SIEMENS

SCADA System

SIMATIC
WinCC Open Architecture

siemens.com/wincc-open-architecture

Technical product description
SIMATIC WinCC Open Architecture V3.12

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. SIMATIC WinCC Open Architecture enables handling with bigger amounts of data with even smaller hardware solutions.

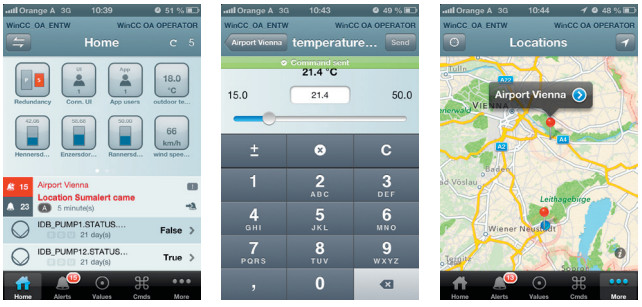
Highlights SIMATIC WinCC Open Architecture:

- Object orientation facilitates efficiency in engineering and flexible system expansions
- Up to 2,048 systems on distributed systems
- Scalable up to networked 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 guarantee highest reliability and availability
- SIL 3 certified according IEC 61508
- Platform for customized solutions
- Comprehensive range of drivers and connectivity: SIMATIC S7, XML, OPC, TCP/IP, Modbus, IEC 60870-5-101/104, DNP3, IEC 61850, Ethernet/IP, S-Bus ...

New in SIMATIC WinCC Open Architecture V3.12

SIMATIC WinCC OA OPERATOR

Enables operation and visualization of a WinCC OA installation via iPhone and iPad. The process data, availability and status of your system can be displayed. The location filtering provides a quick overview of geographically distributed systems, including sum alerts. Operating personnel have 24/7 online access to the system and can react instantly thanks to an immediate alert function. This saves precious time and ultimately enhances system availability. To configure the contents of the app quickly and easily, an intuitive wizard has been developed.



SIMATIC WinCC OA OPERATOR screenshots

Video

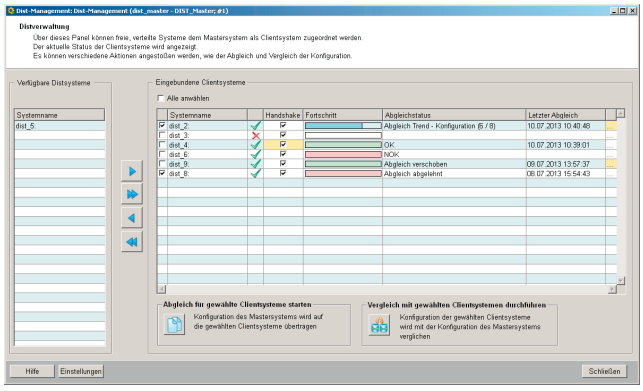
The video feature has been completely revised, and offers now a variety of connection possibilities through the use of the ONVIF 2.0 standard (Open Network Video Interface Forum). This allows the integration of video hardware from a wide range of different manufacturers. A simpler setup and higher flexibility in the application completes the renewal of the video feature.

SSL encrypted communication

From version 3.12 SSL encryption for communication of managers to each other and to all clients is used consistently. It is implemented by default in the system.

SVN integration
SVN version management tool has been integrated into the new version to simplify project engineering in large project teams. The integration into the graphical editor significantly improves the usability.

Dist-management
The Dist-management provides centralized configuration and a simpler and faster engineering in distributed systems.



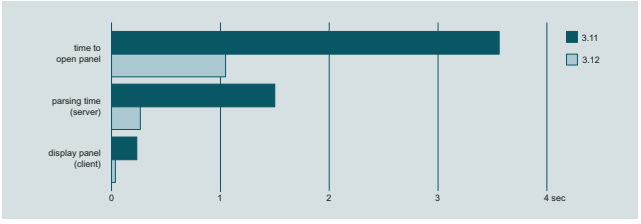
Dist-management screenshot

Multitouch
Multitouch enables intuitive operator guidance and simpler operation. Zooming, panning, decluttering and safe two-hand operation is supported.

Layout management „Responsive design“
To automatically adjust the display to the screen size during operation, the responsive design was introduced. It can be implemented quickly and easily in the graphical editor in WinCC OA 3.12.

Enhancements in the graphical editor
Object snap and alignment, anti-aliasing, shadows and rounded corners as well as new graphic objects allow a clean and efficient creation of panels.

Ultralight Client enhancements
This thin client is ideal for display in mobile devices and browsers without plug-in. With WinCC OA 3.12 the performance could be increased up to 300% and some new features were implemented: embedded modules, IFrame for an embedded display on a website, large number of new supported widgets, tool tips, touch gestures and many more.



