

SIMATIC WinCC V7

The open and scalable system for maximum plant transparency and productivity

siemens.com/wincc-v7

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Continual functional expansions and increase in connectivity

The SIMATIC WinCC V7 SCADA software is an innovative, scalable process visualization system with numerous high-performance functions for monitoring automated processes in all industries.

Whether you have a single-user system or a distributed multiuser system with redundant servers: The system offers the user complete SCADA functionality for process visualization tasks, even of the highest complexity, up to the very latest plant intelligence solutions.

The functionality of the system can be extended and adapted exactly to your needs by means of the options for WinCC V7, WinCC Add-ons, and the universal SCADA options.

System overview:

 SIMATIC WinCC V7 basic software The foundation of a well thought-out system architecture

• SIMATIC WinCC options

Support you with a wide range of industry and technology-specific expansions and solutions tailored precisely to your requirements

PM Add-ons for SIMATIC WinCC V7

Complement your SCADA solution with powerful process management functions for optimum interaction of processes in production, quality assurance, maintenance, system integration, and for the connection to manufacturing execution systems (MES).





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A standard that's always right: your added value with SIMATIC WinCC V7

Industrial standard, tried and tested for 25 years in all industries and technologies: With the WinCC V7 SCADA system, you are equipped today for the requirements of tomorrow. With the WinCC V7 IoT Gateway, the connection to Industry 4.0 environments can be easily implemented.

It is very easy to obtain transparency about your machine and process data. With the new REST interface, they have a modern standardized interface at their disposal to process their data to MES or other applications such as Mendix/Power BI.

Efficiency

SIMATIC SCADA systems

combine efficient engi-

neering with high-per-

formance archiving and

maximum data security.

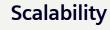
operations management

and intelligent produc-

tion analyses.

These features provide

the basis for efficient





You can use both stationary and mobile solutions to cover increasing demands – safety quaranteed. No matter how small or large your requirements are – we have the right answer and apply all our know-how from more than 25 years of SCADA experience in all industries.

Innovation

Stay informed using mobile SCADA solutions - anywhere, any time. The use of multi-touch gestures in the industrial environment opens the door for modern operating concepts. SVG graphics help you to display your project easily on your tablet (HTML 5 browser).

Openness

You can easily implement your individual and special requirements thanks to the support of international standards and system-internal script and programming interfaces.

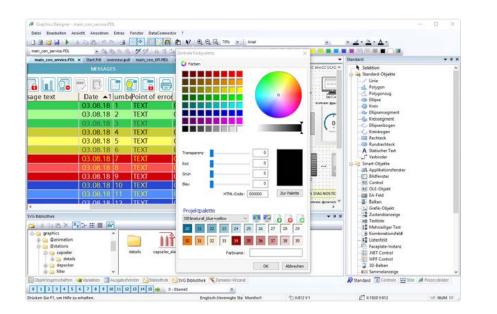


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EFFICIENCY IN ENGINEERING Intelligent tools for efficient configuration

Due to the increasing degrees of automation and, consequently, the growing complexity of plants, international competition is increasing the pressure of time and cost in production automation. Efficient engineering at the SCADA level is one way of counteracting this pressure.

SIMATIC WinCC V7 supports you with efficient and modern engineering tools to achieve a short time-tomarket for new plants and minimal downtimes in the case of plant conversions.



So you benefit from the following: SIMATIC WinCC V7 in engineering

- Efficient processing of mass data with WinCC/Configuration Studio
- Efficient tag management and optimized communication channels with a multitude of drivers for automation systems
- Efficient creation and dynamization of process pictures

with a modern graphics system and the Graphics Designer

- Easy configuration of the alarm system with the Alarm Logging Editor
- Easy configuration of data archiving and process value analyses

with the Tag Logging Editor and WinCC Logging

- Greater security, even at the engineering stage with integrated security concepts and integrated user administration
- Ready for worldwide use thanks to UNICODE

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EFFICIENT PRODUCTION MANAGEMENT AT RUNTIME With SIMATIC WinCC V7 you can achieve a high degree of transparency and thus the basis for process optimization.

In order to ensure maximum flexibility with the highest possible productivity, target-oriented decisions regarding process optimization must be made promptly at all levels of an enterprise. The prerequisite for this is an integrated flow of information across all plant levels and locations.

Create the necessary transparency with SIMATIC WinCC V7 to optimize processes in a targeted manner. In this way, you use information intelligently, improve processes in your company, and achieve a rapid return on investment. This reduces costs, avoids wastage, makes better use of production facilities, and ultimately ensures greater efficiency and cost effectiveness for the company.



So you benefit from the following: **SIMATIC WinCC V7 in plant operation**

- High-performance data archiving in the integrated, high-performance SQL database and further archiving options
- Automation and standardization of frequently recurring configurations using standard technologies and intuitive software tools
- Efficient analysis of process values and trends with WinCC Tag Logging and efficient controls
- Efficient analysis of messages with the freely configurable, multilingual WinCC message display
- Efficient recipe management with WinCC/User Archives
- Ready for worldwide use thanks to UNICODE

SangSom reference: A real performance package Find out more

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SCALABILITY

From the single-user system all the way to web-based solutions for all industries and technologies

In order to keep pace with your growing requirements, the process visualization must be expandable at any time – without technology discontinuities and without the need for complete reconfiguration. Scalability with investment protection is a top priority.

With SIMATIC WinCC, you can flexibly scale the quantity structure and functionality of your SCADA system at any time: from the single-user station to the distributed multi-user system and web solutions, including redundant solutions for maximum availability and safety.

In addition to this scalable system configuration, WinCC options and Add-ons enable you to adapt your system precisely to the requirements of specific industries and technologies. This means you are optimally prepared for existing and upcoming requirements.

How to benefit from scalability with SIMATIC WinCC V7

- Cost-effective single-user system as a stand-alone solution
- Easy expansion to a multi-user system if the same process is to be monitored at several operator stations
- Greater performance with client/server solutions thanks to license expansion up to multi-server and multi-client solutions
- UNI-Client

without project for the interconnection with the server

- Increased system availability thanks to redundant server solutions as well as automatic client switching and synchronization of recipes
- Open programming interfaces for scripting or your own applications
- Cross-manufacturer communication with OPC and WinCC/Connectivity Pack
- Web solutions with SIMATIC WinCC/ WebNavigator and SIMATIC WinCC/WebUX for integrated operator control and monitoring of plants via the Internet or intranet

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INNOVATION

Stay informed at any location or time with mobile SCADA solutions and modern operating concepts

The innovative operating concepts of SIMATIC WinCC V7 keep pace with the times – so that you have an overview of your processes at all times and locations. With SIMATIC WinCC V7, you can also monitor plants and processes via the Internet or intranet while on the move, and intervene to control them if necessary. With SIMATIC WinCC, you can expand your control station with flexible access to process and plant data, depending on the field of application, with a solution for just monitoring, as well as for operating your plant. A SIMATIC WinCC/WebUX Monitor Client is available free of charge.

You can allow or restrict access to the production data individually - so that every user receives exactly the information that is relevant for them at any time or location.

