



Substation Automation Products

MicroSCADA Pro for Network Control and Distribution Management

MicroSCADA Pro Top 8 – the facts that make you a reliable energy supplier

MicroSCADA Pro keeps you in control of your power distribution system anywhere, anytime. It provides versatile SCADA functionality and modern Distribution Management System (DMS) functionality tightly integrated in the same system. You can control your process, manage your field crew and provide outstanding service to your customers with a single system.

1. Leading functionality

MicroSCADA Pro provides all the functionality that is expected from a modern SCADA/DMS system. This functionality is based on advanced and proven algorithms, for instance for fault location, as well as for restoration and network reconfiguration. The traditional SCADA functionality, such as on-line network monitoring data, is complemented with an advanced DMS network database. This enables new real-time applications for improved network monitoring and outage management. You can instantaneously determine fault location along the feeder and present the exact fault location on a geographical map.



2. Operation and informative presentation of the network

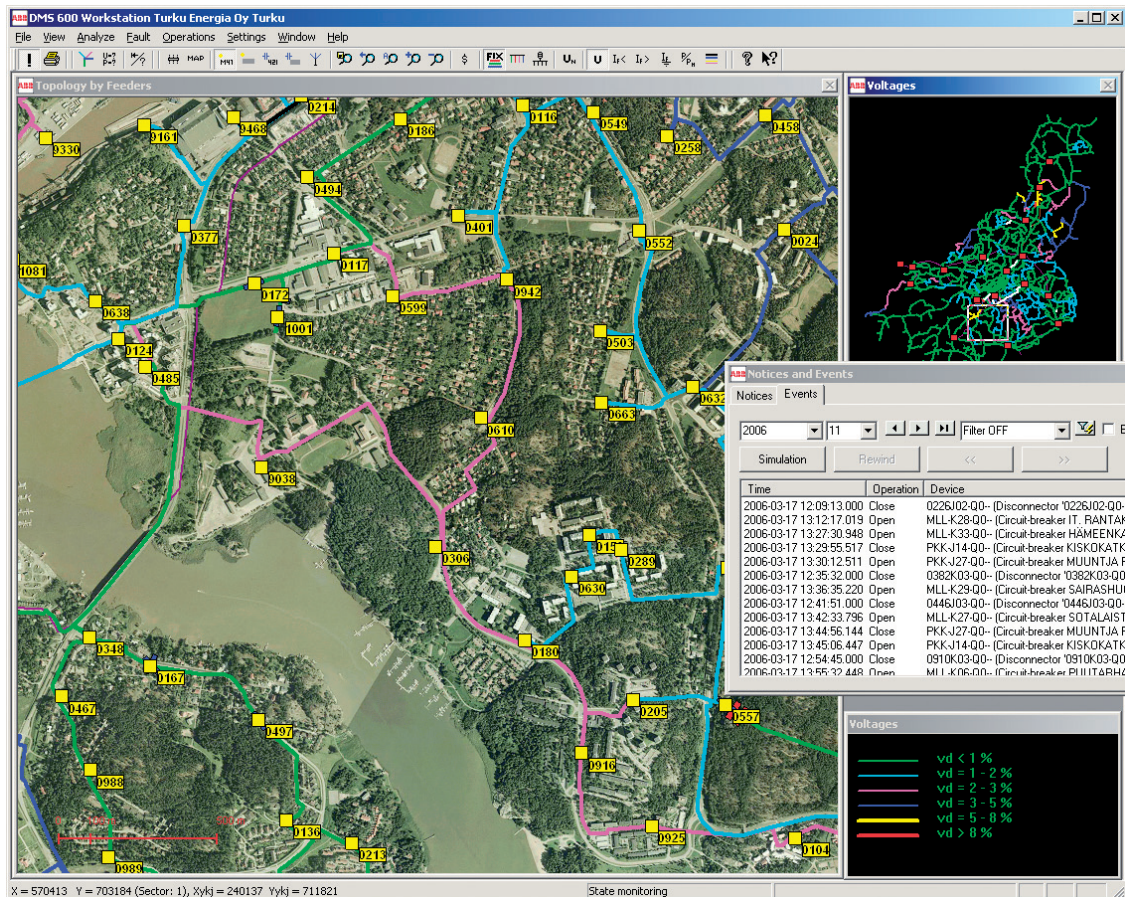
Using MicroSCADA Pro, the operator can **monitor the network state and related measurements**, and then **perform the control actions needed**. Versatile process displays, lists and application tools for network tracing, locating components and reporting provide the necessary information for different users. Dynamic line coloring delivers information about topological connectivity, powered/un-powered network sections and about overloaded lines and voltage drops.

The entire network can be viewed on detailed geographical maps in raster and vector formats, as well as in a schematic diagram. **Zooming, panning and de-cluttering** enable a clear overview and **allow users to focus on a specific area** to obtain detailed information. The functions are at hand via process displays, maps and schematic network views. In geographical views, several map layers can be used to provide the details needed. The system automatically selects the correct map layer in accordance with the current zoom level.

3. Dependable operational safety

MicroSCADA Pro **prevents simultaneous operation of primary equipment**. It reserves the device, and verifies whether the selected object can be operated, before executing the command. Additionally, **interlocking schemes** prevent dangerous operations that might otherwise damage primary equipment. Only authorized users can override interlocking and other locked operations.

Common safety procedures require that any mechanical or electrical equipment can be locked out and tagged out before being worked on. Responsible for meeting safety requirements, rules and regulations, MicroSCADA Pro includes a lock-out/tag-out function. The **lock-out/tag-out function** ensures that control of objects in the application or other operations are properly secured prior to and during, for example, maintenance or servicing work. An **application object in tag-out state can easily be identified on the HMI** by the intuitive tag-out display symbol.



MicroSCADA Pro's dynamic network coloring function provides the operator with quick access to information about the powered, un-powered and earthed parts of the network. Alarming objects are also visualized. The [network coloring, combined with object control simulation of MicroSCADA Pro](#), ensure the safe and correct operation of your electrical network.

