Telemetry and Remote SCADA Solutions

Optimize your remote assets.
The Challenges of Managing Remote Operations

Adaptation
As our world becomes increasingly wireless, from communication devices to entertainment equipment, so does the need for managing processes in difficult and/or hazardous locations.

Regulatory requirements
Increased attention to safety and compliance with emerging regulations are major design factors for telemetry and SCADA systems today. Governments on both federal and municipal levels continue to push for higher standards in water quality, affordable energy, and the well-managed distribution of both in a manner that sustains our natural environment.

Security
Few industries require security more than those concerned with the protection of natural resources and the management of energy. While the use of remote monitoring and control in critical processes continues to evolve, so does the need for enhanced security. Whether it is a measured value at a field instrument or the data path to the host, informational integrity can only be realized through focus on end-to-end data security.

Process optimization
Without data there is no process knowledge and without effective measurement and information transfer there is no data. Remote process optimization can only be effective when all necessary points are monitored and all data is safely transferred to stakeholders, whether human or machine.

Schneider Electric helps you face remote operation challenges with integrated end-to-end Telemetry and Remote SCADA Solutions that improve safety and security.
The Challenges of Managing Remote Operations

- Maintenance
- Engineering
- Radio Network
- Energy Operation
- Business Operation
- Asset Operation
- Third Party Supervision

Area 1
- Remote Site 1
- Remote Site 2
- Remote Site 3

Area 2A
- Area 2

Area 3
- Area 3 Line 1

Process Automation
- DCS
- Remote Monitoring and Control
- Telemetry

Plant and Infrastructure
- PLC + SCADA

Enterprise Resource Planning
- Resource Advisor
- Enterprise Resource Planning

Supervision
- Business Operation
- Asset Operation
- Third Party

EcoStruxure™
- Web Services
- EcoStruxure Enterprise Control
- HART®
- PROFIBUS
Controlling cost of ownership

Process monitoring and telemetry operations at remote sites are commonly spread across a wide area with equipment being exposed to harsh environments, making access difficult. In comparison to capital costs, the installation, operation, and maintenance of these systems is often the most significant overall expense factor in the long term. With scalability, flexibility, and ease-of-use in mind, Schneider Electric™ Telemetry and Remote SCADA Solutions are tailored to help lower this total cost of ownership.

Rapid deployment wireless instrumentation

Accutech field instruments are easy to install being self-contained with power, radio, and sensor. With the elimination of cabling, trenching, and conduit, deployment costs are reduced by up to 75% relative to wired alternatives. Together, the high-performance, long-reach, license-free radio, and long-lasting battery reduce support costs while delivering valuable data.

Easy-to-use data radio solutions

Trio-licensed and license-free data radios offer versatile wireless field networking solutions for point-to-point and point-to-multipoint networks. High performance is offered in each of a wide range of cost-effective product lines including same line frequency-hopping radios, simplex and half-duplex remotes, redundant base stations and store and forward repeaters. Our Trio radio's flexible feature set and intuitive design enable greater choice in network functionality and ease-of-use.
Flexible and efficient Smart RTUs

SCADAPack Smart RTUs™ offer flexibility through a wide range of features and options, and are easy to network, program, and maintain. They also control operating costs by keeping you out of the field with online configuration and editing of logic applications either through a dedicated development environment or through our SCADA Expert ClearSCADA host software. Innovative circuitry and firmware designs result in ultra-high efficiency modes that suit the challenges of solar powered SCADA.

Effective and intelligent SCADA host

StruxureWare™ SCADA Expert ClearSCADA is an innovative, flexible, and comprehensive SCADA host platform. From a built-in historian to alarm redirection, and from object-based templates to multi-developer environments, ClearSCADA is designed to control operational costs through quick deployment and reduced downtime.
Secure and reliable SCADA...

Safety and availability are crucial characteristics of critical infrastructure, both being dependent on their resistance to outside forces such as cyber attacks and natural disasters. This especially holds true when considering security for SCADA systems which monitor and control remote operations through a wide array of communications technologies, often choreographed by a central host. At Schneider Electric, our telemetry and remote SCADA solutions incorporate effective security at many levels, from the field to the enterprise.

Protection that starts at the source

Using DNP3 protocol with AGA12-2 message encryption helps to ensure your data is not tampered with over remote connections, from the controller to the SCADA host. With DNP3 Secure Authentication only authorized devices are able to request execution of critical commands such as setting outputs, transferring files, or changing controller configuration.