How to benefit from **innovations** with SIMATIC WinCC V7

- Integrated and device-independent monitoring client
- with SIMATIC WinCC/WebUX
- Flexible operator control and monitoring of plant processes via the Internet or intranet using a current browser with HTML 5 capability
- Efficient reporting and analyses with intuitive tools – also mobile and via the Web
- Intuitive operator control concepts with multitouch and gesture control

The SCADA system of a plant records a multitude of information about the state of equipment



Flexible web access with SIMATIC WinCC Watch the video

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OPENNESS

Use international standards and native script and programming interfaces for added security of investment and efficiency

From the very first version, SIMATIC WinCC V7 has consistently relied on the market leader in the field of operating systems. Regardless of whether you are using Microsoft Windows 10 or Windows Server, you can easily follow innovations in the Windows operating system, which ultimately means security of investment for you. In addition, you can also implement SIMATIC WinCC V7 in virtual environments and thereby benefit from a hardware-independent solution that significantly lowers your IT maintenance costs. Open interfaces allow you to automate engineering as well as access runtime and archive data.

How to benefit from the openness of **SIMATIC WinCC V7**

- Easy expansions and adaptations of engineering and runtime system by means of dialogs, scripts and applications
- Open programming interfaces via the WinCC/Open Development Kit (ODK)
- Cross-manufacturer communication via OPC (OLE for Process Control)
- Easy IT/OT integration with bidirectional flow of information between production and management
- Easy data communication thanks to bidirectional connectivity MES, enterprise resource planning (ERP), and Office applications



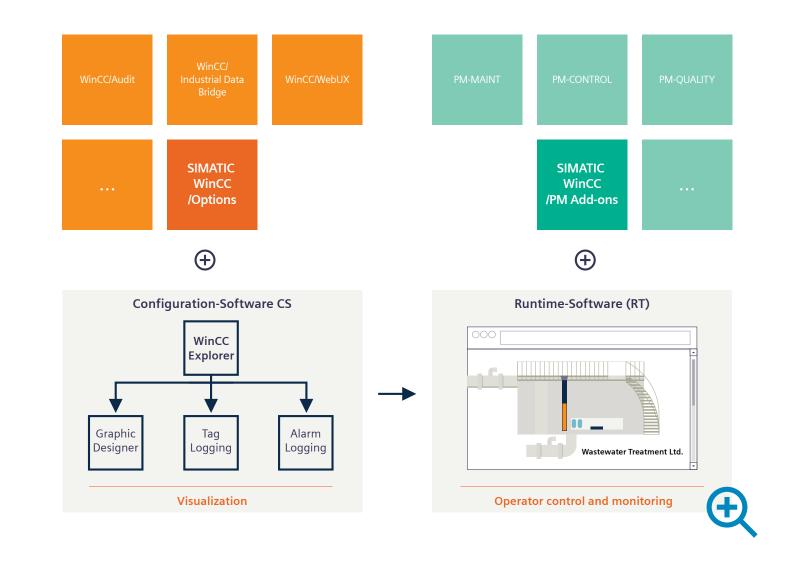
Crossmuller reference: **Totally Integrated** Automation, SCADA with Openness

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One powerful basis, diverse functional expansions

With SIMATIC WinCC V7, you benefit from all the advantages of a modular, expandable system: A powerful basic system and a wide range of extensions for a graduated and individually tailored functionality that exactly fits your requirements.



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Basic system

In the basic system you find all the functions you need to:

- visualize your process and configure a graphical user interface
- operate and monitor your process via this user interface

The basic components are the configuration software (CS) and runtime software (RT).

Expansions

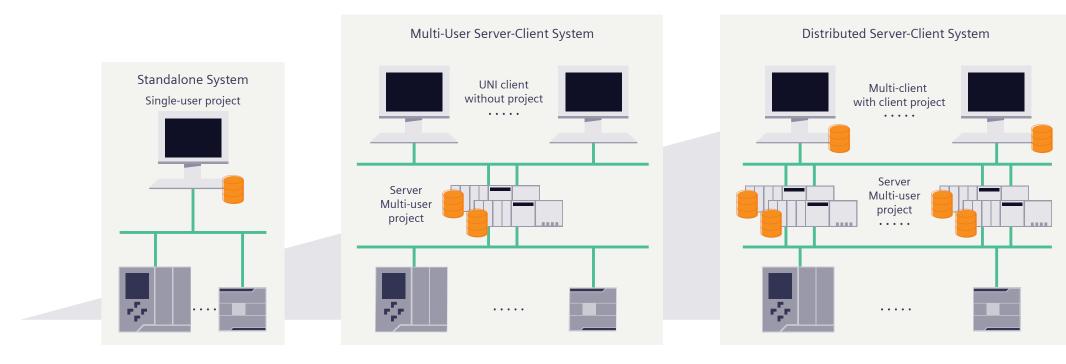
The universal WinCC basic software is the basis for modular expansions. These functional expansions are available as WinCC Options or as WinCC Premium Add-ons.

WinCC Options

are created by WinCC Development and are Siemens Industry Automation products. You can obtain support from our advisory services and via the central hotline.

Process Management (PM) Add-ons

A series of tried and tested Add-ons developed by Siemens, which optimally complement SIMATIC WinCC V7 and have been used successfully for years by numerous customers.





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WINCC USERADMINISTRATOR WINCC SIMATIC LOGON Easy administration of users, rights, and roles

With the WinCC UserAdministrator, you assign and control the access rights of users consistently from the local operator panel all the way to web-based access. User administration with SIMATIC Logon is integrated into the security system and the user administration of Windows and thus also covers expanded security requirements according to FDA SIMATIC Logon is also part of the basic system. In the WinCC UserAdministrator, depending on your requirements, you can choose whether you want to manage users with the WinCC UserAdministrator of SIMATIC WinCC V7 or with SIMATIC Logon.

WinCC UserAdministrator SIMATIC Logon

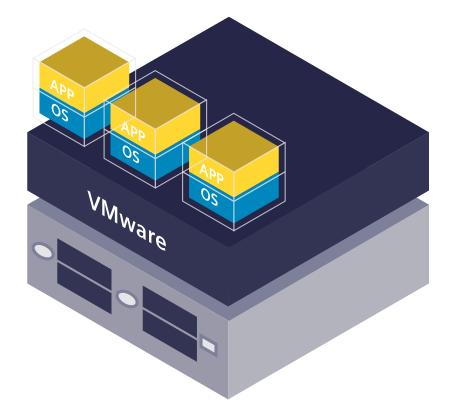
- High degree of security thanks to precautions on administrator and user side
- Configurable logon procedures (keyboard, chip card, etc.)
- Individually assigned rights
- Password management (automatic logoff after inactivity, etc.)
- Support of domain concept and Windows workgroups



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VIRTUALIZATION Real added value by means of a virtual SCADA system

To reduce the administration and maintenance effort, the automation world and thus also WinCC are turning increasingly to virtualization and the opportunity it provides to decouple the application(s) from hardware in a professional and highly available manner This enables centralized management and further simplifies backing up and restoring the system environment.



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SIMATIC Virtualization as a Service (SiVaaS)

SiVaaS facilitates entry into this futureoriented technology. You receive the life cycle service required for the virtualization solution, including the appropriate software and hardware components, directly from Siemens Industry – from a single source and perfectly coordinated.





