Remote Management of Critical Infrastructure

ClearSCADA

Open, reliable and scalable software for telemetry and remote SCADA solutions

Schneider Electric

Dedicated to measuring, controlling, monitoring and collecting data across geographically-dispersed field operations, SCADA systems are undergoing major changes that put increasing pressure on the cost and risk of operating and maintaining these remote assets. Whether it is in critical infrastructure such as oil and gas, water and waste water, or renewable energy, telemetry and remote SCADA software platforms are challenged to better transform remote field data into business-relevant information that helps improve and optimise operations while minimising cost and risk along the asset lifecycle.

Increased costs throughout the project life-cycle

SCADA industries have embraced cost-saving programs such as production optimisation, standardisation of system components and maximising system availability during expansion or maintenance periods. A SCADA system should be flexible enough to accommodate future plans in an efficient and effective manner, with minimal impact on the operational system and the bottom line.

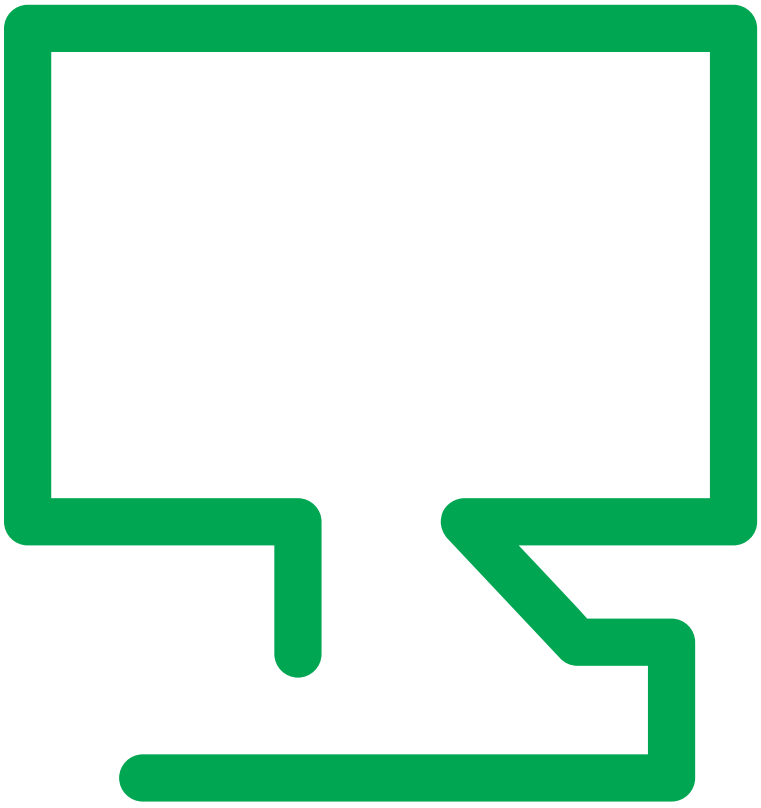
Managing data in challenging environments

To effectively gather process data from disparate sources such as remote field sensors, instrumentation and RTUs, a SCADA host must accommodate various communication media and be prepared to provide alternatives if interruptions in communications occur. On the serving side, this gathered data must be readily available to 3rd-party data-handling platforms through support of open data handling standards.

Higher risk to security system-wide

SCADA security concerns the management of system access by authorised and unauthorised personnel and ensuring that process data and control commands are not tampered with. Security affects field technicians, engineers, IT administrators and corporate. The SCADA host must provide a variety of state-of-the-art security features along with easy-to-use facilities for making use of them.

ClearSCADA is an open software platform designed for use in SCADA systems with multiple, remotely located controller and sensor installations. Historical data is collected by single or redundant servers over dedicated long-distance communication infrastructure and made available to local and remote users via integrated clients or third-party data management applications.



