Improving your real-time SCADA operations with e-terra control

ALSTOM Grid’s e-terra control’s first focus is system reliability.

The first requirement of a Supervisory Control and Data Acquisition (SCADA) system is nonstop operation that functions properly under steady conditions and specially under severe critical conditions. With thousands of licenses deployed around the world for SCADA applications, gateway and communication front-end, from Substation, Windfarm to the largest National Dispatching centers, e-terra control is greatly exceeding the 99.95% industry availability standard.

Key benefits

- Cost-effective full featured SCADA
- Support of a wide range of industry standard protocols
- Flexible and Scalable, from one-box Scada solution to distributed and redundant architecture
- Standards based open platform lowering total cost of ownership
- Powerful Graphical interface, multi windows with zooming, panning, and decluttering
- Versatile highly reliable system that exceeds utility availability requirements
- Automatic configuration and restart capabilities
- Available in standard off-the-shelf or environmentally hardened Windows Servers
- Full redundancy support with no single point of failure
- Secure operational environment with optional Kerberos based Authentication, Authorization, and Audit features
- Distributed architecture support with remote viewing and operation
- Historical data management using widely available Microsoft SQL Server RDBMS
- Multi users and workstations capabilities

Customer Benefits

- Full SCADA
- Highly reliable
- Open scalable platform
- Secure operation
- Cost-effective integration
The Story

e-terracontrol is centered upon flexibility to adapt. With the Smart Grid transformation, Industry is moving with an unprecedented number of acquisition devices, including Remote Terminal Units, Intelligent Equipment devices and ever growing number of Meters.

A scalable SCADA, with capabilities to manage a wide diversity of equipment is key.

A single e-terracontrol server is capable to manage up to 256 serial lines in parallel and 2000 network-based IP connections.

In today’s changing SCADA world a system must be more then reliable and scalable, changes to the system must be integrated quickly without impacting the system’s performance or availability. e-terracontrol’s design allows for changes to occur on-line to both the database and displays while the system is running and performing critical SCADA functions.

e-terracontrol includes a wide set of advanced functions in addition to the fundamental SCADA functions, while keeping a very easy installation and fast learning curve.

- Real-time data viewing and processing
- Multiple limit checking
- Alarm processing and filtering
- Alarm acknowledgment and deletion
- Equipment and device tagging
- Flexible calculation package
- Windows based powerful user interface
- Network Topology Processor
- Network Coloring
- Abnormal state and tagging summaries
- Event and alarm logging
- Audible alarm annunciation
- Real-time trending
- RDBMS SQL Server historian
- ASCII data export and import
- Publish and subscribe data API

ALSTOM Grid has adopted a product development philosophy of using standard off-the-shelf technologies to lower your total cost of ownership of a SCADA system. e-terracontrol is written in object-oriented C++ using Microsoft’s®.Net software development toolset employing best practices in terms of quality and security.

Included with e-terracontrol is e-terrabrowser, ALSTOM Grid’s web-based full graphics display development toolkit. All tabular displays are automatically generated from the database.

The e-terrabrowser development environment allows users to build an unlimited number of graphical online displays to visualize the real-time SCADA system data and events. The toolkit allows users to configure both thick and thin user clients and optionally integrate into a web server for distribution to multiple end users simultaneously.

e-terracontrol’s base system offers enterprise-wide security with user controlled authentication and access control. When configurations become distributed and security administration becomes a concern, customer’s have the option to integrate ALSTOM Grid’s e-terratrust product which provides centralized Kerberos user Authentication, Authorization, and Audit for multi-site distributed configurations and operations.

e-terracontrol supports a wide range of standard and proprietary protocols for system integration and device communications support. Standard protocols for system integration include; TCP/IP, ActiveX, ODBC, DDE (Dynamic Data Exchange), ADO, and OLE for Process Control (OPC).

Standard data exchange protocols include the following:

- IEC 60870-5-101 Master & Slave (Serial)
- IEC 60870-5-103 (Serial)
- IEC 60870-5-104 Master & Slave (TCP/IP)
- IEC 60870-6 TASE.2 (ICCP) {TLS Security Option}
- IEC 61850 (TCP/IP)
- DNP 3.0 Master & Slave (TCP/IP & Serial)
- Modbus Master & Slave (TCP/IP & Serial)

In addition e-terracontrol supports over 30 proprietary serial RTU protocols.

e-terracontrol can simultaneously run all protocols listed.

This allows customers to integrate and operate both legacy field devices and newer IEDs in a seamless environment. e-terracontrol also allows customers to create a migration path for existing equipment and devices.

e-terracontrol requires only a server running windows on standard PC machine or Servers.

e-terracontrol can be installed also on ruggedized equipment without disks or fans.

e-terracontrol has all the features of a high end SCADA system and accommodates highly distributed multi-site operations. The e-terrabrowser user interface is networked based and can be operated remotely or locally. Multiple systems can be installed and remotely share data and controls.

e-terracontrol brings cost-effective integration into various SCADA applications

- SCADA master for power networks
- Plant Data Interfaces
- Communications Gateways
- Substation SCADA Server
- SCADA Front End
**e-terra**control includes a powerful Alarm Management System and an Alarm Pager application with e-mail, pager or audible notification.

Single points of failure can be avoided using a fully redundant configuration and **e-terra**control's high availability automatic failover and restart services.

**e-terra**control failover services automatically negotiates primary system operation and maintains an internal watchdog system with failover to the secondary system when a critical device or software process stops functioning.

This failover is almost instantaneous after failure detection and the user interfaces, operator consoles, automatically reconnect to the primary machine upon failover.

With **e-terra**control you can acquire and distribute real-time data to business users providing the entire enterprise with information necessary to make better business decisions.

With **e-terra**control you can manage your assets closer to real time and optimize operational costs.

**e-terra**control is a versatile and flexible SCADA system suited for electrical power and various sectors like Distribution Network, Wind Farms, HydroPower plants, Thermal power plant, Industrial plant, Airport, Buildings.

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**Topology and Feeder Coloring**

Topography and Feeder coloring provide a realistic operational view of your distribution network.

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**e-terra**control can model any type of industrial process, thanks to user-defined graphics and control elements.

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**e-terra**control can represent, monitor and control any type of grid.