SCADA reference Thyssenkrupp Find out more Watch the video

Packages with SIMATIC IPC

You can also use a SIMATIC IPC847E, IPC547J / IPC1047 as a virtual system with which you can use multiple VM Ware sessions on industrial grade hardware.

- Data security, availability, economic efficiency
- Minimized downtimes and optimum utilization of personnel and equipment
- Future-oriented technology
- Software maintenance and project maintenance of different SIMATIC software products
- Can be easily expanded and modernized quickly and cost-effectively





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Expand the SIMATIC WinCC V7 basic system to suit **your requirements**

Tailor SIMATIC WinCC individually to suit your needs. WinCC Options are products from SIMATIC development and are supported by the advisory services and via the central hotline. Extend your SIMATIC WinCC V7 basic system individually with specific functions – which can be easily and flexibly combined with the WinCC/ Options.

_	WinCC/Options for optimum scalability	SIMATIC WinCC Server SIMATIC WinCC/WebUX SIMATIC WinCC TeleControl	SIMATIC WinCC SIMATIC WinCC Historian
	WinCC/Options for greater availability	SIMATIC WinCC Redundancy	
	WinCC/Options for SCADA expansions	WinCC/User Archives WinCC/Calendar Options	
	WinCC/Options for validation & tracking	WinCC/Audit	WinCC/Change
	WinCC/Options for plant intelligence	WinCC/Data Monitor WinCC/Connectivity Pack SIMATIC Information Server	WinCC/Industria WinCC/Perform
	WinCC/Options for system expansions	WinCC/ODK	

C/WebNavigator C/Process

e Control

rial Data Bridge mance Monitor

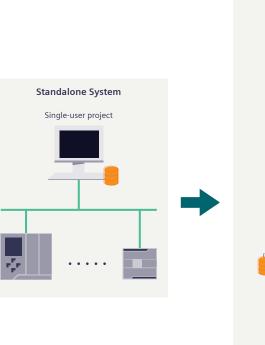
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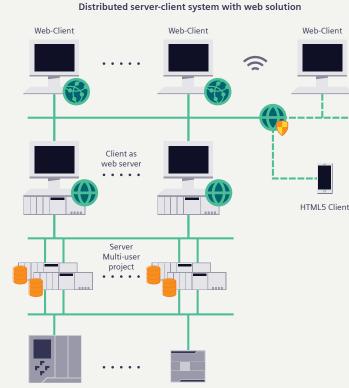
SIMATIC WINCC SERVER **Easy configuration** of a distributed SCADA system

With the SIMATIC WinCC Server option, you can coordinate several operator control and monitoring stations in a group with networked automation systems. The server supplies the connected clients with process and archive data, messages, screens, and reports. This means that the result of an operator action at one operator station, e.g. changing a value or message acknowledgment, is immediately available to all other operator stations.

SIMATIC WinCC Server

- Protection of investment through easy expansion of single-user systems to a powerful server/client system
- Implementation of large quantity structures
- Multi-user configuration of many operator stations, with assignment of the clients for the overall system or individual servers (task ranges)
- Uniformity of the system







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SIMATIC WINCC/WEBNAVIGATOR Operator control and monitoring via the web

With SIMATIC WinCC/WebNavigator you can easily use the visualization and operating functions of a local operator station via the web. In this way, you can benefit from the wide range of web-based operator control and monitoring options. You can extend the operator control and monitoring functions over a wide area network (WAN) without changing the existing SIMATIC WinCC V7 project and you can easily integrate web users into the user management of your SCADA system. Of course, web access also supports multiple languages. Appropriate protective measures ensure that plant security is always guaranteed.

SIMATIC WinCC/WebNavigator

- Comprehensive remote access for unrestricted operator control and monitoring of plants
- Flexible thin-client solution
- Secure remote access with consistent rights according to IT security standards
- Integrated configuration and user administration
- Efficient remote maintenance with integrated diagnostics, also covering geographically distributed plants





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SIMATIC WINCC/WEBUX

Flexible operator control and monitoring at any location

SIMATIC WinCC/WebUX has been developed with mobile devices (tablet PCs or smartphones) in mind, allowing you to flexibly operate and monitor plant processes via the Internet or intranet. The option has a native 64-bit architecture and supports all devices with a current browser with HTML 5 capability.

When you install the basic system as a SIMATIC WinCC/WebUX Server, a monitor client is already included at no additional cost. For example, with the WEBUX Monitor Client function, you can use a monitor with browser function as a costeffective hall display.

SIMATIC WinCC/WebUX

- Optimally informed Information about the plant is available any time and anywhere thanks to remote access
- Securely informed Thanks to web standards (SSL, HTML5) and integrated user management
- Version-independent client
- Ready-to-use Thanks to freely selectable, maintenance-free clients (e.g. Web Panel), also on mobile devices
- No installation at the client end means neutrality for platform and browser





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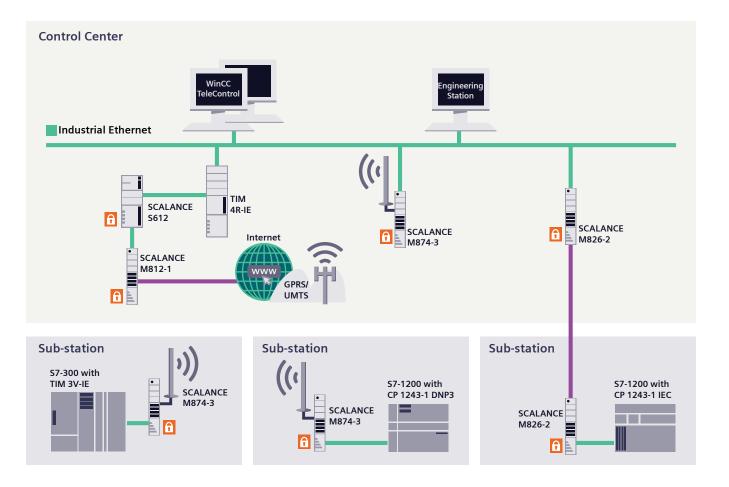
SIMATIC WINCC TELECONTROL

Telecontrol and plant automation with a homogeneous overall solution

Particularly in industries such as water and wastewater treatment or oil and gas, a SCADA system needs a secure and reliable solution for monitoring, operating and automating widely distributed systems. SIMATIC WinCC/TeleControl supports you with a secure solution for integrating remote terminal units (RTUs) via a wide area network (WAN) flexibly in the central process visualization system of the overall plant. The option supports a wide range of network topologies and transmission protocols, so you can configure the system flexibly to meet your specific requirements.

