

SIEMENS



SCADA System

SIMATIC WinCC Open Architecture

siemens.com/wincc-open-architecture



Performance in all directions

As part of the SIMATIC HMI family, the SCADA System SIMATIC WinCC Open Architecture (WinCC OA) is aimed at applications with a high requirement for customer-specific adaptations, large and/or complex applications, and projects that call for specific system requirements and functions.

WinCC Open Architecture demonstrates its performance particularly well with networked and redundant high-end control systems. From field level to control station, from machine to company head office – consistent, high-performance communication is guaranteed. High availability, reliable information, fast interaction and user-friendliness are guaranteed in every situation. Application changes can be made without any process disruption. Profitability, efficiency and security are thus always harmoniously balanced. WinCC Open Architecture demonstrates its reliability in a multitude of business-critical applications.

Ideas can be implemented in new applications quickly and easily. At the same time, the SCADA System can be developed independently in-house with its own product branding.

The specific features of this system enable WinCC Open Architecture to satisfy the highest requirements, particularly with regard to traffic solutions, building automation and public power supply (energy, water, oil and gas, etc.).

Highlights SIMATIC WinCC Open Architecture:

- Object orientation enables efficient engineering and flexible system expansion
- Distributed systems up to 2048 servers
- Scalable – from small single-user systems to distributed, redundant high-end systems with more than 10 million tags
- Platform-independent and available for Windows, Linux and Solaris
- Hot standby redundancy and Disaster Recovery System ensure the highest levels of system reliability and availability
- Platform for customer-specific solutions
- Extensive range of drivers and connection options: OPC, OPC UA, S7, Modbus, IEC 60870-5-101/104, DNP3, XML, TCP/IP

Profitability needs management

The modular construction of the scalable process visualisation and control system means a future-proof investment for plant operators. All key functions are handled with separate, autonomous performance units, known as Managers. The Managers are processes that accomplish specific tasks for peripheral equipment connection, historical data storage, the user interface, etc.



Data point parameterization:

- Data structures are organized intuitively in a tree structure
- Individual parameterizations, such as report processing, archiving, addressing, are performed in clearly laid-out parameterization panels
- Mass engineering is done in MS Excel. Import and export of configuration data is completely online
- Data points can be generated and completely configured during operation. This means you can implement self-parameterizing objects
- Integrated engineering with ETool – the standard parameterization tool enables quick, simple and cost-effective engineering. Applications can be created at the touch of a button, with no need for S7 data training.

Connectivity

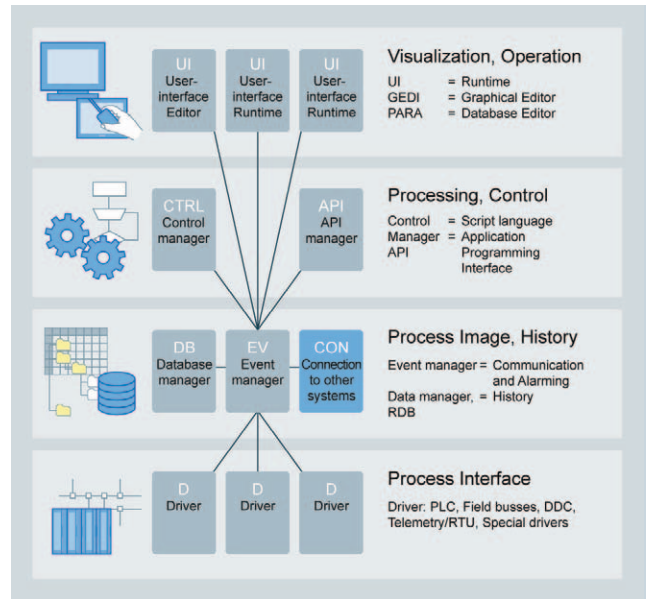
Various drivers enable a connection to be made to the automation level. Key drivers available:

Modbus Serial, Modbus Plus / RS485, RK512, TLS, Teleperm M, SSI Driver, IEC 60870-5-101, -104, DNP3, SINAUT, S7, Modbus TCP/IP, Ethernet/IP, OPC DA Client & Server, OPC A&E Client & Server, OPC UA Client & Server, SNMP, BACnet, API, Cerberus

Depending on the performance requirement, WinCC Open Architecture can run on one or more computers – with distributed managers in the latter case. The client / server architecture enables the system to be adapted to suit requirements. Windows, Linux and Solaris operating systems are supported.