Security from the control room and remote clients

SCADA Expert ClearSCADA host software is continuously tested against current security regulations and cyber threats. Security-enhanced account and password management lets you decide right down to the object level who gets to see and control which data points within a SCADA system. Users or user groups are assigned password-protected levels of access for specific features, including configuration, operation, alarms, and database navigation. Object permissions are automatically carried over when new instances are created from templates that provide efficient scalability with reduced errors.
When it comes to managing multiple remote sites, the communication of data between field operations and the control room becomes even more crucial in making operational decisions. Telemetry and remote SCADA solutions from Schneider Electric include functionality that helps ensure your data is delivered reliably, securely, and with minimal loss.

**Reduced risk of data loss**
Whenever remote data points change, the SCADAPack E Smart RTU stores a time-stamped DNP3 event which remains in its data queue until polled or reported. This allows the SCADA Expert ClearSCADA host to poll less often and still obtain a continuous record of data history even when communication links go down.

**High level of data availability**
SCADA Expert ClearSCADA offers dual or triple redundant servers, disaster recovery sites, and remote performance servers to enhance data availability. Even LAN/WAN links and connections to remote controllers can be configured for redundant paths over different media.

**Reliable wireless connectivity**
SmartPath™ technology used in Trio radios lets system designers create a network topology that offers alternative radio link paths. The result is enhanced connectivity and redundancy without the message latency common in more traditional MESH technologies. Together with an effective range of models and performance-enhancing features, Trio radios improve the reliability and security of data radio connections.
Gain operational efficiency from field ...

Whether close by or at a great distance, your assets provide a wealth of information that is crucial to operational efficiency. From simple measurements to historical logs, every bit of information is valuable. The easier it is to capture, the more likely your operations team will make use of it. Schneider Electric Telemetry and Remote SCADA Solutions allow you to transform data into directly usable information through seamless integration of assets, from the RTUs in the field to your centralized business systems.

Easy access to business systems
SCADA Expert ClearSCADA is an open object-oriented platform with a rich suite of industry standard interfaces including SQL (ODBC or OLE-DB), OPC, and .NET giving any reporting package, such as an MIS or ERP business system, easy access to the real-time database, alarm/event journal, and historian.

True mobile access
SCADA Expert ClearSCADA Mobile provides real-time remote access to critical SCADA data, allowing system users to monitor performance while “on the move,” improving staff productivity and enhancing overall system performance. ClearSCADA Mobile gives remote users access to real-time alarms and events, including remote alarm acknowledgement, as well as historic trends and lists.

Automatic recognition, less configuration
Tight integration across telemetry and SCADA network components can yield significant operational advantages if the host software is included. SCADA Expert ClearSCADA offers pre-configured templates that are easy to setup and SCADAPack-specific objects that require less configuration while providing access to more detailed data. With the ability to detect a newly added SCADAPack Smart RTU, ClearSCADA can automatically download the required control applications and configuration. Subsequently, with automatically synchronized clocks, SCADAPack data logs are seamlessly retrieved into the ClearSCADA historian. A very powerful result of the object-based architecture is that any changes to the SCADA Expert ClearSCADA database can be made online, minimizing the effects of operational stoppages.
Real-time monitoring of network health

Effective networks offer efficiency and reliability when they are working properly, but to know when this is occurring, you need real-time access to network health information across the system. When used with SCADA Expert ClearSCADA, our products offer direct access to network communication statistics from RTUs, data radios, and field instruments as well as specific health indicators like battery status, RSSI, and temperature.

Escalated notification of alarms

Configured alarms are the most important aspect of any process monitoring but are only useful if the notification gets to the right person or machine. SCADA Expert ClearSCADA host software and FlowStation controllers provide escalated notification based on a wide range of configuration variables. If an alarm is not acknowledged within a set period of time by the console operator it can be automatically passed to the field operator. If that doesn’t work, the alarm is forwarded to maintenance personnel and so on. Web clients, SMS, and BlackBerry® browser interfaces are available to provide remote access to alarms.
Minimize risk by improving safety ...

Natural gas production and distribution, the supply of potable water and the handling of wastewater, the transfer of electrical energy across great distance; these are industries with increasing requirements for operational safety, compliance with environmental regulations, and the overall security of assets. Our telemetry and remote SCADA solutions address these crucial requirements through flexible, end-to-end integration and comprehensive feature sets.

