The Future of Water & Wastewater Process Automation

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Today's Challenges in Water & Wastewater

Managing Lifecycle Costs

Keeping up with control system updates and upgrades can be time consuming and distract from the plant's main priorities – supporting and optimizing the process. A system that's easy and cost effective to maintain will be critical in helping operations teams succeed and stay focused on their most important tasks.

Control System Complexity

Water and wastewater treatment plants often consist of several incompatible, legacy control systems with customized code which increases maintenance efforts and training requirements.

Demographics

Many plants are facing a knowledge gap as engineers and operators are reaching retirement and a new generation with limited experience is entering the workforce. Management teams are being tasked with finding innovative ways to bring these new team members up to speed quickly.

Integration of Package Units

In many cases, OEMs will deliver preconfigured machines or cabinets to be integrated with the control system. This can create manual reengineering work or inconsistencies in the look and feel of the operator screens between different areas of the plant

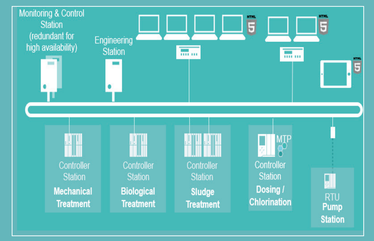
Reliability

Water is a valuable resource with critical infrastructure so IT security and up-to-date software is of the highest importance to ensure the plant remains available at all time

Addressing Inefficiencies in Automation with Innovative Control System Technology

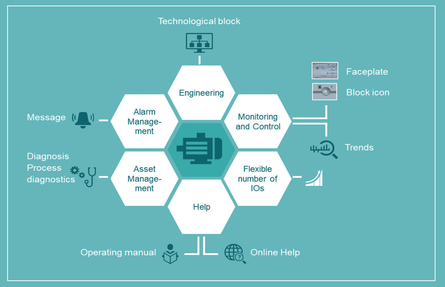
Web Enabled Control System Access

- Access both the engineering and operations environments from any client station that has an html5 web browser, such as Google Chrome
- All software and licenses are located and managed centrally on the server level, not on individual client stations, for simplified system updates and upgrades
- The plant can be easily expanded as required over time with limited installation effort when adding new client stations
- Gain mobile access to the control system with visualization and operation via tablet
- The system can reside on a local plant network and is Internet capable but does not depend on Internet connectivity



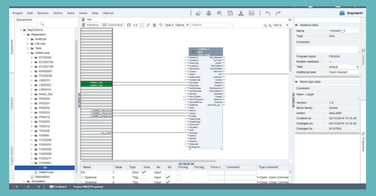
Ease of Use

- Interaction with the system follows user centric workflows instead of tool centric workflows
- All control system engineering tasks take place in a common workbench with a consistent user interface
- Single, centralized control system database so a change to one aspect of the automation project automatically updates every where within the project
- Reduces the chance for error in engineering
- Makes it a lot easier for new users to get familiar with the system and become productive quickly



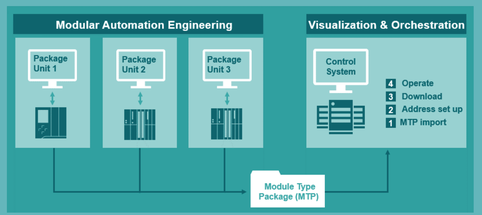
Standardization

- Standardized, water specific engineering templates for process control
- Parameterize components in pre-built libraries instead of programming the system from scratch
- Cost reduction in application development and configuration
- Problem-free integration of instrumentation, power distribution, and drive solutions into the control system
- Uniform look and feel for operation, including diagnostics and troubleshooting, across all units and operating levels
- Shorter maintenance and servicing times due to consistent engineering strategy



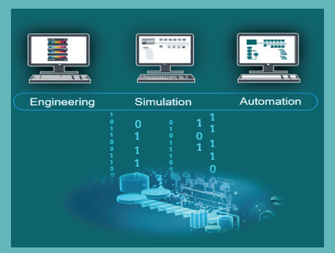
Modularization

- NAMUR, an international association of automation users, initiated the "Module Type Package (MTP) concept"
- The MTP concept provides a standard, non-proprietary description of process modules to ensure efficient integration of PLCs into an overarching control system
- The MTP is a file that contains a description of the HMI information and controller attributes of a package unit
- When imported into the orchestrating control system, operating screens and communication interfaces for the unit are generated automatically



Integrated Engineering, Automation, & Simulation

- Tightly integrated workflows and processes for easy data exchange between engineering and automation tools
- Always consistent and up to date information across all platforms
- Creates a complete digital twin that supports better engineering and operations decision making over the entire plant life cycle
- Opens up new opportunities for virtual commissioning, building operator training systems, and management of change
- Reduces risks to the process and enhances plant safety
- Offers new possibilities to store plant knowledge in a systematic manner, making it easily accessible and reproducible
- Enhances troubleshooting and process optimization capabilities



Built-In Control System Cyber Security

- Protect your critical infrastructure for reliable water supply with the Defense-in-Depth Approach to security
- Plant Security – physical access protection, develop processes and guidelines
- Network Security – cell protection, firewalls, VPN
- System Integrity – system hardening, patch management, user access management
- Conform to IEC 62443 security standards
- Secure communication based on certificates
- Controllers log all security related events and automatically forward them to a Security Information and Event Management (SIEM) server