SIMATIC WinCC TeleControl

- Reduced risk of faults during operation due to a standardized user interface (same visualization and operation)
- Flexible selection of communication media
- SINAUT ST7, DNP3, IEC 60870-5-101/-104
- Transmission of data/media via public and private communication networks (dedicated lines, dial-up networks [analog, ISDN], wireless systems [GSM]), TCP/IP-based connections (DSL, GPRS)





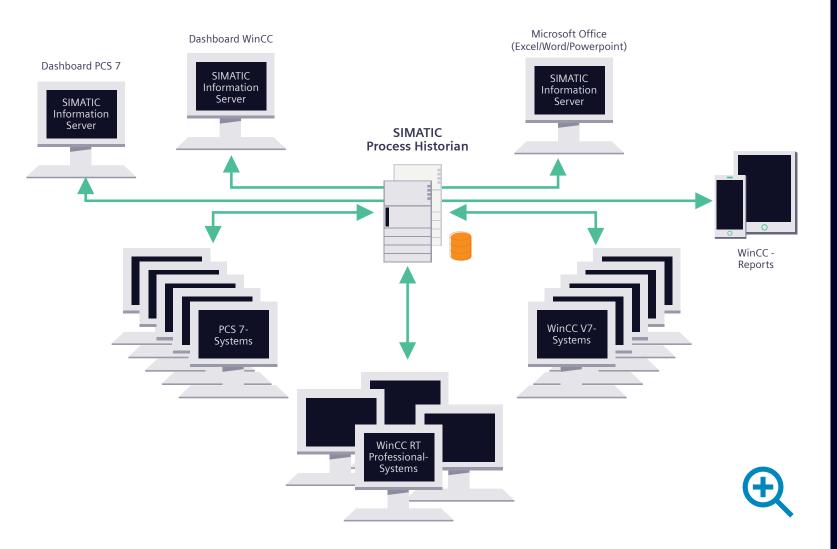
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SIMATIC PROCESS HISTORIAN

Archives any amount of data from various data sources of the automation system

The SIMATIC Process Historian enables you to expand your SIMATIC WinCC V7 system with a real-time database for a variety of products and versions that serves as a central data interface to the company management level. The SIMATIC Process Historian option functions as a central long-term archive for any amount of process data and messages from different data sources. The data is archived in a high-performance SQL database with efficient data compression mechanisms and is thus available in the long term and at minimal cost at the touch of a button. The SIMATIC Process Historian is ideally complemented by the SIMATIC Information Server. This means you can benefit from full transparency, central archiving of company data, and you can make your decisions on the basis of secured data.



SIMATIC Process Historian

- Central interface to the corporate management level
- Real-time archive for any amount of production data for the entire plant
- Version independence of the data sources
- One-click configuration for easily scalable data volume
- Maximum access speed using minimal memory by means of intelligent compression and compression algorithms
- Security through redundancy, disaster recovery and Store & Forward mechanisms
- Openness through the OPC UA server
- Full transparency of data with the SIMATIC Information Server

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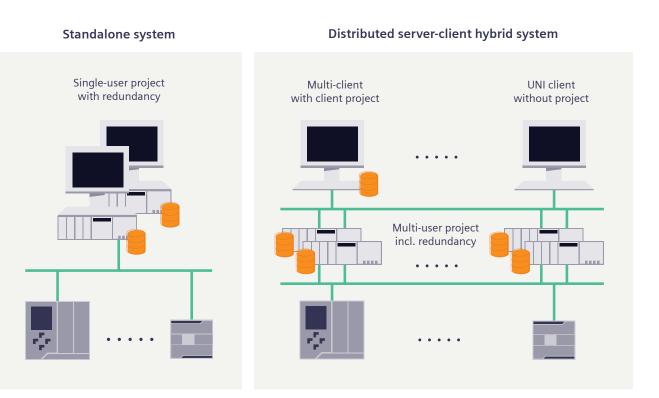


SIMATIC WINCC REDUNDANCY **Increasing system** availability

SIMATIC WinCC Redundancy enables you to increase the availability of your SIMATIC WinCC V7 system by using redundant servers, redundant communication paths, and high-availability controllers. If one of the two server computers fails, the second server assumes control of the entire system. After the failed server is operative again, the contents of all message, process value and user archives as well as internal tags are synchronized online. Not only do you benefit from significantly higher system availability, but the clients are also automatically switched to the intact system, so that the system can be operated without difficulty at any time. You production remains online, even if a server should fail.

SIMATIC WinCC Redundancy

- Increase in system availability and seamless data integrity through
 - redundant server/communication paths
 - high-availability controllers
- Automatic switchover in the event of server or communication failure and automatic data synchronization after a fault has been rectified
- Continuous operation through automatic switchover of the clients to the intact server
- Increased performance by dividing the WinCC operator stations between both redundant servers





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WINCC/USER ARCHIVES **Easy archiving of** datasets and recipes

With WinCC/User Archives, you can easily create user-specific archives. The option collects associated data, such as recipes or production data, in user archives with a fixed data structure. During runtime, this data is exchanged simultaneously with the automation partners (e.g. a controller). With WinCC/ User Archives, for example, an operator can enter parameter sets in WinCC, store them in the user archive, and forward them to the automation level as needed. Conversely, an automation system can continually acquire production parameters during a shift and send these to the SIMATIC WinCC V7 system at the end of the shift. Using these mechanisms, WinCC/User Archives can also be used to record batch data, specify production parameters, or keep stock inventory data up to date.



WinCC/User Archives

- High-performance archiving of associated recipes or parameter sets
- Efficient administration Administration of recipes/parameter sets in the HMI itself
- Process control via data sets Coordinated transfer between controller and HMI
- Assignment and transfer of data set parameters to/from WinCC tags

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WINCC/CALENDAR OPTIONS **Easy working with calendar** functions and events

As a result you always have an eye on all your deadlines: The WinCC/CalendarOptions add calendar-based functions to WinCC. A shared calendar control enables you to plan times or periods of validity.

WinCC/Calendar Scheduler

Enables simple management of time-controlled activities in order to control automated processes monitored by WinCC. It then takes only a short time to configure action schedules, with which values of WinCC variables are automatically changed. These changes then control the physical I/O components and switch devices on and off.

WinCC/Event Notifier

Permits simple schedule management for notifications from automated processes monitored by WinCC. Thus, in the event of an alarm condition, the right person is automatically notified according to the time of day and the day of the week.

WinCC/Calendar Options

- Simple and reliable scheduling of events and actions
- Flexible in the event of exceptions such as holidays, maintenance periods, etc.
- User-friendly user interface in the style of Microsoft Office
- Easy to send important messages to a defined group of people at a defined time by email or text message
- Guaranteed traceability: Events and actions are logged and displayed in the WinCC alarm system

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WINCC/AUDIT WINCC/CHANGECONTROL

Traceability in production processes – transparent for project changes and manual operator interventions

WinCC/Audit

Monitors operator activities in runtime mode and also records project changes during the engineering phase. All change data is recorded in a tamperproof database, the "Audit Trail", and displayed via the Audit Viewer. This allows WinCC/Audit to seamlessly track operator activities and project changes. In this way, WinCC/Audit also helps mechanical engineers and plant operators to reduce the engineering overhead for meeting requirements according to 21 CFR Part 11 and EU 178/2002. By way of support, a White Paper summarizes the engineering measures that are necessary for simplifying the validation.

WinCC/ChangeControl

Monitors project changes that change the WinCC database, such as changes to tag management or the creation of a user group, and modification of files, referred to as the document check (e.g. process pictures, scripts and protocol layouts, and customerspecific documents). The documents and files can not only be monitored for changes with WinCC/ChangeControl, but intermediate versions can also be created and retrieved using the rollback function. This enables plant constructors and operators to track changes quickly and conveniently, for example during a plant shutdown. This supports the fault analysis and ultimately shortens downtimes.

