting accurate energy data and putting it in context with process information. The result is an actionable report that helps you eliminate the source of overconsumption – be it device wear, operational mode, a process obstruction, or anticipated device breakdown.

By combining energy and process data in one system, PlantStruxure PES gives you a complete, energy-aware picture of what really goes on in your plant for a positive, real-time impact on process efficiency.



Enlarge picture

Go to chapter



Meet PlantStruxure PES

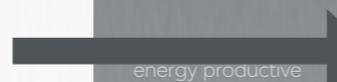
Digitize your plant!

Bring intelligence to your operations

Reduce time to market

energy productive

Select chapter section or see website/movie



Go to additional information



See a movie!

PlantStruxure PES

<< Back



Navigation guide

Go to cover page

Return to previous page

Go to next/previous page

See navigation guide