Managers in SIMATIC WinCC Open Architecture:

- Event Manager (EV) – constitutes the core of the system
- Driver Manager (D) – manages the connection to field devices such as PLCs, RTUs, and DDCs
- Data Manager (DB) – saves process changes in a high-speed database
- Control Manager (CTRL) – takes care of event-controlled and multitasking-capable processing of programs/business logic
- User Interface Manager (UI) – takes care of the graphic visualisation of process statuses



Manager in SIMATIC WinCC Open Architecture

Other managers are available for specific functions such as redundancy, distributed systems, Web servers, reporting, simulation, COM, etc.

Data point concept

The flexible data point concept is a key element in WinCC Open Architecture. External and internal variables, data structures of devices, user authorizations, and display of system images or alarms are all handled via data points. This ensures consistent processing and at the same time allows for flexible adaptation to specific issues. The number of data points is unlimited.

Efficient engineering

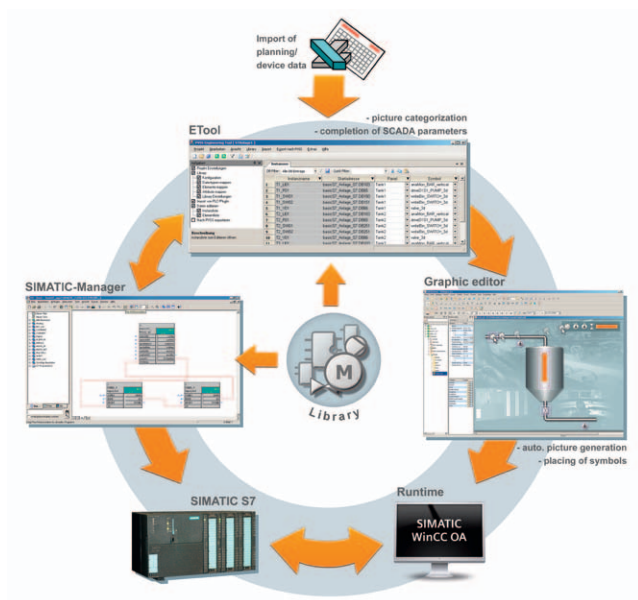
WinCC Open Architecture relies consistently on object orientation for process images and the database structure. This enables efficient and simple mass engineering and swift creation of projects with a number of parallel developments. Systematic and considered use of the object-oriented characteristics results in a change to the engineering process. In comparison with conventional methods, savings of up to 70% can often be made on engineering costs.

Engineering with WinCC Open Architecture:

- Object-oriented databases and graphics
- Importing and exporting application data
- A high degree of standardization / normalization
- Changes and enhancements possible during normal operation
- Creation of a particular „smart“ engineering tool
- Implementation of extremely complex, heterogeneous systems
- Greater convenience for project engineers and users

The ETool engineering tool makes it possible to automatically integrate SIMATIC S7 projects into the SCADA system. This standard tool enables parameterization work to be completed quickly and easily. It offers the best possible support, and the system's openness ultimately saves costs. This enables trouble-free data exchange, transferred from WinCC Open Architecture, to automatically create complete objects, contacts for all data point elements, and plant images in the SCADA project.

WinCC Open Architecture and S7 projects use simple standardizations with the help of ready-made libraries and component information from SIMATIC S7.



Engineering process with ETool



A system with a future

Distributed systems

WinCC Open Architecture offers the option of “distributed systems” for large and/or geographically distributed applications.

Distributed systems enable any number of stand-alone systems, 2 to 2048, to be linked via a network. Each subsystem can be configured either as a single-user or multi-user system, redundant or not, in each case. In this context, a subsystem means a server on which an Event Manager is running.

Each system can process and display data from the other systems. The use of distributed systems (“Distributed Database”) ensures access to online values, alarms and histories for each system.

Benefits of distributed systems in SIMATIC WinCC Open Architecture:

- Flexibility and highly scalable
- Improved performance due to parallel processing and load balancing
- Fault tolerance and consequently enhanced availability of the entire system
- Completely identical systems from parameterizing only once

Scalable structure

WinCC Open Architecture can be used at various levels in a company's automation pyramid, with HMI (Human Machine Interface) at the bottom of the pyramid, and PLCs, field buses, sensors and actors operating at field level. Directly above this level is SCADA where data from several local systems is collected and converted into regional or plant management information. Data at this level is often stored for lengthy periods in a relational database. The next and highest level is the central plant management level. This is where high-level process operation and data collection takes place. A high-performance system architecture of a modular construction forms the foundation of the entire system. This forms the basis of maximum system availability. This concept allows for one system at all levels.