4. Intelligent switch order management

The switch order management function supports planning, simulation, execution and reporting of scheduled maintenance outage operations. The intelligent algorithms [automatically optimize the switching sequence to minimize the number of affected customers](#). Through its operation planning functionality, MicroSCADA Pro allows both automatic and manual switch orders to open and close switching devices in the distribution network or performing other actions during the outage. Switch order documents with user-defined actions can be created based on company-specific Microsoft Word templates.

The [switching planning](#) takes the technical constraints of the network into account, such as voltage drop and load level for each line section. Furthermore, it eliminates damage to primary equipment and the network during maintenance outages by ensuring correct relay protection operation at all times.

5. Outages from hours to minutes

The [advanced distribution management functionality](#) reduces outage time from hours to minutes. The system retrieves registered data about fault currents or impedance from protection and control IEDs. It also utilizes data provided by Feeder Terminal Units (FTU) and fault indicators. This data together with the network model is used to [calculate the fault location](#), which is instantaneously shown in the network view. Then, [restoration support provides the operator with a list of recommended actions](#), such as reconfiguration of the entire network to minimize the outage area. This allows for [fault isolation and fast and safe network restoration](#). Restoration can also be executed completely automatically.

In a fault situation, the [GPS-based field crew management enables the operator to quickly find the nearest service crew](#). With the help of the integrated geographical map, the operator can guide the crew to the fault location, where necessary manual switching operations can be performed to isolate the fault. Or the crew can access the system via mobile communications or hand-held computers, which further simplifies the entire process.

With the advanced fault management functionality, you can provide [excellent service to your customers](#). Your MicroSCADA



Pro system helps you locate the customer calling in and allows you to immediately inform the customer about the fault and its expected repair time.

[Integration of an Automatic Meter Reading \(AMR\) system](#) into MicroSCADA Pro offers the possibility to use the communication and device infrastructure created, mainly for energy metering, to also remotely monitor the low voltage networks. This function [enables spontaneous alarms to be received regarding network faults and voltage violations](#). It can also read measurement values from the energy meters. Alarms from several customer meters can be combined, and faults in the low-voltage network can be located.

MicroSCADA Pro also features a [Trouble Call Management](#) function that [stores and presents any type of customer contact](#). The function provides also customers with [information about network disturbances and collects information about the faults](#), such as the nature and location of the fault. In situations when automation is not providing the data, the customer calls can be used to infer the protection device (e.g. fuse or recloser) that has operated.

6. Extensive reporting facilities

MicroSCADA Pro provides extensive facilities for operational and measurement reporting. This enables [fast and efficient reporting of operational statistics and outages](#) to the utility's own management and external parties, such as authorities and media.

For instance, the following reports are available:

[Outage reports](#) covering faults, maintenance outages and also reclosing trips. Based on the data stored in a relational database, [various statistics and indices](#), such as SAIDI, SAIFI, CAIDI and CAIFI* can be created. Both MicroSCADA Pro and company-specific reporting tools can be used. The detailed storage of outage information even allows the retrieval of customer-specific outage histories, which can significantly improve customer service.

[Measurement reports](#) that present currents, voltages, and active and reactive power in both numerical and graphical formats. The reports can contain, for instance, five minute or hourly average values.

[Energy reports](#) in both numerical and graphical formats containing active and reactive energy data with yearly, monthly, weekly, daily and hourly statistics based on three minute average values. Individual customer outage reports can be automatically generated if requested by the authorities.

The outage reports can be stored in a relational database for further analysis and statistics. To achieve a complete view of the network condition and service quality for action planning, these reports (including e.g. frequent fault locations and device failures) can be integrated into the company's business system (ERP) or utilized in a data warehouse implementation.

*See more details in the technology summary.

7. Support for asset management

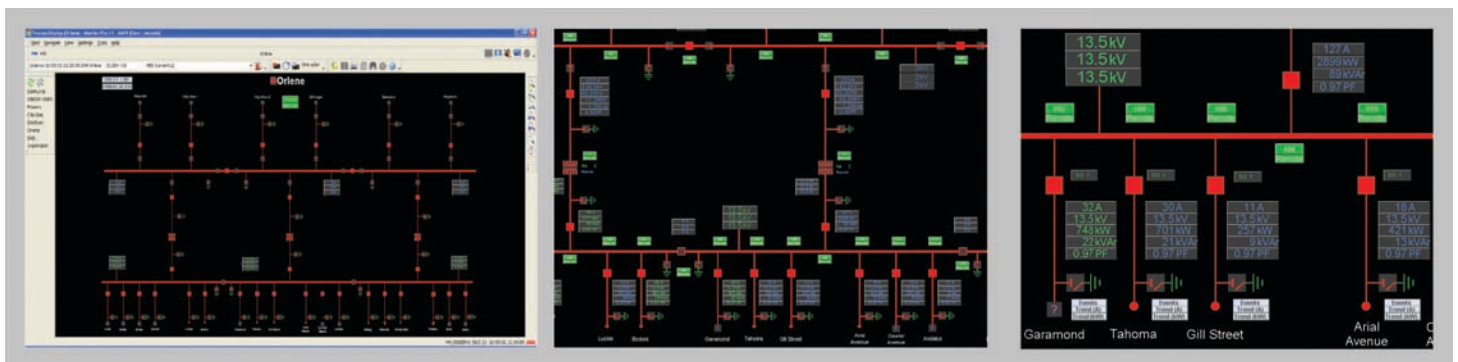
MicroSCADA Pro integrates [versatile asset management](#) support in the SCADA/DMS system. The detailed maintenance and component data in the relational database can be utilized when planning maintenance activities and component replacements.