Prevention through knowledge
Accutech wireless instruments provide crucial information by monitoring process variables that were previously out of reach for physical and/or cost reasons. Whether it is gas leak detection with an acoustic monitor, tank level measurement with the SL10 submersible, or door/hatch access detection with the SI10 switch input device, Accutech provides the enhanced process knowledge you need to mitigate the effects of crucial incidents.
Towards compliance through enhanced data security

For applications requiring traceability, our remote SCADA solutions provide extensive data-logging features to help ensure regulatory requirements for history can be met. SCADAPack Smart RTUs offer periodic or sudden burst high-speed data logging along with both onboard and external memory options. The SCADAPack E Smart RTUs, when used with the DNP3 protocol and SCADA Expert ClearSCADA, offer automatic data back-filling in case the communications network to the host is interrupted.

Assurance through certification

Accutech instruments, SCADAPack Smart RTUs and Trio radios are designed for installation in remote environments with high humidity and extreme temperatures. Our products are tested for hazardous and/or explosive-designated areas, while our gas flow computers are tested to API 21.1 standards and approved for custody transfer applications.

Event-driven video security

SCADA Expert ClearSCADA’s integrated video reporting engine adds video monitoring to your asset management applications. This cost-effective solution preserves network bandwidth by using event driven video clips triggered at the RTU.

... and regulatory compliance
Making the most of your production assets ...

Our telemetry and remote SCADA solutions go beyond remote monitoring and control by providing you the means to quickly develop and maximize the performance of your production assets. Specifically in oil & gas, Schneider Electric has a solution that optimizes your investment by extending well lifetime and increasing production.

Well production optimization

Well Production Optimization is an integrated hardware and software solution for gas production optimization. Used in single well or multi-well, pads Well Production Optimization measures and controls gas flow while monitoring separated liquids in storage tanks. Flow control modes that extend well life include manual, intermitter, and plunger lift.

This combined control and optimization platform runs on a SCADAPack gas flow computer while offering an easy-to-configure interface via local display panel, remote PC, or at the SCADA host. Many features are integrated and configurable, such as well shutdown based on storage tank levels, while others may be introduced using user developed logic.

The value of Well Production Optimization is further enhanced when combined with our comprehensive suite of SCADA products. For measuring wellhead pressures and tank levels, Accutech wireless instruments are seamlessly integrated into the Well Production Optimization platform. Trio data radios provide connection from each well pad to the SCADA Expert ClearSCADA host which includes pre-packaged Well Production Optimization templates that monitor each well and provide high-resolution trending and plunger arrival history.

From operator to the asset manager, benefits are seen at many levels:

- **Operator** — local display providing access to wells from one point
- **Automation Technician** — access to control and EFM data using standardized templates for rapid deployment
- **Production Supervisor** — regulatory compliance and timely production data for delivery commitments and forecasting
- **Production Analyst** — high-resolution operational measurements, detailed plunger arrival log, and proven optimization methodologies
- **Asset Manager** — new gas opportunities maximized during flow-back period with same day wireless measurements
Telemetry and Remote SCADA Solutions

Enterprise Asset Management, Integrated Systems

Control Room Operation

**SCADA Expert ClearSCADA**

Host software providing application templates for W/WWW processes and O&G production and integration to Accutech, SCADA, and Trio products

Process Monitoring & Automation

<table>
<thead>
<tr>
<th>Realflo EFM</th>
<th>Well Production Optimization</th>
<th>Flowstation</th>
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<tbody>
<tr>
<td>Gas flow measurement software and hardware solutions</td>
<td>Integrated hardware and software solution that increases safety, improves environmental compliance, and extends well life</td>
<td>A complete pump station controller designed for use in storm and waste water lift stations and pump-up applications</td>
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Field Devices

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<tr>
<th>Accutech</th>
<th>SCADAPack</th>
<th>Trio</th>
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<tbody>
<tr>
<td>Wireless instrumentation eliminates costly hard-wired installations with self-powered, easy-to-install field units</td>
<td>Controllers and gas flow computers combine the monitoring and communication capabilities of an RTU with the processing and data-logging power of a PLC</td>
<td>Industrial-strength data radios bring ease-of-use, flexibility, and advanced performance to the most demanding SCADA applications</td>
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Applications

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<th>Gas flow measurement</th>
<th>Water quality monitoring and data logging</th>
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<td>Tank battery management</td>
<td>SCADA software</td>
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<td>Salt water disposal wells</td>
<td>Pumping station controller</td>
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<tr>
<td>Pipeline monitoring of compressor station control</td>
<td>Pressure distribution system</td>
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<td>Wireless sensors and communication</td>
<td>Irrigation monitoring</td>
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<td>Corrosion and leakage monitoring</td>
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For more information, visit www.schneider-electric.com/us and enter key code e262u.