Multilingualism

We offer a complete customer-specific solution. Despite standardized modules, WinCC Open Architecture is consistently designed to support use of multiple languages. Applications can be created in any language by simple parameterization, e.g. with Asian characters. The simultaneous use of different languages enables, for example, trouble-free access for remote maintenance. Development modifications or service work can be handled online from anywhere around the globe.



The right choice for total security

Redundancy concept

When short-term breakdowns result in substantial costs and problems, the highest levels of system availability and reliability are necessary. WinCC Open Architecture provides this reliability through its hot standby redundancy and Disaster Recovery System. If a unit develops a fault, continued operational management is guaranteed without any disruption. Effective provision is made for the loss of data and the problems associated with it.

Hot standby redundancy

This is a hardware-independent solution consisting of two interconnected server systems. Both servers are continuously in operation and are subject to the same function-related load. Only one server is active, while the second server is standby and reconciles run-time data with the primary unit. If a unit breaks down, an immediate switch occurs in which the previous standby server takes over operational management.

Disaster Recovery System

The Disaster Recovery System extends simple redundancy to a second redundant system, which can be switched to if a serious incident (e.g. fire or explosion in the building where the primary system is located) occurs. This additional local redundancy provides the highest possible level of reliability.

Benefits of WinCC Open Architecture:

- Reliability provided by hot standby and Disaster Recovery System
- Data security by means of duplicated data storage in two separate databases
- Testing and parameterizing with no disruption to normal operation
- Plant safety by avoiding operational disruption

WinCC Open Architecture secured by Kerberos

Kerberos provides WinCC Open Architecture with an authentication protocol, which ensures genuine and confidential communication between authorized parties. Basically, a secure server authenticates all participants in a system. Each person logs onto this server. The server verifies their identity and issues a key that participants use to recognize one another and, if necessary, to encrypt messages. This ensures integrity and complete, unmodified communication between sender and recipient.

SIL3

IEC 61508 is the international standard for the functional safety of electrical, electronic and programmable electronic systems. SIL3 of the IEC 61508 imposes significant demands on responsibilities, processes, documentation and technologies for the development and approval of safety-relevant software.

WinCC Open Architecture's SIL3 certification means that the user saves time and consequently money, as the entire approval process for the control system is made considerably easier. Obligatory design and configuration requirements are available as a guideline together with the relevant technical expertise.

Data archiving

High-performance archiving of historical data enables complete traceability of system statuses. The system offers two different archiving solutions: archiving in Value Archives (internal database format) or archiving in an Oracle database. Oracle historicization is optimized for requirements in large and sophisticated projects. However, the proven and tested WinCC Open Architecture interfaces for archive maintenance are available. System resources can be used to include and remove, parameterize, and delete archives.



Customizing

With WinCC Open Architecture you can quickly adapt the control and visualization of your plant to suit current market requirements and be one step ahead of the competition. This solution enables you to effortlessly implement new processes/ideas/visions, without having to negotiate any technical barriers. Existing systems are unaffected; WinCC Open Architecture can be integrated into the established workflow. You are spared any larger cutovers across the company as a whole. All developments can be programmed in-house, so you gain independence and your creation is automatically protected. OEMs also benefit from the opportunity to construct and introduce standardized solutions for their specific applications and/or various customers time and time again. Brand labeling is supported, so OEMs can assign brand names to their own developments.

SIMATIC WinCC Open Architecture as “Customizing factory”

- Implement new processes quickly and easily
- Swift adaptation of control and visualization of the plant to suit current market requirements
- In-house programming and developments enable independence and protection of expertise
- Construction of standardized solutions enables uninterrupted use
- Brand labeling is supported, thereby supporting individual brand names for OEMs' developments

Reference

OEM Partner Rittmeyer AG

Rittmeyer AG supplies state-of-the-art instrumentation and control technology installations throughout Europe as well as precision instrumentation systems around the world. Rittmeyer AG is a company of the BRUGG Group and is distinguished by the latest technology, leading expertise and the highest quality. The company is at the forefront of water and energy supplies and provides solutions for processes associated with the supply of water, gas or electricity, in process and environmental technology as well as for hydroelectric plants. With experience from hundreds of installations, optimal solutions can be implemented for specific problems.