[The network planning functionality helps you plan future network expansions](#). You can utilize your existing assets in the optimum way and make investments according to the technical requirements of the whole planning period to minimize the cost of investment and costs from power losses. When network construction according to the selected plan has started, the network model can be moved to the relational database in the SCADA/DMS system. You can also start with the network database for off-line network planning and add an on-line SCADA/DMS system later using your existing network database.

MicroSCADA Pro also [provides operators with information and alarms when your power distribution network equipment requires maintenance](#). This supports pro-active maintenance and decreases the life cycle costs of your power distribution network. For example, when a circuit breaker reaches its maximum number of operations, an alarm informs the operator that the breaker requires maintenance.

8. Energy efficiency

Energy efficiency is important from both economical and environmental perspectives. MicroSCADA Pro's [load forecasting function helps you optimize your energy purchasing and production, and network configuration](#). Additionally, the network reconfiguration function helps you find the optimum open switch configuration to [minimize power losses in radial networks and looped construction](#).



Powerful zoom and de-cluttering functions make the system easy to use and offer rapid access from overview to the finest details in your process.

Reliable power process management – in any situation

Reliable and relevant information is the basis of correct and fast decision making, as well as of safe operations. The MicroSCADA Pro SCADA/DMS system efficiently utilizes and refines data from the process, enabling you to access important information. Advanced data categorization and prioritization ensure that your operators receive the right amount of relevant information in all situations. In addition, the intelligent applications in MicroSCADA Pro provide refined fault data and suggest corrective actions.

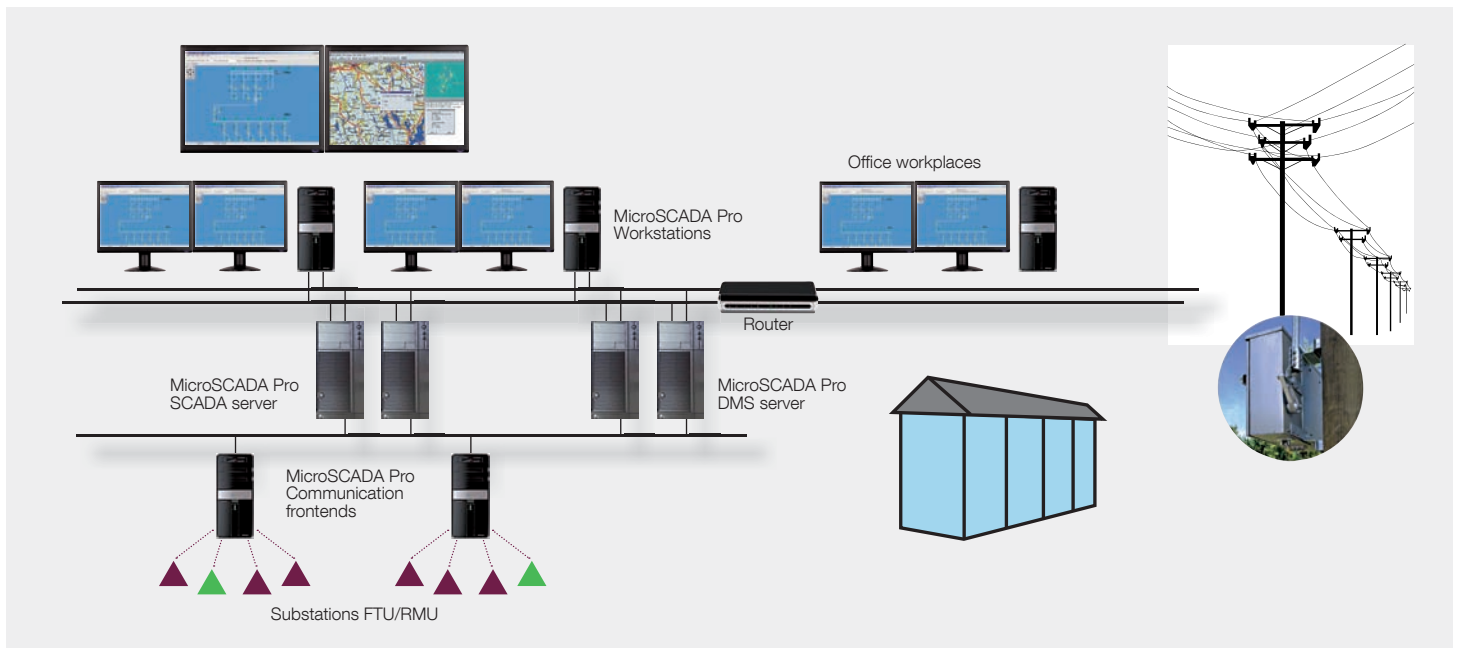
With its maintenance-free, real-time database, specifically designed for SCADA/DMS applications, MicroSCADA Pro enables smooth system operation even in extremely demanding conditions. You can change the configuration of the database and the changes will be implemented instantaneously during full operation.

Full redundancy

Constant system availability in spite of any device failure is vital. Therefore, MicroSCADA Pro supports a redundant architecture to enhance availability and to increase the reliability of the system.

MicroSCADA Pro can work in a redundant mode with two separate computers, one hosting the main application and the other one hosting the back-up application. All data is simultaneously updated in both computers and if the main computer fails, the back-ups will take over. This redundancy concept can be also applied in distributed and hierarchical systems to ensure redundancy at all levels from communication frontend computers to all upper-level computers.

SCADA/DMS Regional Control Center



SCADA/DMS Regional Control Center for monitoring large or medium distribution networks: The system consists of separate redundant DMS and SCADA system servers with connections to primary and secondary substations as well as remote controlled switches.

The system availability can be further enhanced through redundancy in communication. MicroSCADA Pro supports [redundant IEC 80870-5-101/104 communication and the Parallel Redundancy Protocol \(IEC 62439/PRP\)](#). Using redundant communication improves the fault tolerance and reliability of the communication system. It also enables maintenance of the system during operation.

MicroSCADA Pro offers [facilities for communication diagnostic and troubleshooting purposes](#). All data transmitted on the communication line is recorded and can be displayed for problem analysis. This is useful especially in system testing and when building-up new projects.