> Reduce total cost of ownership

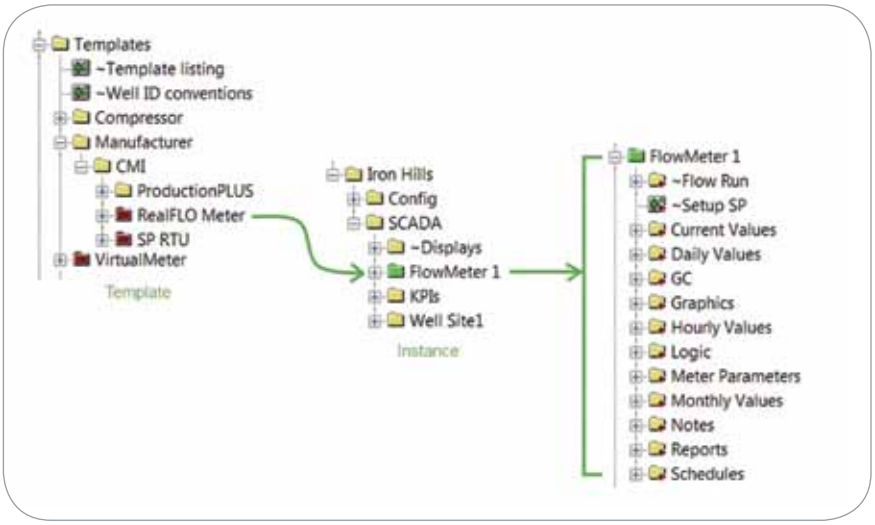
Total Cost of Ownership is a critical metric in measuring the value of a SCADA system, being a function of up-front and ongoing costs associated with product configuration, operation and maintenance. Selecting tools that lower these costs is critical. ClearSCADA helps to reduce costs across the entire SCADA system with a comprehensive feature set.

Rapid deployment

ClearSCADA helps you to expand or bring SCADA systems online with less effort, time and disruption to service. Multi-user configuration and web-based clients provide ease-of-use and coordinated system access during the deployment phase.

The object-based architecture allows reusable object templates to be developed. At a low level these objects represent single devices, such as pumps and switches, and contain all associated tags, alarms and events, as well as security and communication parameters. At a high level the objects can represent entire sub systems, such as pump stations, and are typically comprised of groups of devices. Modifications made to the source template are automatically distributed throughout the multiple instances of the template within the system.

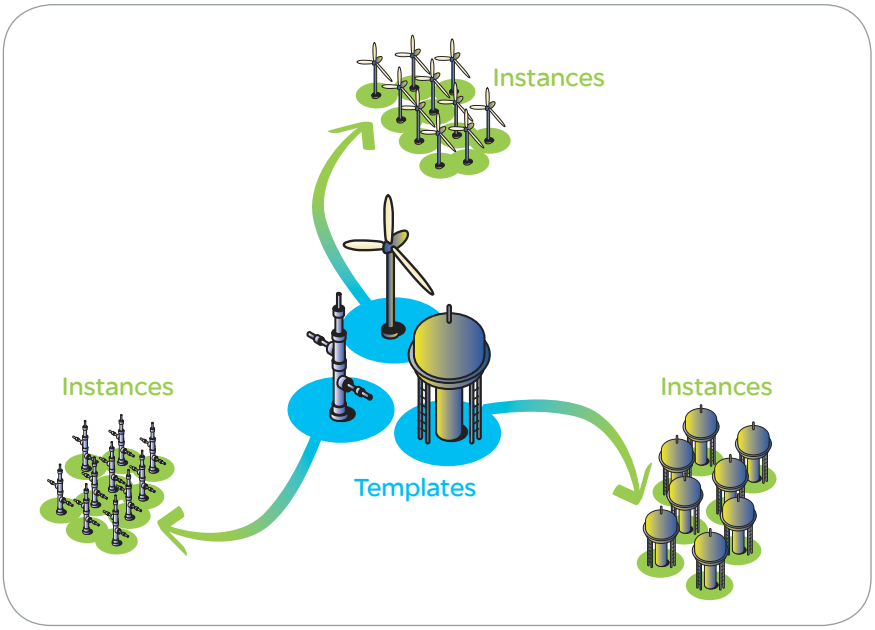
A very powerful result of the object-based architecture is that any changes to the ClearSCADA database can be made online, and do not result in operational stoppages.