The innovative and object-oriented concepts of WinCC Open Architecture prompted Rittmeyer to create their visualization system RITOP based completely on WinCC Open Architecture.

With the objective of a long-term partnership, Rittmeyer combines the development skills in SCADA with their industry expertise to produce successful applications.



Partnerships without frontiers

ETM is responsible for the development and the long-term successful implementation of thousands of applications around the world. Right from the start, its focus has been on excellent solution-orientation. ETM has long since and continuously co-operated with partners, who implement WinCC Open Architecture as OEM or system integrators. Reciprocal information exchange and comprehensive practical expertise are reflected in the effective process visualization and control system. ETM support their partner in achieving their industry's core skills and market development, whether the partner offer WinCC Open Architecture as an independent system or market his application under his own brand name. ETM guarantee a long-term partnership at the highest technical level and offer high levels of flexibility together with exclusive customer service.

The Benefit: Security of investment while maximizing the profits of the partners.

Competitive edge through partner certification

To ensure a high standard of quality for the end user, the partners complete a certification program consisting of various training courses. When a company has specialized in the integration of industry-specific solutions, the company is subsequently certified as Solution Partner or Premium Solution Partner.

SIMATIC WinCC Open Architecture partner program





Innovation creates trust

You will find WinCC Open Architecture in almost all industry sectors, from tunnel control systems to water and gas supply networks and even to CERN, the European Organization for Nuclear Research. It was here that WinCC Open Architecture held its ground during a 3-year evaluation against 100 rival competitors. The object-oriented concept and the handling of projects with data point volumes running into millions were ultimately the things that tipped the balance in its favor. All the project innovations and experiences relating to the CERN experiments were naturally fed into the product's further development, so that the customer can now reap the benefits.

The industry-specific functions are proof of the development's marketability. These functions were developed during the course of various projects and have now been incorporated as options within the product.

GIS Viewer

With this viewer, standardized maps of a Geographical Information System (GIS) can be fully integrated into the SCADA system. This makes it possible to show plant objects geographically on a map. This provides an attractive, enhanced plant overview that offers considerable benefits for the surveillance of large, distributed systems.

Advanced Maintenance Suite (AMS)

The maintenance management tool AMS is simple to parameterize and the functional scope includes efficient planning, management, execution and control of maintenance work and fault remedy. Events are evaluated by means of statistics and communicated by reports.

Video Framework

Allows video management systems to be integrated into the SCADA system. Live images from cameras and images from network recorders or external video management systems can all be used as image sources. Cameras and streams can be included online using a simple drag-and-drop function. The image display components are used to display live video streams as full image, 2, 4 or 8 images per monitor as a 4CIF image and fault notifications can, depending on the event, be shown in video streams via encoders. Video sequences can be exported and made available as an AVI file for subsequent use. The combination of SCADA and video surveillance in one system is more cost-effective than using separate video interfaces, and additional maintenance and operational expenditure are reduced. It also reduces training time for operators.

WinCC OA BACnet

The full WinCC OA BACnet package combines building management technology and a top-level SCADA system in one package, providing direct access to automation levels. This is the ideal solution for large and/or distributed building and estates management. An integrated BACnet-compliant online/offline engineering solution for building management technology, including an object library, is available. The WinCC OA BACnet option allows the user to manage the building management technology in their usual environment, without the need to do without any of the additional SCADA functionality.

WinCC OA BACnet manages the requirements of the latest building management technology and enables the implementation of future-proof and profitable concepts.



Top level supervisory system

The entire architecture is divided, for example, into a central level, a communications server level and a field level. The central level consists of a redundant server pair, an Oracle cluster, various Web servers and servers for the IT infrastructure, and an optional ERP system (e.g. SAP). The redundant server pair maintains the connection for all communication servers and “services” all user interfaces. The Oracle cluster is used as a database server to store historical process values. Web servers are needed if Web clients are used. IT infrastructure servers can include file servers, mail servers, active directory or LDAP servers, etc. The integration of ERP data into the control system and for the reconciliation of process data feeding into an ERP system (e.g. SAP) can be requested as an option. The second level consists of the communication processors. These servers can be implemented as an individual system or as a redundant system, depending on availability requirements. Depending on the number of process values or operational concept requirements, a communication system services one or more plants with all its controllers. With very large plants, more than one communication system can be deployed for each plant. This layer can now be implemented locally (e.g. in a computer center) or distributed (directly in the plant), as required. The local installation option is implemented in cases where there is a particular need to ensure local operation if the central connection becomes interrupted. The field devices or the individual controllers in the plants constitute the lowest level.