WinCC/Audit WinCC/Change Control

- Reliable recording of operator actions and project changes in an Audit Trail
- Project versioning and document control
- Compliant with the requirements of the Food and Drug Administration (FDA)
- Reduced engineering overhead to comply with 21 CFR Part 11 & EU 178/2002

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WINCC/DATAMONITOR Visualizing processes, analyzing and distributing data

WinCC/DataMonitor enables you to easily display current process states as well as historical data and messages and to analyze, evaluate and distribute this data. This means that the data from your SIMATIC WinCC V7 system is available to all functional levels of your company and also on any office PCs. The WinCC/DataMonitor uses Internet-enabled tools that support common security mechanisms such as login/ password, firewalls, encryption, etc., and provides you with a range of powerful functions that you can use to visualize processes, reports and analyses and further process them in Microsoft Excel.

WinCC/DataMonitor

- Display and analysis of current process states and historical data on office PCs with standard tools such as Microsoft Internet Explorer or Excel
- Integration of WinCC process pictures without additional configuration effort
- Online compilation of information from the process during runtime
- Generating event-driven or time-driven reports, including forwarding by email

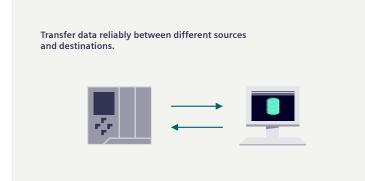
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WINCC/INDUSTRIALDATABRIDGE **Flow of information between** production and the IT world

Easily exchange data between automation systems from different manufacturers in your SIMATIC WinCC V7 system: The WinCC/ IndustrialDataBridge option can be used as a standalone application via system service, or optionally to SIMATIC WinCC V7 with integrated RT mode and WinCC/Connectivity Station In both cases, WinCC/IndustrialDataBridge permits a secure exchange of data. This means you can:

- implement high-performance transmission of individual data or data blocks
- integrate data via standard interfaces at low cost
- connect external databases and other applications

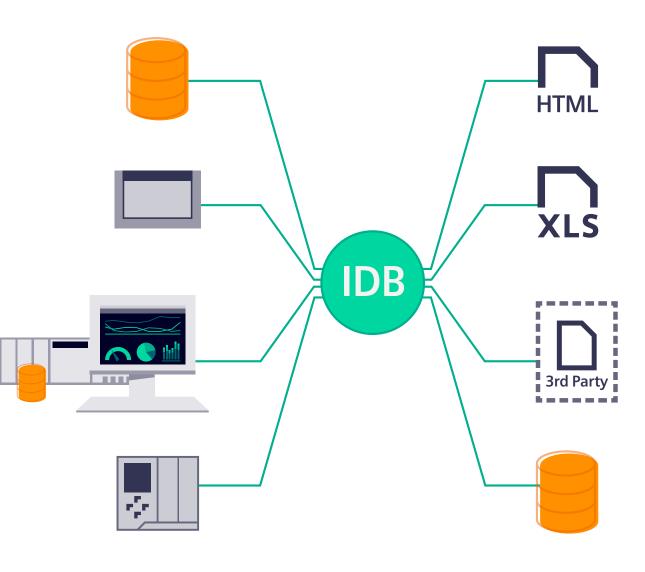
WinCC/IndustrialDataBridge supports a host of standard interfaces (e.g. OPC, OLE-DB, SQL). The option is easy to configure without programming, which saves you time and helps to avoid errors.



WinCC/ IndustrialDataBridge Watch the video

WinCC/IndustrialDataBridge

- Bidirectional data exchange between systems via numerous standard interfaces
- Reliable, high-performance and secure due to parameterization instead of programming
- Universally usable as a system service or integrated as a WinCC option



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WINCC/CONNECTIVITY PACK

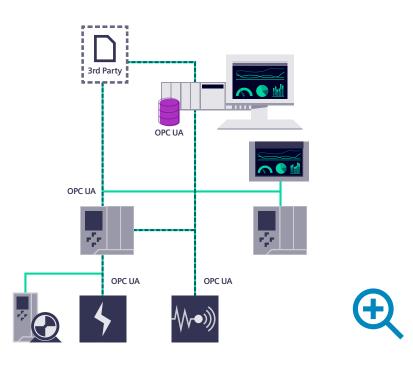
Easy access to messages and historical data via OPC/WinCC **OLE-DB**

Access WinCC databases easily with the WinCC/Connectivity Pack - either via OPC or WinCC OLE DB provider. The WinCC OLE DB provider also allows you to read process value and message archives in uncompressed form, even if the data is stored compressed in the database. Using the WinCC OLE DB provider, you can also analyze the data and, for example, output the minimum and maximum of an archive tag. The WinCC basic package contains an OPC DA server, OPC DA client, OPC XML client and OPC UA client You can use these additional interfaces via WinCC/Connectivity Pack:

- OPC HDA Server for access to the SIMATIC WinCC archive system and redundancy switchover
- OPC XML DA server for access via web services to external/internal tags in WinCC and for platform-independent communication between Windows and non-Windows systems
- OPC A&E Server for access to the SIMATIC WinCC alarm system
- OPC UA for communication with OPC DA, HD and A&E

WinCC/Connectivity Pack

- Simple integration and expansion with OPC UA
- Cross-manufacturer communication via OPC UA in the visualization solution and interfaces from several suppliers
- Integrated and secure due to authentication and encryption
- Simultaneous access to various OPC servers
- Plug and play: easy to use, integration in the Configuration Studio for mass data engineering reduces project costs
- Further use of relevant production data in the company with open communication



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WINCC/PERFORMANCEMONITOR

Analysis and optimization of production on the basis of individual performance indicators

The WinCC/PerformanceMonitor can be used to calculate and analyze plant-specific indicators for individual plant units, machines or entire production lines in machine or line-oriented production plants – including:

- OEE (Overall Equipment Efficiency)
- MTBF (Mean Time Between Failures)
- MRT (Mean Repair Time)

You can define the production equipment individually and plantspecifically. In this way, you create the appropriate conditions for optimizing your processes on the basis of your individual key figures.

Plant sections, production lines, even entire sites can be analyzed, both locally and globally.



"Production optimization with WinCC/PerformanceMonitor" <u>Watch the video</u>

WinCC/PerformanceMonitor

- Individual calculation of plant-specific indicators in SIMATIC WinCC V7
- Recognizing indicators in context (e.g. quality for individual suppliers)
- Analysis of indicators in SIMATIC WinCC V7 as a bar graph, Gantt chart or table, also via the Web
 Adding indicators in existing plants without
- Adding indicators in existing plan production losses
- Short configuration time and familiarization time due to integration into SIMATIC WinCC V7

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SIMATIC INFORMATION SERVER

Full transparency of production data with web-based dashboards and reports

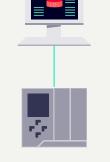
The SIMATIC Information Server gives you transparent access to plant information at any time. With the cross-system and cross-version reporting system for all corporate divisions, you can easily compile historical plant data into web-based dashboards or reports and make it available via dashboards without any programming knowledge. This ensures comprehensive access to plant information for each target group in the company (managers, quality

assurance, maintenance) at all times. The dashboards can also be easily displayed on tablet PCs, individual requirements are also being taken into account by Microsoft Reporting Services. In addition, you can send the reports on a time or event basis, for example as daily reports or shift reports. Various add-ins also permit reporting with Microsoft Office tools.