• Templates can contain complex control components

75 to 90%

Engineering effort saved with configuration templates and instances

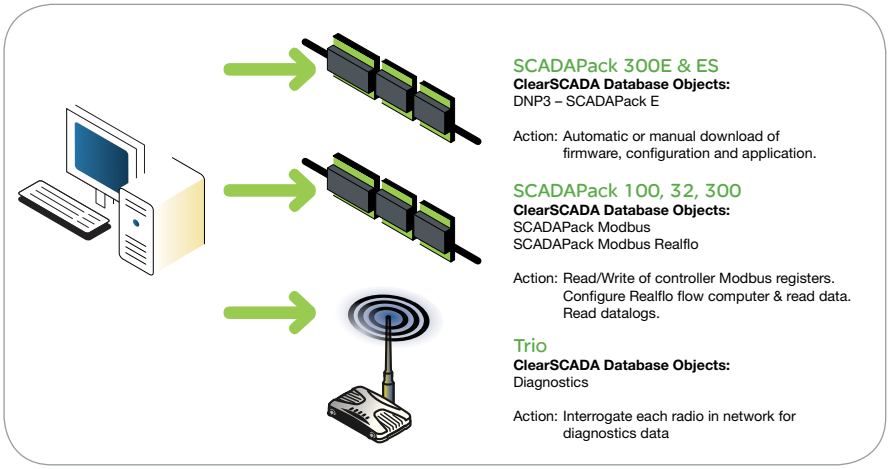


• Easy-to-replicate templates save time and money

Enhanced maintenance and operation

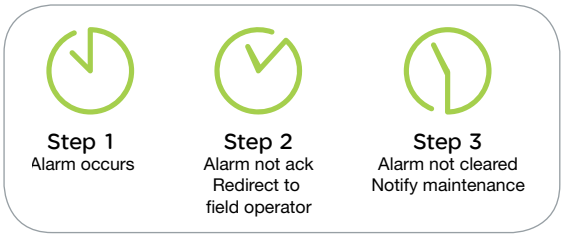
Tight integration with SCADAPack and Trio reduces site visits via centralised configuration and network diagnostic features.

Fully integrated Realflo EFM objects provide configuration and data collection directly from flow computer without Realflo GUI.



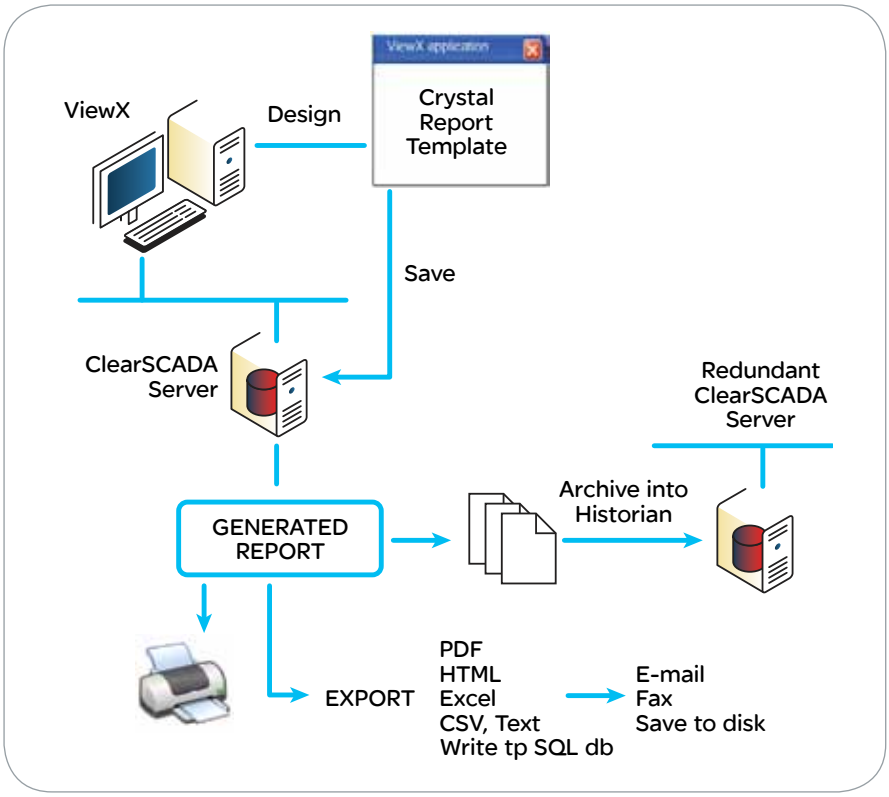
- Configure field devices from central location

Alarm redirection pushes critical alarms to E-mail and/or text messages, reducing maintenance costs through real-time notification.



- Alarm redirection process

Crystal Report run-time engine and scheduler allows for the creation and distribution of reports with preconfigured templates. Open industry standard interfaces such as OPC, ODBC, .NET enable integration with business systems.



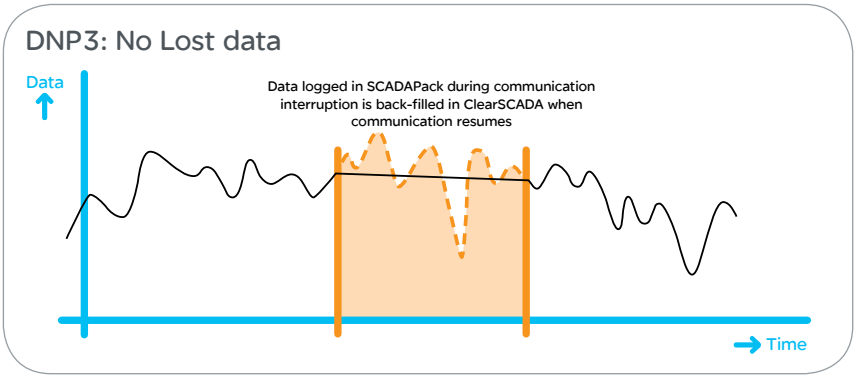
- Integrated run-time engine for Crystal Reports

> Operate a reliable and secure system

SCADA system viability is based on providing reliable and secure data. If it isn't trustworthy or reliably delivered, then it is worthless to the business and can even be a liability. ClearSCADA specifically addresses challenges relating to geographically-dispersed assets communicating over disparate media.