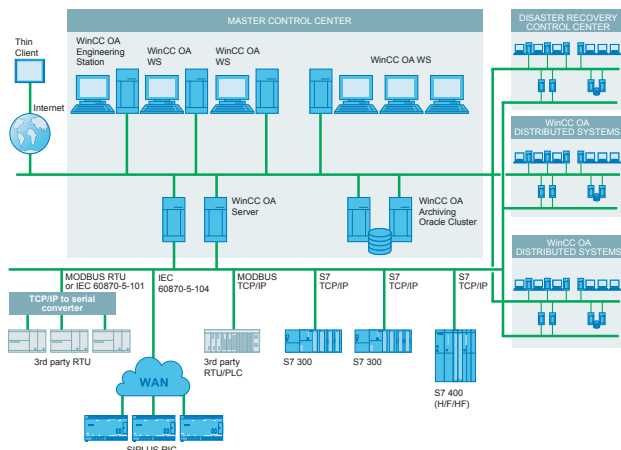
This architecture ensures scalability of the entire system across a wide area and a structure that suits the geographical conditions. Systems with millions of data points or up to 2048 geographically distributed server can be configured.

Telemetry / telecontrol technology

WinCC Open Architecture is often used in infrastructure projects. In these projects, telemetry and telecontrol technology play a key role. The SCADA system offers a variety of drivers that are specifically used in telecontrol technology:

- S7
- SINAUT
- IEC 60870-5-101
- IEC 60870-5-104
- DNP3
- Modbus TCP
- Modbus Serial
- SSI

There are specific requirements for navigation and functionality, as well as for the connection to peripheral equipment. Application functions are available for this purpose, such as the GIS Viewer to display and operate automation objects with direct geographical reference on the map, or the ACAS framework for the dynamic assignment of responsibilities to users/user groups.



Example of architecture



Key-Features

Architecture

- Object orientation
- True client-server system
- Functional separation into several managers (processes)
- Load distribution on several computers
- Redundancy (hot standby)
- Multi-Server – distributed systems up to 2048 servers
- Heterogeneous operating systems possible
- Heterogeneous versions possible
- Multi-monitor operation
- Multi-user system
- Event-orientated process
- Internal message compression possible
- Thin-Client

Process interfaces / drivers

Several different drivers can operate at the same time. Drivers can be the same type or different types.

Depending on the communications protocol and the used bus physics, specific drivers are applied respectively:

- **Serial protocols:** RK512 / 3964R, ...
- **Ethernet:** S7, Modbus TCP (Open Modbus), Ethernet IP (AB), ...
- **Telecontrol systems:** SINAUT, SSI, IEC 60870-5-101, IEC 60870-5-104, DNP3, ...
- **Multivendor interfaces:** OPC UA, BACnet, ...

The complete list is in the technical product description.

Redundancy

- Hot standby
- Disaster Recovery System (2x2 Redundancy)
- Automatic client switch over
- Automatic recovery
- Automatic process image sync
- Automatic history sync
- Automatic synchronization project data
- Redundant networks (LAN)
- Redundant peripheral component support (S7, Applicom)
- Split mode operation for updates and testing

Platforms

- Windows
- Linux
- Solaris
- Oracle
- VMware

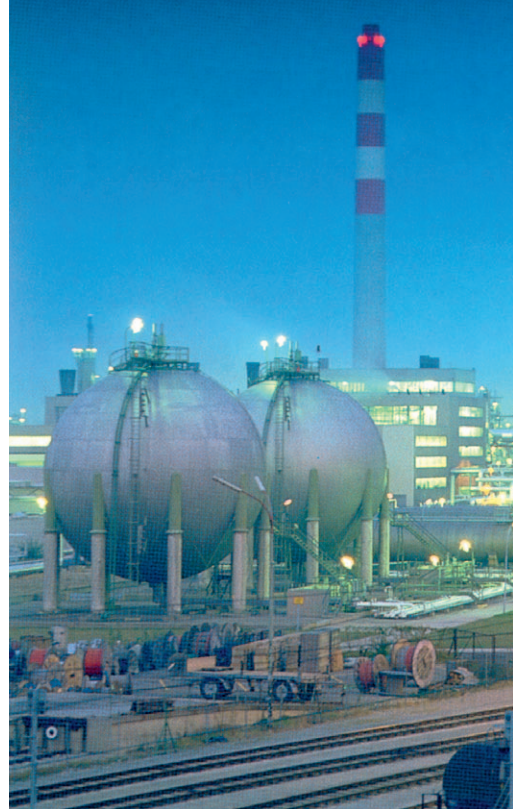
You can find the latest versions in the technical product description.