SIMATIC **Information Server**

- Central, web-based reporting system as an interface for all corporate areas up to the management level.
- Easy handling thanks to the use of standard tools such as Microsoft Word, Excel and PowerPoint
- Provision of freely configurable reports via web-based dashboards
- Import of data from any number of WinCC, WinCC RT Professional and PCS 7 applications
- Transparent access to WinCC tag and alarm archives and to the data of the SIMATIC Process Historian

Production data are generated on the field level and acquired by a SCADA system compressed, stored and analyzed.



SIMATIC Process Historian und Information Server Watch the video

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WINCC/ODK

Open programming interfaces for system expansions with Open **Development Kit (ODK) and** IndustrialX

Create your own applications for your SIMATIC WinCC V7 system. WinCC/ODK describes open programming interfaces (C-API) that allow you to access data and functions of the WinCC configuration and runtime system. This means you can use extensive functions:

- Internal functions of SIMATIC WinCC V7 for your own applications
- Data access to tag management and archives for connection of third-party systems
- Export tags, extended protocols, representation of temperature profiles (y=f(x)), as well as counting of operating hours and recording the switching frequency of machinery

ODK contains documentation on WinCC API functions, Include and Lib files, examples in C and C++, and sample projects. With the IndustrialX Developer Kit, you create and standardize multiple required picture objects in ActiveX technology. IndustrialX controls can be created for different applications in specific industries, for example in the chemical, glass, or paper manufacturing industries.

WinCC/ODK

- Development of your own applications for SIMATIC WinCC V7
- Individual system expansions via an open standard programming language (C++, C#, VB.NET)
- Use of internal WinCC functions
- Disclosure of data and functions for the programming interfaces
- Possibility for individual expansions of WinCC in scripts or programs



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WINCC/CLOUD CONNECTOR

Easy exchange of data between the **SCADA level and the cloud**

With Industrie 4.0, the "Cloud" is also becoming increasingly important for industry. Data is sent from sensors and actuators of the machine to the cloud, where it is further used and processed for analysis purposes. This is useful, among other things, for troubleshooting and machine optimization. As of WinCC V7.5, you can use the WinCC/ Cloud Connector to send tags from the WinCC tag management to the cloud (Siemens MindSphere; Microsoft Azure; Amazon Web Services, or AWS for short). The WinCC/Cloud Connector is configured as an MQTT client. It sends (publishes) the selected tags to the MQTT Broker. From this central location, the data is available in the cloud for further processing. You determine which values should be transferred to your cloud application – giving you full control over the data exchange at all times.

More information in the WinCC Information System: **Options > WinCC/Cloud Connector**

WinCC/Cloud Connector

- MQTT (Message Queue Telemetry Transport) protocol for the exchange with Amazon AWS and Microsoft Azure
- Easy and lean Publish/Subscribe principle with low bandwidth and transport overhead
- Securely encrypted connection

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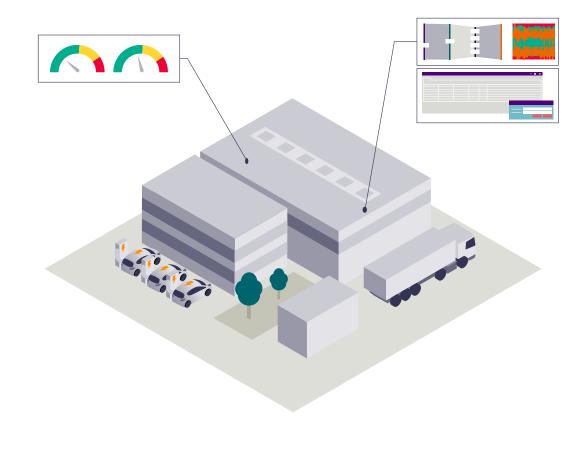
SIMATIC ENERGY MANAGEMENT Integrated energy management from the field to the management level

Energy is a valuable resource. If you want to cut energy costs, increase your competitiveness and meet statutory requirements, you already know how important it is to have integrated energy management in production. To be able to make the right decisions at the right time, you must always keep an eye on the energy consumption of your entire company. For this purpose, Siemens has created SIMATIC Energy Management – a comprehensive and scalable product and solution portfolio certified by ISO-50001, which can collect energy data at the field level and even provide company-wide energy analyses at the management level.

Find out more

SIMATIC Energy Management

- Comprehensive and scalable product and solution portfolio certified by ISO 50001 - ranging from energy data collection and visualization at the field level to company-wide energy data analysis and reporting at the management level
- SIMATIC Energy Manager PRO for company-wide energy management
- SIMATIC Energy Suite for production-level energy monitoring and active load management
- SIMATIC S7 Energy Efficiency Monitor for the standardized efficiency evaluation of machines



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Quality-tested Add-on products for specific tasks

The PM Add-ons for WinCC provide answers to a wide range of current challenges in digitization. The powerful modules complement the powerful and scalable WinCC product family ideally and support the optimal interaction of processes in production, quality assurance, maintenance and system integration. The PM Add-ons are developed under the leadership of our WinCC Competence Center in Mannheim, Germany, and are consistently geared toward comprehensive and economical solutions based on standard software components.





Vald. Birn & SIMATIC SCADA Systems <u>Watch the video</u> **PM-ANALYZE** Process Data and Alarm Analysis and Reporting Tool

PM-OPEN EXPORT, IMPORT, MINDCONNECT, PM-MES Interface



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PM-QUALITY

Modular and industryindependent archive system for order-related or batch-related acquisition of process and production data

The proof of quality in the form of a manufacturing report, which is obligatory for FDA-regulated industries, is now a standard requirement in almost all industries. Thanks to powerful data archiving functions, PM-QUALITY enables you to conveniently create attractive and comprehensive production reports for batch processes. The Add-on can not only be seamlessly integrated into the SIMATIC WinCC user interfaces, but also used as a stand-alone office application. PM-QUALITY supports you with powerful archiving and analysis tools that enable you to capture and evaluate the data and generate the corresponding reports automatically. This means you have greater transparency in your batch processes quite easily and conveniently.

PM-QUALITY

- All core functions of a comprehensive quality management system, such as the complete acquisition, preparation and archiving of batch-related data, e.g. trend curves, messages, production setpoint and actual values, audit trails and laboratory values.
- Data from WinCC, PCS 7, WinCC (TIA) RT Professional and Advanced can be combined from various sources via text import, OPC/DA and OPC/UA, compiled into meaningful reports, and archived over a long period.
- Processing of measured values with the aid of graphical calculation rules, the integration of day, week and shift logs with an integrated shift calendar, and the creating of reports in Microsoft Excel.



