SIMATIC WinCC Open Architecture

www.siemens.com/wincc-open-architecture
Technical product description

SIMATIC WinCC Open Architecture forms part of the SIMATIC HMI range and is designed for use in applications requiring a high degree of client-specific adaptability, large and/or complex applications and projects that impose specific system requirements and functions.

**Scope of application**
- MMI, Operation Station
- Supervisory control station
- Production data acquisition
- Visualization
- SCADA
- Safety-relevant applications (SIL3)
- „Large Scale“ System
- Long term archiving
- Alert management system

**Architecture**
- 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 Server
- Heterogeneous Operating Systems possible
- Heterogeneous version distribution possible
- Multi-monitor operation
- Multi-Login on one workstation
- Multi-user system
- Event orientated process
- Internal message compression possible

**Alarm system**
- VDI 3699 / DIN 19235
- Freely definable alarm classes
- 255 different priorities
- Up to 255 analog alarm ranges
- Alarm colors (blinking)
- Summary alarms
- Configurable setup for message load handling
- Automatic filtering of alarms
- Panel hierarchy summary alarms
- Combined alarm- and event screen, alarm row
- Definable column set and colors
- Advanced sorting and filtering
- Storable configurations

**Process interfaces / drivers**
- Event driven or cyclic polling
- Several different drivers at the same time
- S7 over TCP/IP and MPI
- Teleperm M
- TLS (Siemens Commbox)
- OPC Client & Server (DA, A&E)
- OPC UA Client & Server (DA, AC)
- Modbus TCP
- Applicom General Driver
- Serial: RK512 / 3964R
- Cerberus
- Tele control / RTU: SSI,
  IEC 60870-5-101/104,
  DNP3 and SINAUT
- Periphery time stamps
- SNMP Manager & Agent
- BACnet over IP driver
- Dynamic Logics driver
- Additional drivers on request or via C++ API

**Data model**
- Freely definable and easy configurable structure
- Many standard objects included
- Modeling of technological objects in any hierarchy
- User definable tree structure
- Several different properties definable on elements
- Type-in-type (referencing)
- Inheritance
- Groups
- Feasibility of different views on the data model
Graphical user interface
• Drag & Drop
• Flexible window technique
• Platform neutral application
• Picture in picture
• Zooming / Panning
• Cluttering / Decluttering
• Multi-monitor operation
• Multi-selection
• True color / Synchronous blinking
• Up to 8 picture layers
• Online tool tips (multi lingual)
• Configurable panel topology

User access
• Full user access security
• Integration with Windows Active Directory or Samba 4 (single sign on)
• User groups, areas
• 32-Bit User ID
• Various permission levels
• Command protocol
• Command process control
• FDA 21 CFR Part 11

Security
• Blocking via IP-Blacklist
• System stability via intrinsic safety
• Autonomic Systems
• Authentication of Communication (Kerberos)
• Integrity of Communication (Kerberos)
• Intrinsic safety of Communication (Kerberos)
• Encryption of panels, scripts and libraries
• Security plugin mechanism (API)

Object orientation
• Referencing of symbols and objects
• Inheritance of structured data point types
• Hierarchy

Internet/Intranet
• Web Client based on browser plugin technology
• Pocket Client based on JavaScript / XHTML
• Server sided scripting
• Remote workstations
• IP access lists
• Optional : Kerberos
• Web-Server, Web alarm screen, diagnostics and reporting
• HTTPS (SSL) - Communication

Primitives & Widgets
• Line, poly line, freehand line
• Rectangle
• Polygon, Bezier curve, Circle, ellipse
• Button, cascade button, pop up
• Radio boxes, check boxes
• Text fields, frames, Textedit
• Combobox
• Selection list
• Trend, bar trend
• Table
• Tab pages
• Thumb wheel, Progress Bar, LCD Number
• DP-Tree, DTypeView
• Date / time element, Calendar object
• Platform neutral External Widgets Objects (EWO)
• ActiveX controls

Redundancy
• Hot stand-by
• 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 7 Ultimate/Enterprise (32/64-Bit)
• Windows XP SP2/SP3 (32-Bit)
• Windows Server 2003 (32-Bit)
• Windows Server 2008 R2 (32/64-Bit)
• Red Hat Linux 5 (32/64-Bit)
• Open Suse 11.3
• Sun Solaris 10
• Oracle 10g
• Oracle 11g
• VMware ESXi Server 4

Multi language support
• Several languages simultaneously
• Online language change
• Translator tool
• Asian character sets
• Unicode

Database
• Several different archives
• Buffer to Disk
• HDB or RDB Support
• Automatic administration
• Online backup
• Event oriented
• Archive smoothing
• All data types (including arrays)
• Timestamps and quality info
• User / source of value change
• Data reduction / statistic methods
• OLE-DB provider / SQL
• Oracle optimized RDB connection
• Data compression and synchronization directly in Oracle
• Compatibility under Linux, Windows and Solaris
Animation capabilities
• Foreground / background color, transparency
• Visibility, accessibility
• Rotation
• Scale (size, position)
• Geometry / shape
• Drag & Drop
• Picture in shape (WMF, EMF, XPM, BMP, GIF, JPEG, SVG, PNG)
• Animated GIF and MNG
• Mouse hover animations
• Motion of objects along freely definable paths / contours
• Texts and values
• Text color, font, style and size