Ensure operations in event of failure

ClearSCADA provides tools to ensure continuous operations and data flow in the event of infrastructure failure due to natural or man-made forces. These tools include redundant communication paths, seamless backfilling of buffered RTU data, server redundancy and communication encryption. System access is monitored and controlled with a multi-user security model, based on individuals, groups and equipment type. Passwords are automatically managed and a built in event log provides a complete audit trail of security activity.

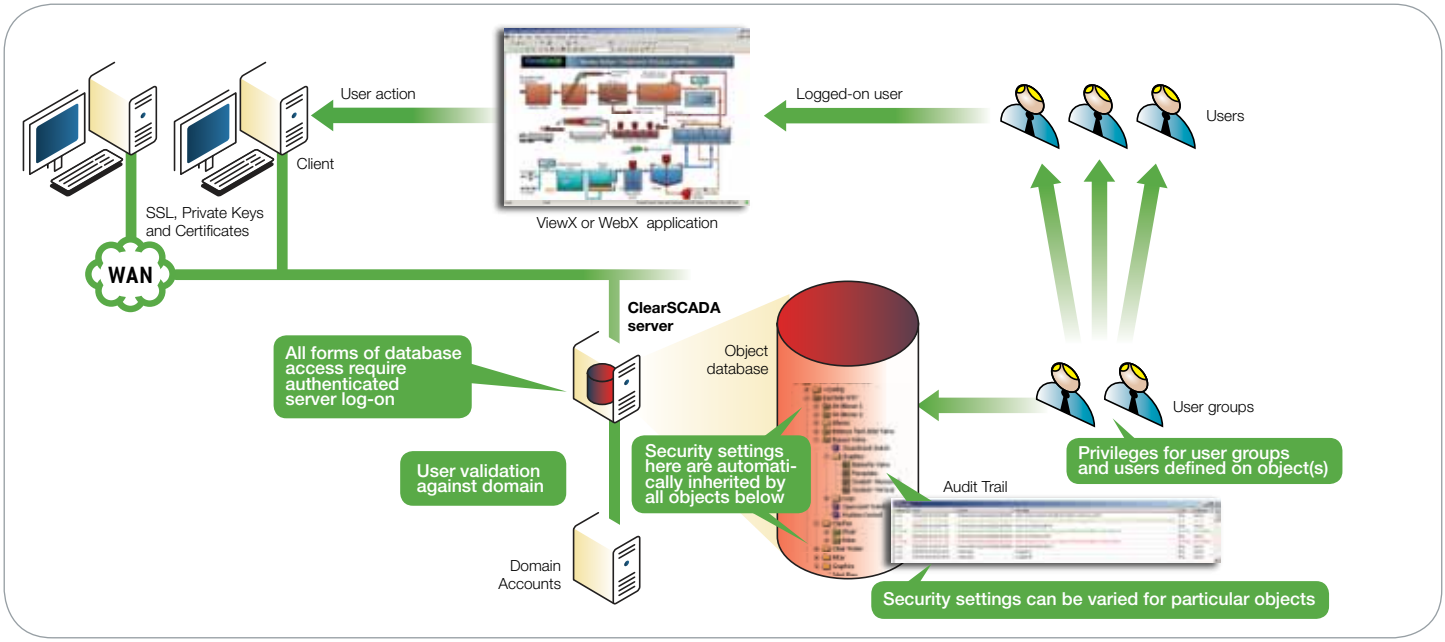


• Reliable data during communication interruptions

Security down to the object level

Users or user groups are assigned password-protected levels of access for specific features, including configuration, operation, alarms and database navigation. Security levels are configured on an individual basis or grouped together to share common configuration parameters. Object permissions, which include read and write capabilities, alarm and history control, configuration, security and system administration, are automatically carried over when an object is copied or included in a template instance.

ClearSCADA provides a video surveillance solution that monitors remote sites over Ethernet-based wide area networks.