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PM-CONTROL PM-MES INTERFACE

Cross-industry recipe system for creation and management of recipes with integrated order control

In this way, you create the basis for the vertical integration of your processes: PM-CONTROL is the ideal basis for integrating your production into higher-level MES or ERP solutions, both in connection with the PM-MES interface and with the API that is already integrated. With PM-CONTROL, you manage production rules, recipes or parameter data sets as target specifications for production in a high-performance database. PM-CONTROL supports you with a flexible parameter control, with an operator interface that can be seamlessly integrated into the WinCC user interface. Setpoints can be transferred to several WinCC systems. With its modular agent concept, this is even possible if recipes contain setpoints for several of the above targets in combination. The recording of recipe changes in an integrated audit trail, the support of electronic signatures and the automatic versioning of recipe data records make PM-CONTROL the ideal tool in the regulated industry.

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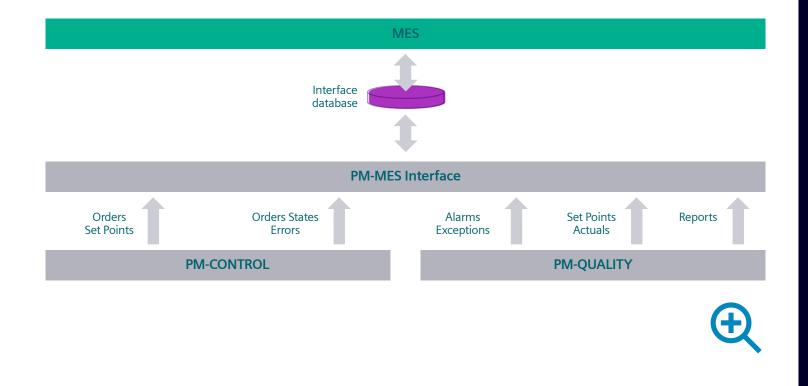
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PM-CONTROL

- Flexible parameter control with a user interface that can be seamlessly integrated into the WinCC user interface
- Saving of parameters of different types as recipes in data records
- Also for complex tasks with
 - automatic scaling of quantities
 - dynamic calculation of recipe values
- User-friendly order scheduling including automatic transfer of scheduled orders to the production units
- Problem-free connection to higher-level host systems at the plant and production management level.

PM-MES Interface

- Bidirectional communication interface between PM-CONTROL, PM-QUALITY and MESs.
- Communication via Microsoft SQL server interface database
- Enables seamless integration of the SCADA level with manufacturing execution systems.



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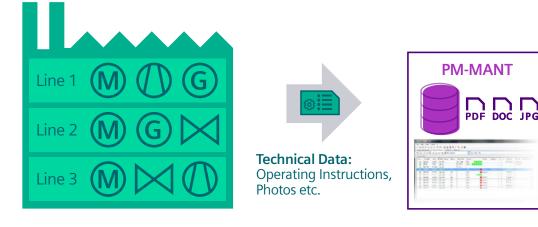
PM-MAINT

Industry and technologyneutral maintenance system for use in preventive maintenance

The direct way to more efficient maintenance processes: PM-MAINT supports you with an industryneutral maintenance management system for use at the production level. The Add-on can be connected very flexibly to the existing automation landscape and enables you not only to plan maintenance measures based purely on the calendar, but also performance-based maintenance planning on the basis of actual operating hours and operating cycles.

PM-MAINT

- Technology-neutral maintenance management system for use at production level
- Calendar, service, and event-controlled maintenance based on operating hours counters, operations counters or process signals
- Tracking and documentation of repairs
- Integration in the operating level: Repair requests from HMI screens, writing of maintenance information in tags





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PM-ANALYZE

Efficient indication of weak points in the process, **KPI/OEE** calculations and comprehensive reporting

With the PM-ANALYZE Add-on you can create target group-oriented reports and evaluations of historical data from SIMATIC WinCC easily with the help of Microsoft Excel. This means that you have full access to your plant information at any time tailored to each target group in the company, from management, via quality assurance to maintenance personnel.

Reports with Microsoft Excel



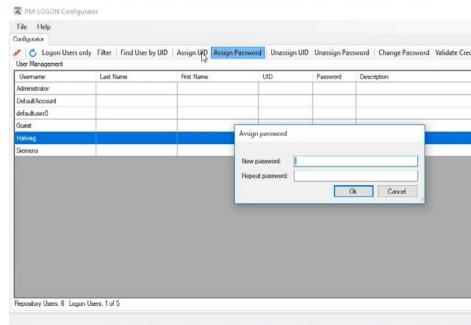
PM-ANALYZE

- Powerful archiving and analysis tool for process data from a wide range of various sources
- User-friendly trend and alarm display, either as standalone application or integrated into the HMI
- Archiving, display and analysis of alarms from several different systems in chronological order with statistical message evaluations
- Process value archives for historical data with flexible calculation and aggregation functions
- Generation of reports with Microsoft Excel add-in for access to
 - Process value and compressed archives
 - Calculated values and key performance indicators (OEE, KPI)
 - Messages and operator actions
- Use of statistics functions

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рм-LOGON User login via RFID

With PM-LOGON, operators can log on to the operating system conveniently and quickly via a card reader using their company ID card. PM-LOGON automatically assigns the scanned unique ID (UID) of the card to the operator and transfers this information to SIMATIC Logon, which performs the logon procedure at the operating system. PM-LOGON is modular and supports a growing number of different RFID readers from other manufacturers in addition to SIMATIC RF 1040R, 1060R and 1070R.



PM-LOGON

- Easy configuration of the assignment of card and user
- Modular expansion possible for additional identification devices, user management, and login providers

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PM-OPEN OPTIONS, PM-LANGUAGE AND UNIVERSAL PM-PACKAGE

Powerful and proven expansions for greater connectivity and worldwide use

Further PM Add-ons

- PM-OPEN EXPORT for the automatic export of process and archive data from SIMATIC WinCC V7 to text files of unrestricted design
- PM-OPEN IMPORT for importing data from WinCC Advanced and Comfort for central long-term archiving in SIMATIC WinCC
- PM-OPEN TCP/IP for connecting computer systems to the process control and automation level via TCP/ IP
- PM-OPEN HOST/S is a cutting-edge and flexible communication solution between the automation level and SAP ERP
- PM-OPEN MINDCONNECT securely uploads production reports from PM-QUALITY or PM-ANALYZE into the Siemens MindSphere Cloud

PM-LANGUAGE

- Translation of the system texts for the products: M-CONTROL, PM-QUALITY, PM-ANALYZE, PM-MAINT, PM-OPEN
- Standard scope of supply of the products: German, English, French, Chinese (PM-QUALITY / PM-CONTROL)

Universal PM-Package

- Specially for system integrators and resellers
- Development license package for test and configuration purposes
- For all versions of the products: PM-CONTROL, PM-QUALITY, PM-ANALYZE, PM-MAINT, PM-OPEN

- > System Overview
- > Added Value
- > System Configuration
- > WinCC/Options
- > Energy Management
- > PM Add-ons for WinCC
- > SIMATIC WinCC V7 Packages
- Training
- > Network of Partners
- > SIMATIC SCADA Systems
- > More Information
- > Imprint