Database

- Several different archives
- Buffer to Disk
- HDB or RDB support
- Automatic administration
- Online backup
- Event-oriented
- Archive smoothing
- OLE-DB provider / SQL
- Oracle optimized RDB connection
- Data compression and synchronization directly in Oracle

Object libraries

- S7 object libraries (Basic/Advanced)
- BACnet object library
- WinCC OA Standard object library
- Framework to develop own libraries



Approved references in the targeted industries

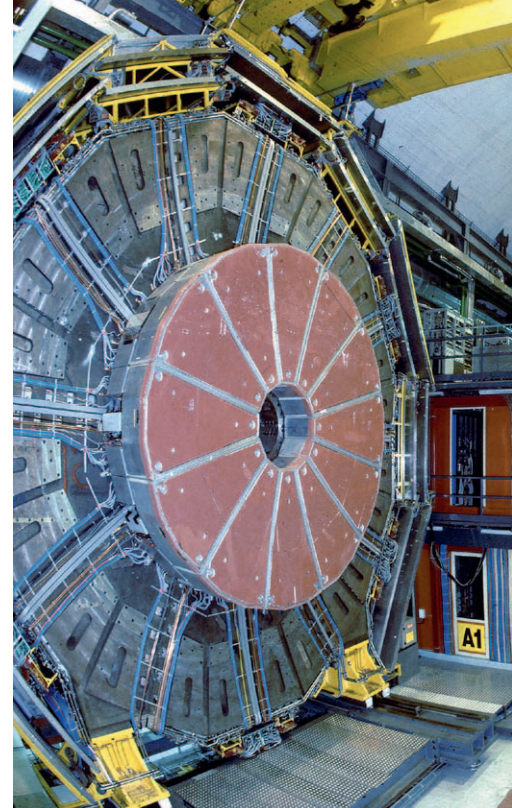
Thanks to its unique system properties, SIMATIC WinCC Open Architecture fulfills the most stringent requirements, especially for traffic management solutions, building automation and utility networks (energy, water, oil and gas, etc.).

Traffic & Transportation:

- Tramway Vienna - Power distribution system (A)
- Metro stations Vienna – Control system (A)
- Operation und traffic control system of highway Espiye – Sarp / Turkey (TR)
- Highway ring Moscow (RUS)
- Traffic control Munich (DE)
- ÖBB Railjet – Train visualization (A)
- Road tunnel St. Gotthard (CH)
- Gotthard basis tunnel – Longest train tunnel in the world (CH)
- S6 Semmeringhighway – Control center Mürzzuschlag (A)
- Metro Hamburg (DE)

Oil & Gas:

- OMV AG – ATOS (Accounting Tankfarm Organization System) (A)
- N.V. Nederlandse Gasunie (NL)
- West-East Pipeline China (CN)
- ROHÖL AUFSUCHUNGS AG – Control system for natural gas storage facility Puchkirchen (A)
- Diamond Key – Loading- and Tankfarm systems (AUS)
- Gas supply Unterland (DE)
- LongGang Gasfield China (CN)



Energy:

- Visualization and operating level of coal- and gas-fired power station – Timelkam (A)
- Waste incineration plant Thun - AVAG (CH)
- District heating Vienna (A)
- Center for the integrated utilities network – Albstadtwerke (DE)
- AVAT – Biogas research facility Eningen (DE)
- Thermal heating plant – District heating Beograd (RS)
- Control center for Power-, Gas- and Water supply HERA (IT)

Water & Wastewater:

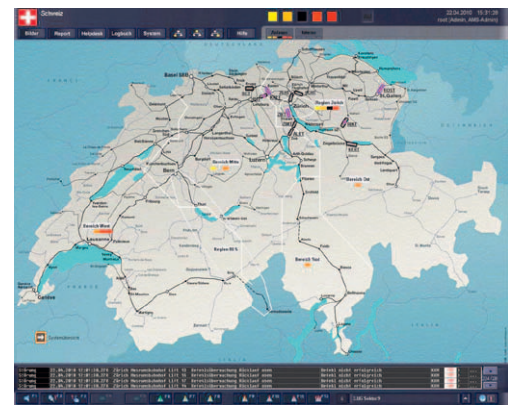
- State water authority Noord-Holland (NL)
- Wastewater treatment plant Bruck/Leitha-Neusiedl/See (A)
- Wastewater treatment plant Frechen (DE)
- Water management for Delfland Region (NL)
- Wastewater treatment plant in China (CN)
- Rittmeyer as WinCC OA OEM Partner for water & wastewater (CH)
- Wastewater treatment plant Frankfurt/Oder (DE)
- Rhein-Main-Donau waterway (DE)