System self-supervision

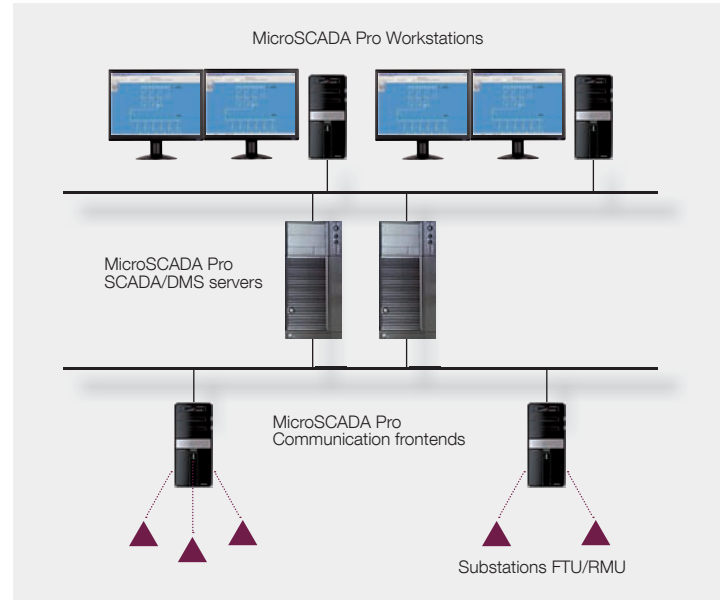
System self-supervision enables the system to always ensure the correct information for safe and fast operations. In addition to process data, it [facilitates status information about the system, system components and connected process devices](#) (RTUs and substation automation systems), as well as the [communication network status](#). The modular structure and multiple parallel processes in MicroSCADA Pro ensure that the parts vital to the system are available even if there are failures in other applications. It further features parallel execution queues with defined priorities to perform all critical tasks instantly.

High security

MicroSCADA Pro provides [a large number of cyber security features](#) ranging from advanced user account management to built-in firewall and VPN capabilities, as well as secure remote access and Anti-Virus solutions. The security features help utilities and industries to implement secure systems and to meet the requirements of possible regulations, such as the North American Electric Reliability Corporation Critical Infrastructure Protection (NERC CIP).

MicroSCADA Pro [meets the stringent security needs of SCADA/DMS systems](#) and at the same time permits information to be shared between departments and individuals within the company. Modern security technologies, such as commercial firewalls ensure continuous system security and prohibit malicious attacks and unauthorized access. For instance, the report database, which needs to be accessed by a large number of people, can be placed outside the SCADA/DMS network and protected by a firewall.

SCADA/DMS Local Control Center



SCADA/DMS Local Control Center for monitoring small distribution networks: The system consists of redundant, integrated SCADA/DMS system servers with connections to primary and secondary substations as well as remote controlled switches.

Easy to handle

MicroSCADA Pro's user-friendly concept helps you increase the productivity and quality of your operations over the entire life cycle of the system.

Comfortable in operation

Visual comfort is further enhanced by intuitive and consistent icons with selectable and pre-defined color schemes. This makes it easy to master the overall harmony of the various information displays in your interface, and get familiar with the system quickly. You can also [easily translate your application into your preferred language](#) using translation tools, and furthermore, the system can be operated in several languages simultaneously.

All for engineering

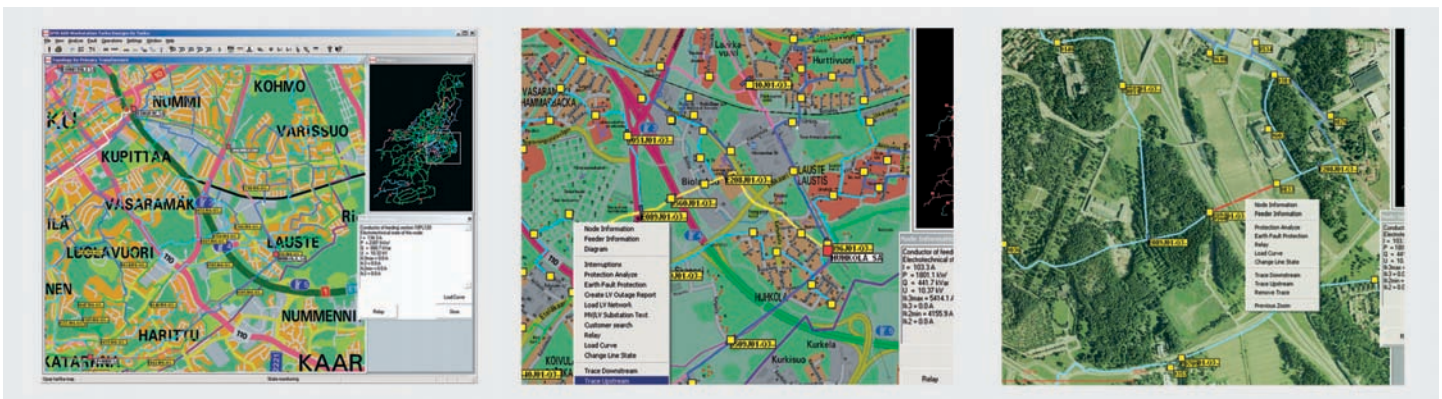
MicroSCADA Pro provides modern, [ready-to-use engineering facilities for system integrators](#), consisting of a complete engineering tool set, and libraries that include control dialogs and symbols for process objects. These [speed up](#), for instance, the [configuration of busbar and network coloring](#). You can copy/paste objects in the display builder to efficiently create substation single line diagrams, and drag and drop objects to automatically generate the process connections at the same time. This functionality also enables easy system extensions later on.