Ultralight Client performance enhancements

New drivers
- Ethernet/IP – native driver for Rockwell Automation / Allen Bradley PLC's
- S-Bus – for connection to SAIA PCD control devices
- IEC 61850 - new communication standard for high- and medium voltage

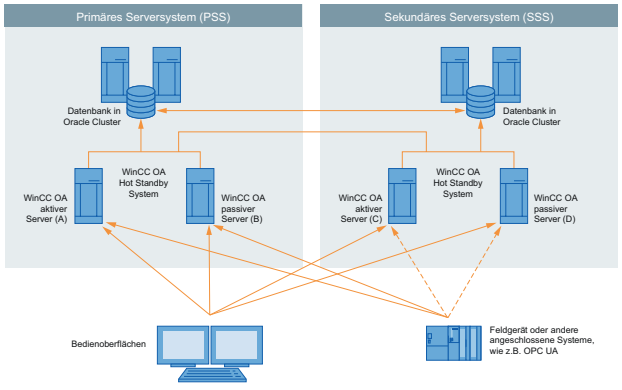
Supported operating systems
- Microsoft
  - Windows 8.1 Enterprise
  - Windows 7 Ultimate / Enterprise / Professional
  - Windows Server 2012
  - Windows Server 2008 R2
- Linux
  - RedHat Enterprise Linux 6.4
  - OpenSUSE 12.3
- Oracle Solaris
  - Solaris 10 x86
- VMWare
  - ESXi 5.5
  - ESXi 5.1

Special features of SIMATIC WinCC Open Architecture

Platforms
- Windows
- Linux
- Oracle Solaris

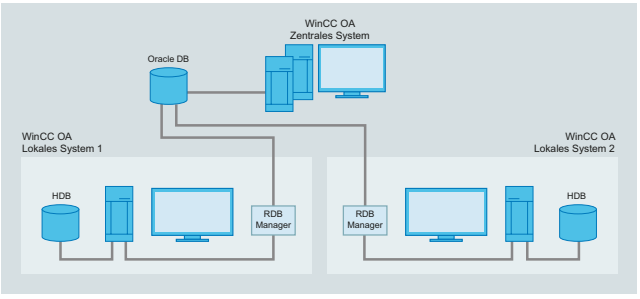
Object orientation
- Referencing of symbols and objects
- Inheritance of structured data point types
- Object hierarchy
- Direct mapping of data point types to objects

Redundancy
- Hot Standby
- Disaster Recovery System (2x2 Redundancy)
  The aim of this feature is to extend the WinCC OA redundancy concept through a second Hot Standby System. The operability of the system nevertheless remains maintained on another system even in the event of a complete failure on the first Hot Standby System. Thus, the data loss and the idle time are kept as low as possible.
- Automatic client switch over
- Automatic recovery
- Automatic process image and history synchronization
- Automatic synchronization of project data
- Redundant networks (LAN)
- Redundant peripheral component support (SIMATIC S7, Applicom)
- Split mode operation for updates and testing



Disaster Recovery System

Parallel archiving
The parallel HDB and RDB archiving enables the storage of data into the local historical database and into the central Oracle database. Local systems do not need an Oracle server installation. This archiving method is compatible with the Disaster Recovery System, historical queries and archive compressions.



Parallel archiving

Security
- Blocking via IP-Blacklist
- System stability via intrinsic safety
- Autonomic systems
- Communication (Standard: SSL encryption, Option: Secure)
- Encryption of panels, scripts and libraries

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

Safety
WinCC OA is SIL3 certified according to IEC 61508. TUEV SUED (Technical inspection agency, South Germany) approved that WinCC OA functions, development processes and supporting documents are conform to IEC standard. A guideline is provided, which describes basic and operational conditions within which WinCC OA can be used for safety critical projects as a process visualization and control system.

GIS Viewer
Full integration of standardized maps of cartographic information (GIS) with SCADA objects in WinCC OA.

Video
Offers the easy possibility to integrate IP-cams, IP-components which fulfill the ONVIF 2.0 standard and complete video management systems into WinCC OA. Due to the integration of SCADA and video management into one system, the interfaces can be reduced and the costs for training, maintenance and operation are also reduced to a minimum.

BACnet
BACnet provides an integrated BACnet conform online-/offline-engineering solution and a specific object library.

ETool
Integrated engineering with ETool – the standardized engineering tool enables a fast, simple and cost efficient engineering when SIMATIC products are used.

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.

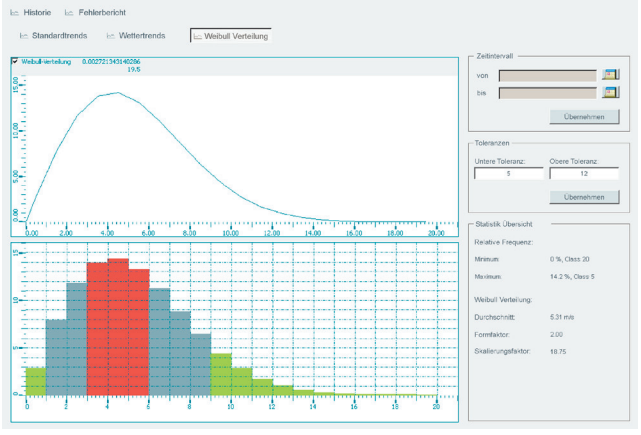
Scheduler
Timer and event programs with simple graphic configuration. Cyclic and acyclic-periodic call-ups, individual events and time lists, special day rules (holidays). Arbitrary actions: value changes, recipe starts, reminders, scripts

Communication Center
Provides remote alarms and remote information. Alarm output to SMS, e-mail and fax.