Building Automation:

- Building management system for Austrian tobacco plant (A)
- Energy management system for building management system owned by the government of Germany (DE)
- Control system HVAC and ancillary systems – Privatbank Basel (CH)
- Building management system for printing production Ringier Print Zofingen AG (CH)
- Control and fault reporting system for the Swiss Federal Railways (SBB) (CH)

Research:

- CERN - the European Organization for Nuclear research (Organisation Européenne pour la Recherche Nucléaire) (CH)
- Control system for the personnel safety system of the ELSA electron accelerator at the Institute of Physics at the University of Bonn (DE)
- Control system for center for Oncological Hadrontherapy (CNAO) (I)
- Therapy- and Research project MedAustron (A)



References

Siemens Switzerland AG - Industry Sector Mobility Division as subcontractor of Alcatel-Lucent Switzerland AG, part of Transtec Gotthard consortium

Tunnel control system for Switzerland's Gotthard base tunnel

The world's longest rail tunnel runs for a total of 56.8 km between Erstfeld and Bodio in Switzerland. The entire infrastructure of the rail tunnel is displayed, monitored and operated in two tunnel control centers (TCC), one each at the north and south portal. Tunnel control technology is responsible for the remote control and monitoring of all relevant functions of the electromechanical plants. OPC UA was selected as the standard interface between the tunnel control system and the electromechanical plants. In the event of a complete breakdown of the south TCC, the Disaster Recovery System automatically switches all control and management activities to the north TCC - i.e. to a separate geographical location. Use of the ETool enables efficient engineering for the large number of data points.

Siemens China Ltd. – System integrator APMA (Moore China)

Natural gas supply and distribution project in LongGang, Sichuan province, China

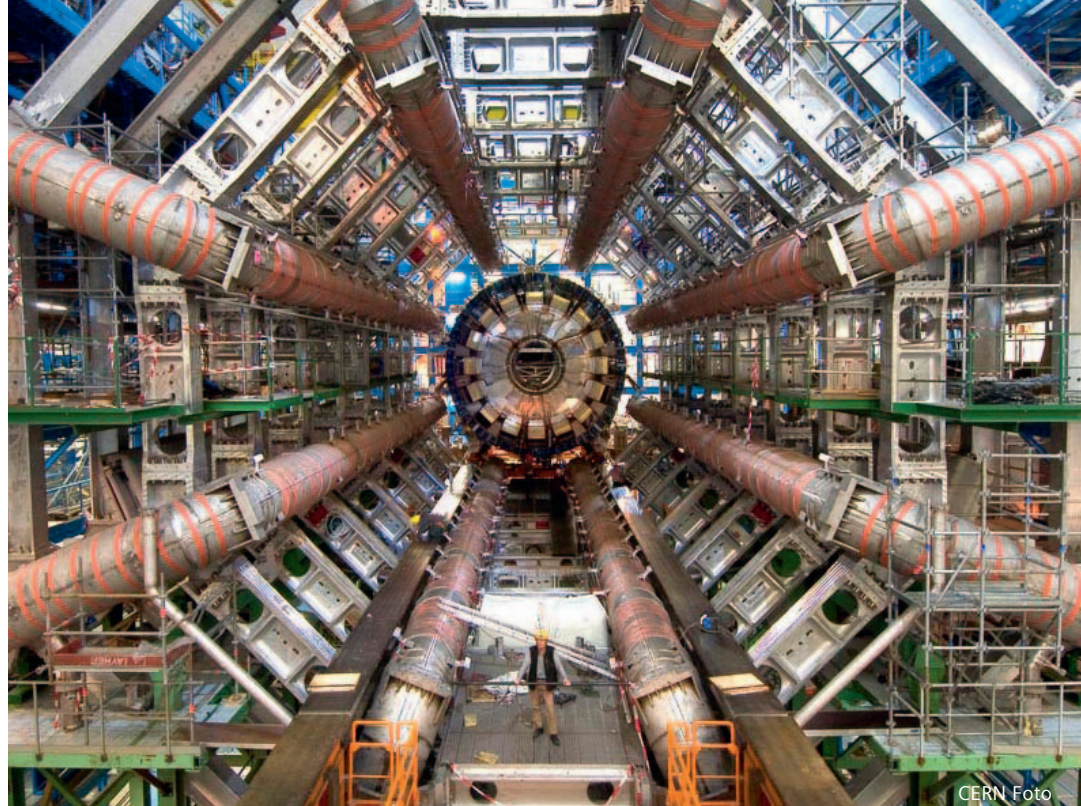
The end user, Petro China Company Ltd., is China's largest oil and gas producer and distributor and is one of the world's largest oil companies. In 2007, Petro China discovered the LongGang natural gas field in the Sichuan province. Extending over an area more than 1100 km wide and with estimated reserves of 700 billion cubic meters, it is the largest natural gas field in Asia.