Data mirroring for hierarchical systems

A unique data mirroring functionality allows process data to be mirrored between different servers without the need for [additional signal mapping](#). This functionality can be used for designing hierarchical systems at several levels. For instance, local SCADA/DMS systems can feed process data to regional control centers, which in turn can feed process data to one main control center covering all regions. Data mirroring [can also be used to distribute processing capacity between several system servers](#) to optimize the available computer processing capacity and its use.

Navigation

In a [world map view](#), you can navigate along the network using efficient zoom, pan and de-cluttering functionalities to [adjust the amount of information presented about different areas and objects in different situations](#). From the single line diagrams of substations you can easily trace feeders or locate objects that need to be shown in the geographical view. Different colors can be used to illustrate different network voltage levels facilitating a clear overview of the network.



With the world map view of MicroSCADA Pro, detailed consumer information is just a few clicks away.

You can also [open standardized control dialogs](#) directly from the geographical view [to make the necessary control actions safely with pre-defined interlocking](#). Tools for managing protection and control IEDs, and uploading disturbance recordings, can be activated from the MicroSCADA Pro system to make changes, for instance, in parameter settings or to evaluate disturbances on the substation level.

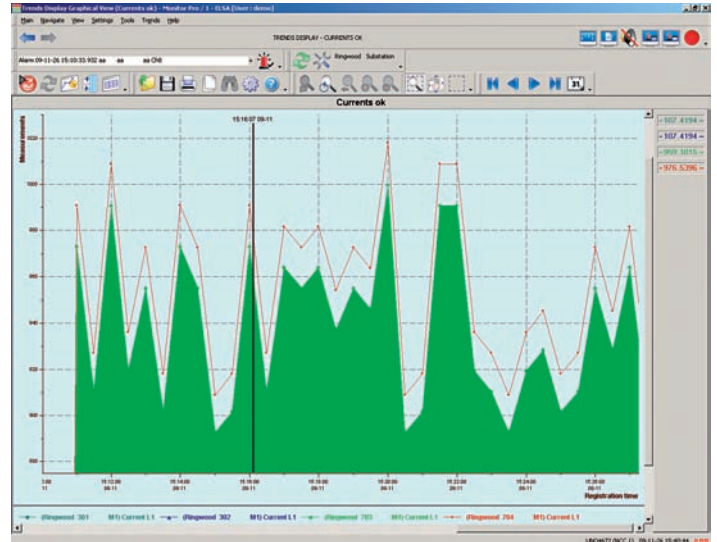
Alarms/events/trends

The views can be customized, sorted and filtered to meet the operators specific information needs enabling them to take the correct actions:

Alarm list displays the summary of the current alarm status of the supervised network, including information on alarm causes. [The alarms can be classified, sorted and filtered easily](#). Alarms can also be defined as **summary alarms**, for example alarms from a certain location or alarms having a similar functional background. Summary alarms can be additionally used in other summary alarms.

Event list supports the operator in making the right decisions and verifying that the actions taken have been successfully performed. You can also receive information about operations and activities carried out by other operators at different hierarchical levels. An operator can also add comments about events and locate the object that generated an event on the geographical map.

Trends display shows measured values as graphs or numerical tables. They can be easily created by pre-defining parameters such as measurements, time period and sampling frequency. The freely defined trends can be saved as pre-configured trends enabling you to open a certain trend picture very fast. You can use them, for instance, to [analyze the root cause of a disturbance](#), or to [make decisions on primary equipment maintenance or replacement](#).



The powerful and easy-to-use reporting function, for instance, current, voltage, active/reactive power and energy values in numerical and graphical formats. All reports can also have comments added to them and easily copied to other software tools.