• System-wide security

> Contributing to regulatory compliance

In recent years, government agencies have instituted stringent environmental and safety regulations with the goal of controlling or maintaining standards in these areas. Non-compliance to these regulations can be both dangerous for users and the environment; and very expensive if fines are levied.

Maintain data accountability system-wide

A major component in contributing towards governmental compliance is the ability to provide audit trails in regard to operational actions, alarms, events and system access. These audit trails typically take the form of time-stamped event and alarm logs, incident and maintenance reports, and process data records. ClearSCADA gives accountability through the use of integrated tools that ensure the reliability of data records, even in the event of interrupted communications between the field and the host.

- Event and alarm logs for process-monitoring
- Logging of all configuration changes and operational actions for detailed audit trail
- Automatic data-backfilling with select controllers ensuring that no data is lost during communication interruptions
- Flexible data presentation via, trends, tables, reports and delivery to 3rd-party data systems

Integrated Solutions for Oil & Gas ...

ClearSCADA is ideally suited for upstream production and midstream distribution where customers have many remote assets such as flow computers and RTUs. ClearSCADA includes built-in drivers and a polling engine for all major equipment manufacturers and can export flow computer data to external reporting packages, such as Flowcal, PGas or production accounting systems.

ClearSCADA is integrated with Autosol's AES Server that can communicate with different manufacturer SCADA and utility-metering devices in their native protocols over a single or multiple telemetry circuit.

ClearSCADA is tightly integrated with:

- SCADAPack gas flow computers – employ full EFM and custody transfer capabilities
- Accutech instruments – monitor wellhead and reservoir levels with rapid deploy and configure wireless instrumentation
- Trio data radios – achieve direct access to diagnostics for individual polling of key operating parameters, such as temperature, received signal strength and byte count

Key Benefits:

- AGA-3, 7, 8, V-Cone and API 21.1-compliant
- Lower total cost of ownership
- Ease-of-use, lower technical skills
- Convenient suite of graphic symbols, including API 1165
- ASP-ready, including alarms and ad-hoc trends

...and Water & Wastewater

ClearSCADA is designed for telemetry applications commonly found in the water industry such as pump up and pump down control, sewage lift station, tank/level measurement and control, and wireless instrumentation monitoring. Its real-time database and integrated polling engine means customers do not need to use a separate software package such as an OPC Server or a Master RTU as the data collector to communicate with the remote devices. The enterprise software is optimised for low and high bandwidth communication links over public networks, such as dial-up land lines, mobile networks, and WiMAX, and is well-suited for private serial and Ethernet radio networks.

ClearSCADA supports DNP3, the ideal protocol to ensure the integrity of field data, which is logged in the controller during communication interruptions and automatically forwarded to the host upon resumption.

ClearSCADA offers enhanced component integration to maximise system functionality.

- Accutech instruments –monitor tank and reservoir levels with rapid deploy and configure wireless instrumentation
- SCADAPack controllers – achieve remote configuration and application download, synchronised clocks and time-stamped data with DNP3 protocol support
- Trio data radios – achieve direct access to diagnostics for individual polling of key operating parameters, such as temperature, received signal strength and byte count

Key Benefits:

- Regulatory compliance through data integrity and audit trail
- Lower total cost of ownership
- Flexible integration through industry standard protocols
- Uncompromised system security

ClearSCADA Specifications

Server	Available point sizes: 250, 500, 1500, 5000, 25k & 50k (for >50k, contact Sales Support). ClearSCADA Server comes standard with the following: • Redundancy for standby and performance firewall servers (redundant and performance firewall servers must be purchased separately) • Drivers: SCADAPack Modbus, DNP 3, IEC60870-5-101 and -104 (master and slave), Modbus, DF1, OPC Client, SNMP, NTP, ODBC/SQL, .Net API, Kingfisher • Event-based data Historian • Alarm and event subsystem • An Integral ViewX client (can only be used on Server) • Pager/email redirector system
Server Options	• OPC Server for 3rd-party OPC client connectivity • Drivers: RealFLO EFM, Kepware, Siemens S7 (For latest available drivers contact Sales Support)
Clients	• ViewX: The ClearSCADA full-feature client. One license included with the purchase of ClearSCADA server. • WebX: The ClearSCADA “thin” client. Driven by Internet Explorer. ClearSCADA web server activation is required for each server that shall provide web access.
Licensing	• Each ClearSCADA server and ViewX client is licensed via soft key (machine dependent file) or hardware dongle (USB key). • WebX licenses use concurrent licensing model and are held on the web-enabled server.
Support	• SCADACare Annual Support Program • Gain the most from your investment with full access to all product updates, access to the technical support team and other inherent benefits.

Make the most of your energy

Schneider Electric

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