WinCC Open Architecture was used for the monitoring and control of the large extensive project. In addition to a redundant server pair and 17 clients together with a Web server with 3 concurrent Web clients, the system consists of 5 local servers for the distributed gas supply stations, which are connected to a central redundant server in cool standby mode. The individual stations and RTU units are connected to the control center via a high-speed fiber optic Ethernet connection. An RDB manager was implemented for the connection to the Oracle database 10g RAC, to ensure load balancing of real-time data.

AVAT Automation GmbH

Biogas research plant in Stuttgart, Germany

The biogas research facility at the University of Hohenheim's test station at Unteren Lindenhof in Eningen uses intelligent automation technology to ensure the highly efficient generation and utilization of biogas. The SCADA system WinCC Open Architecture, installed in collaboration with AVAT Automation GmbH Tübingen, is a key component of this research project. It acts as the local control system for safe and reliable operation of the plant. A second system control facility, connected by a DSL line, at the University of Hohenheim is used for the control and observation of processes within the biogas plant and the combined heat and power plant as part of the university's teaching. The flexible, object-oriented and database-supported client/server architecture enables ambitious research objectives to be achieved.



CERN Foto

HUMIQ B.V.

Control system for Hoogheemraadschap van Delfland, the Netherlands

The Dutch system integrator HUMIQ has developed a new control system, based on WinCC Open Architecture, for Hoogheemraadschap van Delfland. The project is all about regulating dyke water levels. The SCADA system monitors and controls the water level of more than 220 geographically distributed field stations, which are connected by an ADSL and/or UMTS line. The user consequently has a complete overview and total control over their entire system. The GIS Viewer was a particular feature to be implemented in this project. It is directly linked to all relevant alarms and is completely integrated into the SCADA application. The GIS Viewer provides functions such as e.g. an automatic zoom to pending warning or alarm messages or navigation to objects in the plant images using maps. This gives the operator a quick and easy overview of the status of the field stations distributed over a wide area.

LEICOM AG

Control and fault reporting system for the Swiss Federal Railways (SBB)

The WinCC OA Premium Solution Partner Leicom AG implements control and fault reporting system based on WinCC Open Architecture for the Swiss Federal Railways (SBB). The project includes the migration of all legacy systems and the switching of 1000 stations across the whole of Switzerland. The implementation of a control and fault reporting system enables the central control and monitoring of all stations within the station infrastructure, which

considerably increases operational safety. Furthermore, the use of standardized software at automation level reduces operating and maintenance costs. Complexity is considerably reduced, thanks to the standardized and robust technology based on a small number of standard PLC products. WinCC Open Architecture was selected due to the ease with which it can be expanded, its flexible scalability, the fact that it supports multiple languages and has a platform that is independent of the hardware, as well as its customer-specific interface for import and export to the global SBB engineering tool.

CERN

European Organization for Nuclear Research (the world's leading particle physics laboratory)

CERN, the European Organization for Nuclear Research, is situated in Geneva and is the world's largest particle physics laboratory and accelerator center. For this purpose, CERN built the world's largest machine, known as the Large Hadron Collider. In addition to the control, monitoring and documentation of experiments using the Large Hadron Collider, all technical processes at CERN have been monitored and controlled by WinCC Open Architecture since 2001. Its high level of stability, impressive connectivity and system openness, resistance to the impact of external faults and excellent capacity to manage overload situations were just some of the features that significantly influenced the decision in favor of WinCC Open Architecture.

Further information:

www.siemens.com/wincc-open-architecture

Find also additional brochures and technical descriptions about SIMATIC WinCC Open Architecture on our website.

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