Event ID	Time	Station	Bus	Device	Object Text	State Text	Event Text
388	08-11-18 10:43:152	Regenwood	301	GOO	Breaker lock closed comment	Selected	Escalated
389	08-11-18 10:43:174	Regenwood	301	GOO	Breaker lock closed comment	Operational performed	Operational performed
390	08-11-18 10:43:176	NCC 1	LMH072		Clear CBMS	Open	Open
391	08-11-18 10:43:178	Regenwood	301	GOO	Breaker position indication	Open	Open
392	08-11-18 10:43:179	Regenwood	301	MI	Current L1	Low Alarm	Low Alarm
393	08-11-18 10:43:179	Regenwood	753	MI	Voltage U2	Low Alarm	Low Alarm
394	08-11-18 10:43:180	Regenwood	301	GOO	Breaker lock closed comment	Selected	Escalated
395	08-11-18 10:43:180	NCC 1	LMH072		Clear CBMS	Operational performed	Operational performed
397	08-11-18 10:43:184	Regenwood	301	GOO	Breaker position indication	Closed	Closed
398	08-11-18 10:43:184	Regenwood	301	MI	Current L1	High Warning	Normal
399	08-11-18 10:43:184	Regenwood	301	MI	Voltage U2	High Warning	Normal
400	08-11-18 10:43:184	Regenwood	753	MI	Voltage U2	Normal	High Warning
401	08-11-18 10:43:185	Regenwood	301	MI	Current L1	Low Warning	Low Warning
402	08-11-18 10:43:185	Regenwood	301	MI	Voltage U2	Low Alarm	Low Alarm
403	08-11-18 10:43:185	Regenwood	753	MI	Voltage U2	Low Alarm	Low Alarm
404	08-11-18 10:43:185	Regenwood	301	MI	Current L1	Normal	Normal
405	08-11-18 10:43:185	Regenwood	301	MI	Voltage U2	Normal	Normal
406	08-11-18 10:43:185	Regenwood	753	MI	Voltage U2	Normal	Normal
408	08-11-18 10:43:204	Regenwood	301	MI	Voltage U2	Low Warning	Normal
409	08-11-18 10:43:205	Regenwood	753	MI	Voltage U2	Low Warning	Low Warning
410	08-11-18 10:43:20119	Regenwood	301	MI	Current L1	High Warning	High Warning
411	08-11-18 10:43:30119	Regenwood	301	MI	Voltage U2	High Warning	High Warning
412	08-11-18 10:43:30119	Regenwood	753	MI	Voltage U2	Normal	Normal
413	08-11-18 10:43:40134	Regenwood	301	MI	Current L1	Normal	Normal
414	08-11-18 10:43:40134	Regenwood	301	MI	Voltage U2	High Alarm	High Alarm
415	08-11-18 10:43:40134	Regenwood	753	MI	Voltage U2	High Warning	High Warning
416	08-11-18 10:43:50148	Regenwood	301	MI	Voltage U2	Normal	Normal
417	08-11-18 10:43:50148	Regenwood	753	MI	Voltage U2	Low Warning	Low Warning
418	08-11-18 10:44:00163	Regenwood	301	MI	Voltage U2	High Alarm	High Alarm
419	08-11-18 10:44:00163	Regenwood	753	MI	Voltage U2	High Warning	High Warning
420	08-11-18 10:44:10177	Regenwood	301	MI	Current L1	Normal	Normal
421	08-11-18 10:44:20189	Regenwood	301	MI	Current L1	Normal	Normal
422	08-11-18 10:44:20189	Regenwood	753	MI	Voltage U2	High Warning	High Warning
423	08-11-18 10:44:30128	Regenwood	301	MI	Voltage U2	Low Alarm	Low Alarm
424	08-11-18 10:45:00130	Regenwood	301	MI	Voltage U2	High Warning	High Warning
425	08-11-18 10:45:00130	Regenwood	753	MI	Voltage U2	Low Alarm	Low Alarm
426	08-11-18 10:45:00130	Regenwood	301	MI	Voltage U2	Normal	Normal
427	08-11-18 10:45:00148	Regenwood	753	MI	Voltage U2	Normal	Normal
428	08-11-18 10:45:00163	Regenwood	301	MI	Voltage U2	Normal	Normal
429	08-11-18 10:45:30182	Regenwood	301	MI	Current L1	High Alarm	High Alarm
430	08-11-18 10:45:30182	Regenwood	301	MI	Voltage U2	Low Alarm	Low Alarm
431	08-11-18 10:45:30182	Regenwood	753	MI	Voltage U2	Low Alarm	Low Alarm
432	08-11-18 10:45:40207	Regenwood	301	MI	Current L1	High Warning	High Warning
433	08-11-18 10:45:40207	Regenwood	301	MI	Voltage U2	Normal	Normal
434	08-11-18 10:45:40207	Regenwood	753	MI	Voltage U2	Normal	Normal

The alarm and event list gives full control of any event in the process. It features flexible column configuration and powerful filtering functions to ensure that right information is presented to the right user.

Scalable and expandable

The modular MicroSCADA Pro is today's investment for tomorrow. Its ability to adapt to your changing needs will always provide a path that takes you forward. Start with monitoring functionality, integrate additional functionality, such as control, reporting, redundancy and network topology, then plan system functionality upgrades in response to your future needs.

MicroSCADA Pro extends from substation automation to SCADA/DMS systems. By using the same software at all levels, you can reuse the substation level engineering and get the same look and feel for all your systems, which simplifies the daily work of your personnel.

A single system for multi-utilities

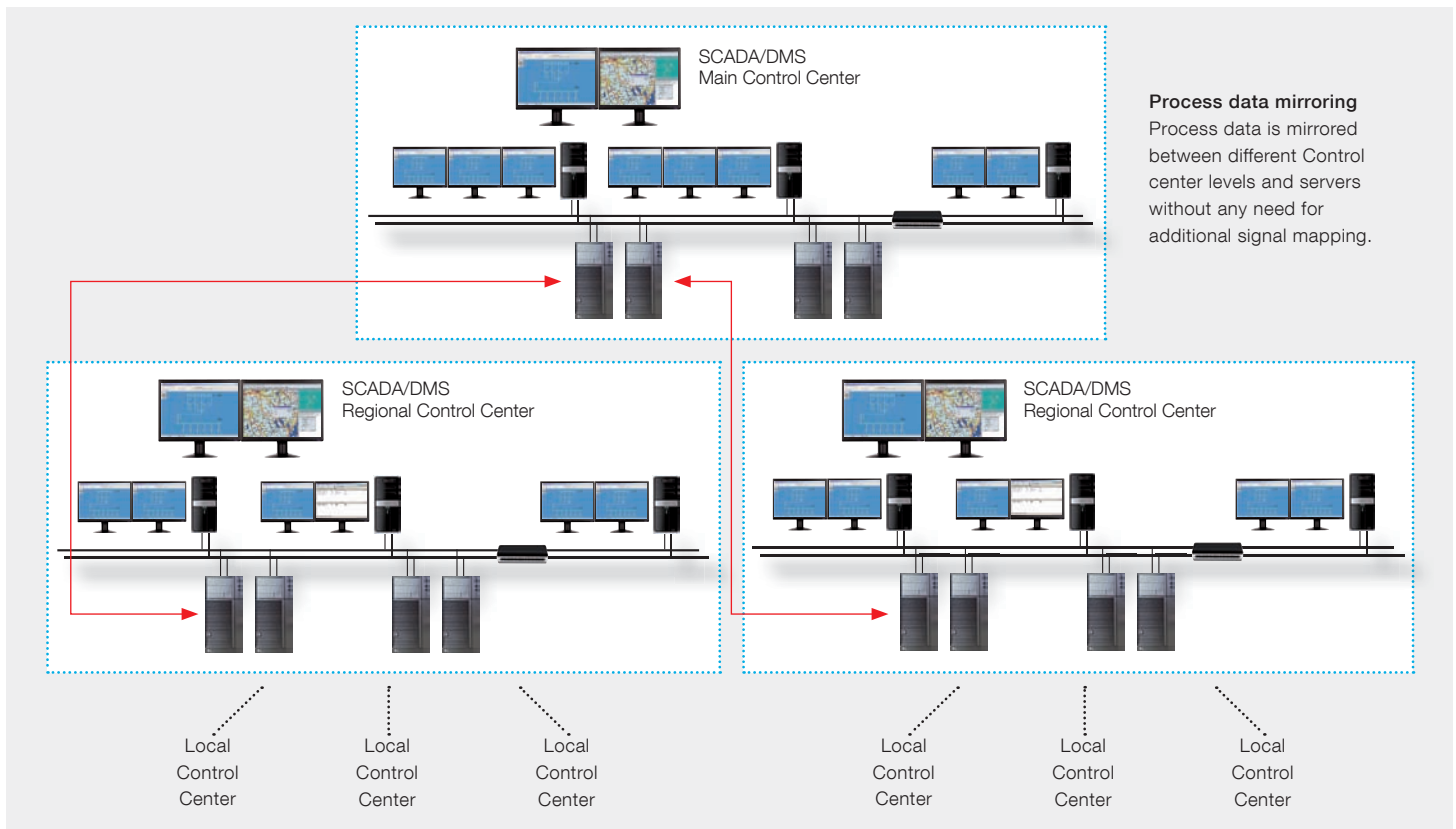
MicroSCADA Pro is optimized for managing the power process in utility and industrial environments. However, its generic SCADA services, like the extensive functionality for process displays, symbols and integration with various devices, allows other processes, such as oil and gas, water purification, irrigation and district heating systems to be managed by MicroSCADA Pro. This enables utilities in charge of several application areas to integrate them all into the same system.