Engineering environment
• Graphical editor
• Project hierarchy editor
• Database editor
• Control programming editor
• Wizards
• Search and panel preview function
• Report generator (MS Excel)
• ASCII in / out manager
• Mass data engineering
• Possibility to use an external version control package
• Integrated engineering with ETool & object library
• BACnet Browser & Data synchronisation for offline / online engineering

Object libraries
• S7 Object libraries (Basic/Advanced)
• BACnet object library
• WinCC OA Standard object library

Application programming (Control)
• Interpreter with C-syntax
• Multitasking
• Libraries and DLL’s
• Development of user defined API and driver
• Debugger / diagnostic tools
• Database access
• ADO, COM and XML integrated
• XML Parser integration
• XML-RPC-Interface
• UART- and TCP-access
• Complete access to attributes of graphical objects
• Know-How protection

Supported technologies
• ActiveX, COM, EWO
• API
• ADO, ODBC, SQL, OLE-DB
• OPC Client & Server (DA, A&E)
• OPC UA Client & Server (DA, AC)
• XML, XML-RPC
• HTTP
• TCP/IP, Kerberos
• SMTP / Pop3
• SNMP V1-2-3
• AJAX

Reporting
• Microsoft Excel based
• Time controlled, manual, triggered
• Time comparison and offsets
• Audit trail
• Automatic distribution via e-mail
• Automatic creation of web page
• Online values, history
• Compressed data, SQL, alarms
• Diagnostics-Tool

Trending
• Online & Offline
• Value versus time or value
• Bar and Time comparison trends
• Display of invalid values, alarm range and/or value range
• Tooltips
• Frequency distribution
• Configurable background picture
• Storable configurations
• Several trend areas
• Multiple or shared scales
• Ruler, automatic legend
• Difference ruler
• Time resolution in ms
• Switch during runtime between local and UTC-time
• Zoom / Unzoom of trend areas

Remote alarming
• Voice alarming via phone
• Remote acknowledgements
• SMS and E-Mail
Special Features

Recipes
Recipe management for parameter sets and set point lists. Unlimited recipe types, unlimited recipe quantities, access control, creation of recipes from real-time process data. Easy-to-use user interface. Import / export of recipes as CSV.

Scheduler
Timer and event programs with simple graphic parameterization. Cyclic and acyclic-periodic call-ups, individual events and time lists, special day rules (holidays). Arbitrary actions: value changes, recipe starts, reminders, scripts.

Web Server
Complete HTTP server for static and dynamic HTML pages. Web application with alarm screen, event screen, troubleshooting; simple creation of web reports, server-side scripting in Control. WAP interface for data viewing from modern mobile telephones.

Report
Reporting with Microsoft Excel. Direct linking enables usage as report generator and report viewer. Manual or scheduled reports, automatically saves, prints, publishes to the web or sends email. Track of changes. Please also refer to section Reporting.

Communication Center
Remote alarms and remote information. Alarm output to voice telephony, SMS, e-mail and fax. Speech synthesis module (no voice recording, no parameterization). SMS relay for stand-alone PLCs; readiness planning with alarm groups.

Secure
Third party authentication mechanism based on Kerberos, developed by MIT. Symmetric key encryption, no key word transfer. Absolute secure protection of internal and external communication.

BACnet

ETool
Integrated Engineering with ETool – the standardized engineering tool enables a fast, simple and cost efficient engineering. Generating WinCC Open Architecture applications out of S7 data – without separate training needs.

AMS (Advanced Maintenance Suite)
Advanced Maintenance Suite (AMS) is an easily parametrizable software tool for efficient planning, management, realization and control of maintenance work and equipment failures. All events can be evaluated via statistics and communicated via reports.

GIS Viewer
Full integration of standardized maps of cartographic information (GIS) in WinCC Open Architecture. Furthermore displaying of all objects in maps is possible.
- Enhanced overview due to zoom in and out
- More value through combination of regional

Web Client
This client provides a User Interface, which runs in a standard web browser, with an automatically installed plug-in. This enables a flexible remote access to the system, without installing WinCC Open Architecture. Additionally the project data are updated automatically.

Pocket Client
The Pocket Client is a Thin-Client, which also suits for remote access via mobile phone or PDA. The access is provided via web browser, without any installation. This feature is in particular used in regions, where the internet connection has less band width, because only the essential data are transmitted.

Video
Offers the easy possibility to integrate IP-cams, IP-components and complete video management systems into WinCC Open Architecture. Due to the combination of SCADA and video management in one system, the interfaces can be reduced and the cost for training, maintenance and operation is also reduced to a minimum.

Disaster Recovery System
The aim of this feature, also called 2x2 Redundancy, is to extend the WinCC Open Architecture redundancy concept through a second Hot Standby System, so that the operability of the system nevertheless remains maintained on another system even in the event of a complete failure or shutdown in the course of e.g. maintenance on the first Hot Standby System. Thus, the data loss and the idle time are kept as low as possible.
The information contained in this brochure merely contain general descriptions or performance characteristics, which may not always be applicable in the described form to the specific application case or may change due to product advancement. The desired performance characteristics shall only be binding if they are expressly specified upon contract conclusion.

All product designations may be brands or product names of Siemens AG or other sub-suppliers, whose utilization by third parties for their rights may violate the rights of the owner.