AMS (Advanced Maintenance Suite)
Advanced Maintenance Suite (AMS) is an easily configurable software tool for efficient planning, management, realization and control of reactive and preventive maintenance.

Trending
Trend widgets for integration into customized screens and a trend application (Var-Trend) as a ready-to-use trend application.
Supports:

- Online and historical values
- Value trend over time or value
- Time comparison trends
- Bar trends
- Display of invalid values, alarm range and/or value range
- Multiple or shared scales, ruler, automatic legend
- Time resolution in ms, switch during runtime between local and UTC-time
- Zoom / Unzoom of trend areas



Trend

Reporting

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

Product details
SIMATIC WinCC Open Architecture

Architecture
- True client-server-system
- Functional separation into several processes managers
- Load distribution on several computers
- Redundancy (Hot Standby)
- Disaster Recovery System
- Multi-server - distributed systems up to 2048 systems
- Heterogeneous operating systems and version distribution
- Multi-monitor operation
- Multi-login on one workstation
- Multi-user system
- Event orientated process
- Internal message compression
- Safety functions to increase reliability (overload detection and regulation, query restrictions)

Alarm system
- VDI 3699 / DIN 19235
- Freely definable alarm classes with 255 different priorities and definition of alarm colors (blinking)
- Standard, discrete and multiinstance alarms
- Up to 255 analog alarm ranges
- Summary alarms
- Automatic filtering of alarms (Handling of alarm floods)
- Panel hierarchy summary alarms
- Combined alarm- and event screen, alarm row with definable column set and colors and advanced sorting and filtering
- Storable configurations
- Direct access to the associated process window
- Comments and attended values on alarms
- Online change of alarm classes

Process interfaces / drivers
- Event driven or cyclic polling
- Several different drivers at the same time
- Periphery time stamps
- TCP/IP: SIMATIC S7, Modbus, Ethernet/IP, SNMP Manager & Agent, BACnet, Dynamic Logics
- OPC: OPC Client & Server (DA, A&E), OPC UA Client & Server (DA, AC)
- Tele control / RTU: SSI, IEC 60870-5-101, -104, DNP3 and SINAUT, IEC 61850
- Additional drivers on request or with a C++ API

Data model
- Object oriented data model with 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
- Generate different views on the data model

Engineering environment
- Graphical editor
- Project hierarchy editor (Panel topology)
- Database editor
- Control programming editor, Script Wizard
- Mass data engineering and ASCII in / out manager
- Integration of external version management tools (CVS, SVN,...)
- Simple symbols, EWOs, Stylesheets

Graphical user interface
- Drag & Drop
- Flexible window technique
- Platform neutral application
- Picture in picture
- Zooming / Panning
- Cluttering / Decluttering
- Root-, child- and embedded panel
- Multi-monitor operation
- Multi-selection
- True color / synchronous blinking
- Up to 8 picture layers
- Online tool tips (multi lingual)
- Configurable panel topology
- GUI navigation objects
- Online switchable multi language support
- UTF-8 for multi language support
- Supports the widely used graphical objects and widgets also with comprehensive animation capabilities
- Support of external widgets (e.g. ActiveX)
- Layout management "Responsive design"

User access
- Full user access security optional with integration into Windows Active Directory (Single Sign On)
- Various permission levels
- Command protocol (Audit trail)
- Conform to FDA 21 CFR Part 11

Internet/Intranet
- Web-Server, Web alarm screen, diagnostics and reporting
- Web client based on browser plug-in technology
- Ultralight client based on JavaScript / XHTML
- Supports main security functions (HTTPS, Kerberos encryption, etc.)
- mobile App WinCC OA OPERATOR

Archiving
Comprehensive archiving options
- Value archives as flat-file structure (HDB)
- ORACLE archiving
- Parallel archiving (Oracle, HDB)
- Data compression
- Correction values
- Laboratory values

Object libraries
- WinCC OA standard object library
- SIMATIC S7 object libraries (Basic/Advanced)
- BACnet object library

Application programming / Scripting
- Interpreter with C-syntax ("Control" language) and multitasking support
- Libraries and DLL´s for customized extensions of the scripting language
- Debugger / diagnostics tools
- Supports a lot of external interfaces, like: database access, ADO, COM and XML, XML Parser, XML-RPC-Interface, UART- and TCP-access
- Complete access to attributes of graphical objects
- Know-how protection (Panels/scripts encryption)

UTF-8 for multi language support
All Unicode characters can be represented in four bytes.

Multitouch
Features like zooming, panning, decluttering and safe two-hand operation are supported.

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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