MicroSCADA Pro is available pre-installed and tested at the ABB factory on solid state industry-grade PCs.

This MicroSCADA Pro SYS 600C does not contain any moving or otherwise vulnerable parts. In SCADA applications, MicroSCADA Pro SYS 600C offers an excellent solid state frontend solution with support for Hot Stand-by configuration. The large number of master communication protocols enables easy connection to RTUs, gateways and other process interface units. Robust and compact, MicroSCADA Pro SYS 600C is an ideal solution for harsh and demanding environments in different types of industries.

Easy upgrading

As it is open to system extensions, additional data points, substations and switching devices can easily be integrated into your existing MicroSCADA Pro system at any time without adding new software. All extensions can be executed on-line. Furthermore, solutions from compact to distributed systems are available. This means that your system server, databases, workstations, and communications front-ends can be installed either in single or multiple computers.



Future-proof investment

With MicroSCADA Pro, you can fully utilize your system's present and future potential. You get complete compatibility with earlier MicroSCADA versions so that any existing MicroSCADA system can be easily upgraded to the latest version of MicroSCADA Pro.

When this is done, all the system specific data and applications can be taken in use without re-engineering the application. In other words, your existing application will run as it is in the new product version, thus minimizing the commissioning time and testing.

Open to integration

MicroSCADA Pro allows you to easily connect devices, systems and additional applications according to your needs.

Optimized and future-proof SCADA/DMS solutions are based on seamless device and system integration. The system supports an extensive range of standard and de facto standard communication protocols designed both for remote communication with process interface units, such as RTUs, gateways and substation automation systems, and for inter-center communication. MicroSCADA Pro also utilizes TCP/IP and COM/DCOM to provide maximum openness in terms of communication. Most of the supported communication protocols are available both in master and slave modes.

Standard interfaces allow external applications to be integrated. You can, for instance, easily integrate 3rd-party systems and legacy systems through OPC, and still operate the network efficiently and safely. Transfer of network data can be based on DXF/DWG files or using links between relational databases.

The modular structure of MicroSCADA Pro together with open interfaces, enables flexible integration of DMS functionality. The DMS functionality can be easily integrated and used together with other SCADA systems. In the same way, you can integrate and interface SCADA functionality with DMS functionality from other suppliers.

Benefit from new technologies

MicroSCADA Pro runs on both standard PC technology and industry grade PCs, allowing you to benefit from the latest PC technology and related equipment. You will gain increased processing capacity, storage technology with high availability, as well as new communication solutions. These features are especially useful when you have to increase system capacity, when extending the network or increasing system availability.

MicroSCADA Pro supports the latest Windows® operating systems, which allows easy integration with other applications and exchange of information. AutoCAD drawings, documentation, and Excel sheets can be attached to objects, opened and edited directly via MicroSCADA Pro displays, for instance via single line diagrams. Windows® component technology is available so that Office applications can be used to automatically generate switch order directives. Additionally, remote access and mobile technologies (e.g. GPRS) let you control your power network anywhere anytime.



Global experience at your service

ABB has a long track-record of innovative solutions for power systems. As a leading supplier of SCADA/DMS technologies we can offer global presence, application knowledge and local expertise to help you maximize the reliability of your power distribution network.

Thousands of systems

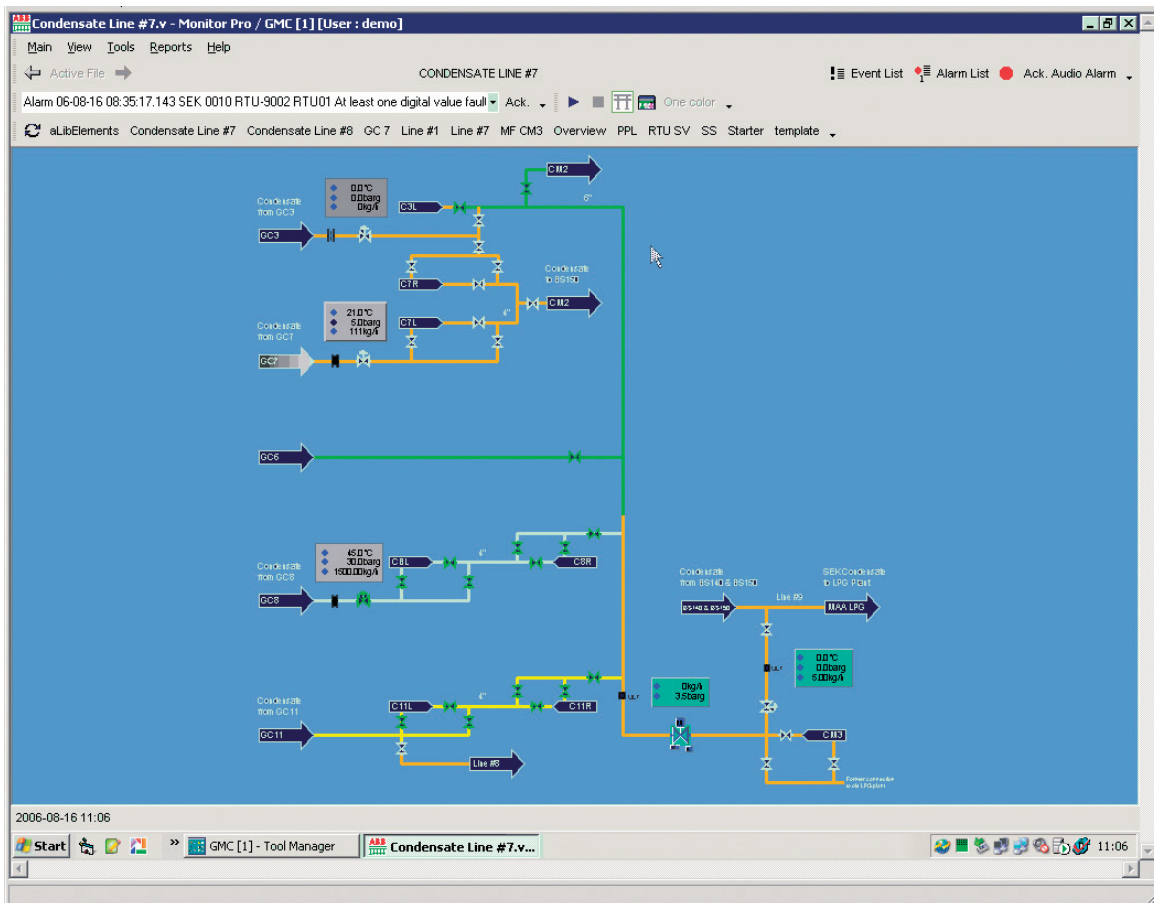
We have delivered thousands of MicroSCADA Pro systems, from substation automation to SCADA/DMS systems, all over the world. The functionality and performance of MicroSCADA Pro are verified in the ABB system verification laboratory together with protection and control IEDs and other system components. This together with close cooperation with our customers over the years has made **MicroSCADA Pro a proven solution for any SCADA/DMS system, including complex hierarchical systems.**

World-class support

ABB is committed to supporting your systems over their whole life cycle. Migration paths with the maximum reuse of your existing solutions are available.

More than 1,000 MicroSCADA Pro engineers in over 50 local engineering centers are prepared to serve and support you in your local language with local knowledge. Additionally, our versatile standard courses and fully customized training programs ensure that your engineers and operators can fully utilize their **MicroSCADA Pro system.** Our training courses include extensive hands-on sessions and well-documented exercises. Also, an off-line MicroSCADA Pro simulation system can be implemented according to your requirements or using a standard demonstration application. The simulation system allows you to simulate different types of network conditions and situations, for instance prior to network reconfiguration.

As a result, your personnel will be well prepared to both handle the system during daily operation, as well as to manage any type of disturbance situation.



MicroSCADA Pro for SCADA/DMS Technology summary:

Functions & features

- Process displays with network coloring, zooming, panning and de-cluttering
- Event, alarm and lock-out/tag-out lists
- Trends
- Extensive reporting facilities
 - e.g. measurement, outage and energy reports
 - support for creation of various statistics and indices, such as SAIFI (System average interruption frequency index), CAIFI (Customer average interruption frequency index), SAIDI (System average interruption duration index) and CAIDI (Customer average interruption duration index)
- System supervision
- Setting of relay parameters
- Uploading and evaluation of disturbance record files
- Power-quality monitoring
- Network modelling and connectivity analysis including manually controlled switches, line cuts and temporary earthings
- Network topology and tracing functions (upstream and downstream) with switch state simulations
- Rapid network analysis, including load flow and fault current calculations and check of protection coordination
- Accurate state estimation and load forecasting for network monitoring, operations planning and contingency analysis
- Advanced operation planning for scheduled outages
- Efficient reconfiguration support for minimizing power losses
- Quick and accurate fault location based on fault distance calculation and/or fault indicator data
- Manual/automatic fault isolation and restoration
- Outage reporting and statistics for fault and maintenance outages and reclosings
- Simulation of switching actions, fault situations and historical events
- Versatile network data management and analysis for asset management
- Geographical network presentation with background maps
 - versatile navigation capabilities
 - dynamic diagrams for detailed network views
- Customer information view and telephone answering system for trouble call management and customer service
- Field crew management with GPS (Global Positioning System) location
- Map printing function for overall network documentation and field crew support
- User-friendly customization for data contents, symbols and colors
- Possibility to add user-defined objects
- Customization of displays, signal handling etc.
- Process data mirroring for hierarchical systems
- Redundant hot stand-by system capability
- Security features to answer to IEEE 1686, NERC-CIP and other requirements
- Language support including several simultaneous operator-specific languages
- Integration with Office applications
- Standard PC hardware and Microsoft Windows® operating systems
- Remote workstations – also web-based
- Solution libraries for efficient integration with ABB's protection and control IEDs
- Standard solutions, open interfaces and protocols for integration of 3rd party IEDs
- Master protocols: DNP 3.0, IEC 61850, Modbus RTU/ASCII, Modbus TCP/IP, IEC 60870-5-101, IEC 60870-5-104, RP-570, RP571, ANSI X3.28 FD/HD, I35/P214
- Ethernet redundancy according to IEC 62439/PRP
- Open interfaces: OPC, ODBC, DDE, MultiSpeak, Application programming interfaces for application and communication extensions

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