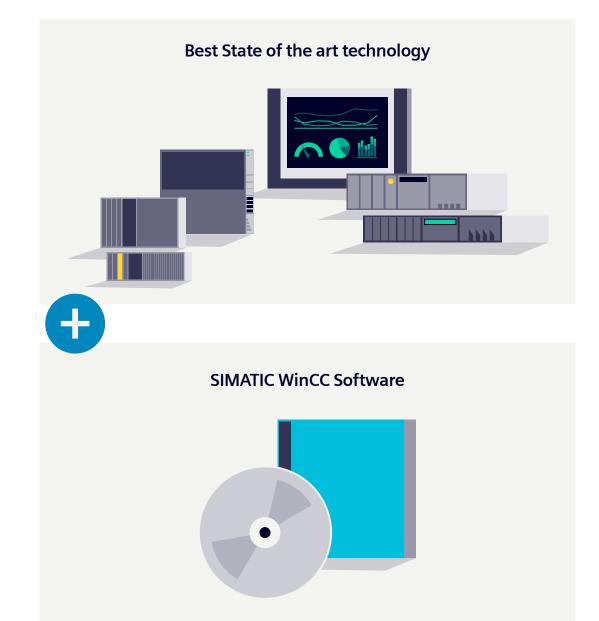
The perfect combination of hardware and software

SIMATIC SCADA systems and SIMATIC industrial PCs form a high-performance and reliable platform for data acquisition, evaluation and visualization. The harmonized and certified overall hardware and software package provides the highest quality in all industries.

The packages are available for almost all SIMATIC IPCs that meet the SCADA requirements, and offer you not only a coordinated performance package, but also a price advantage if you order the SIMATIC IPC and the WinCC software at the same time.

For more information on the SIMATIC WinCC V7 packages, go to:

Customer Support



- > System Overview
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Extensive range of SITRAIN courses

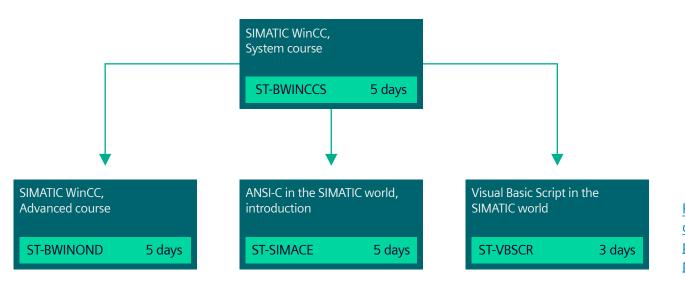
Get your personnel into shape for working with SIMATIC WinCC V7. To this end, we support you with a multistage range of courses for SIMATIC WinCC V7, specifically tailored to different target groups and various levels of knowledge. In this way, we facilitate targeted training with optimum learning results, from beginners to experts.

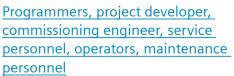
DIGITAL Industry Academy – SITRAIN

Qualified employees are a crucial factor of success for every company. Building up competence and specialist knowledge ensures competitiveness and innovations. With our training courses for industry, which are available worldwide, we support you here – in a practical approach, with innovative learning methods and a customer-specific concept.

SITRAIN training courses are led by certified experts with practical experience. Practical exercises on specially developed training equipment and high-quality course materials ensure learning success.

The SITRAIN training courses, with the customary level of quality, are available to you both on-site and online. Our instructors will support you – online as well - and are always available to assist you during practical exercises.







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Global support and certified partners according to the highest quality standards

WinCC Specialists and WinCC Partners are available worldwide as qualified solution providers. These certified and centrally audited partners are ready to implement your individual SCADA project even in diversified client-server architectures with redundancy, or in applications with energy data management systems

Approved partners – Value Added Resellers

provide you with an extensive range of products, customer-specific modifications combined with excellent product knowledge, and qualified technical consulting.



Solution Partner – Automation Drives

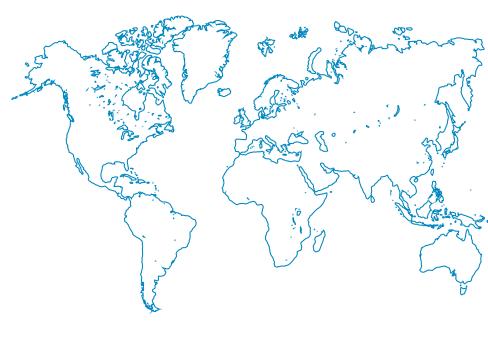
stand for a large number of customized and future-proof automation solutions in a wide range of industries.



Partner Finder

Find the right partner for your project: Our global network of Approved Partners and Solution Partners for all tasks in the field of automation and drive technology and in power distribution.

Find out more



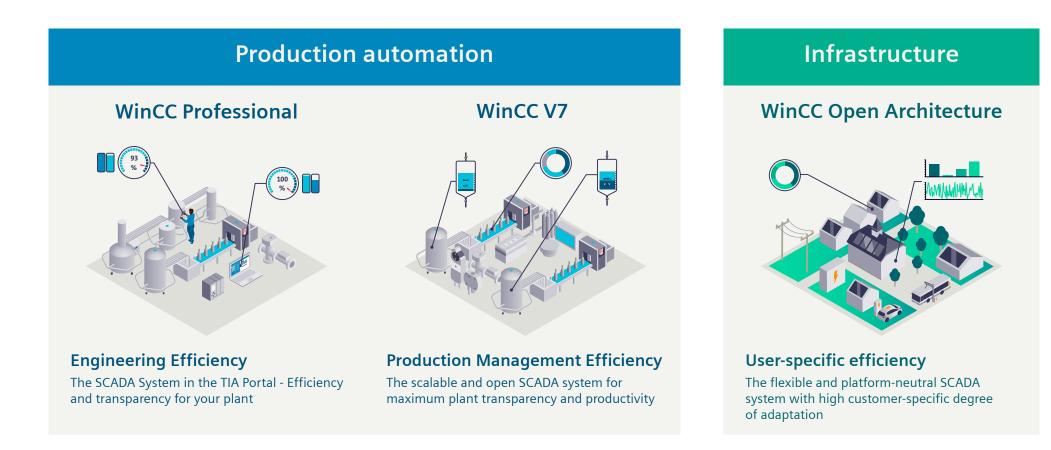
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Totally connected. Totally digitalized.

SIMATIC WinCC V7 is part of the SIMATIC SCADA family of systems.

SIMATIC SCADA systems offer you the benefit of a future-proof basis, with which you can manage the growing volumes of data, archive them over the long term, and compress them into meaningful information. Make space for yourself: with sufficient reserves for new technologies, mobile applications and more stringent requirements in terms of energy efficiency and productivity.

Our SIMATIC SCADA systems:



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More information on current system requirements, technical specifications and application examples

Industry Mall	Internet	Newsletter
<u>Catalog and ordering sys-</u> <u>tem for automation and</u> <u>drive technology</u>	Product information <u>SIMATIC SCADA</u>	Always up to date Interesting news covering ev- erything to do with automation, product innovations, success stories, etc.
References	Partner 🤶	Service & Support
From customer to customer! <u>Customers report on the experience they have had using our</u> products	<u>WinCC Specialists</u> <u>Contacts</u>	SIMATIC WinCC im Online Support FAQ, application examples, certificates, manuals, etc. Training Training offer with more than 300 courses.

SIMATIC WinCC V7

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> Imprint

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Find out more: siemens.com/wincc-v7

Learn everything about SIMATIC WinCC

SIMATIC WinCC take a look!



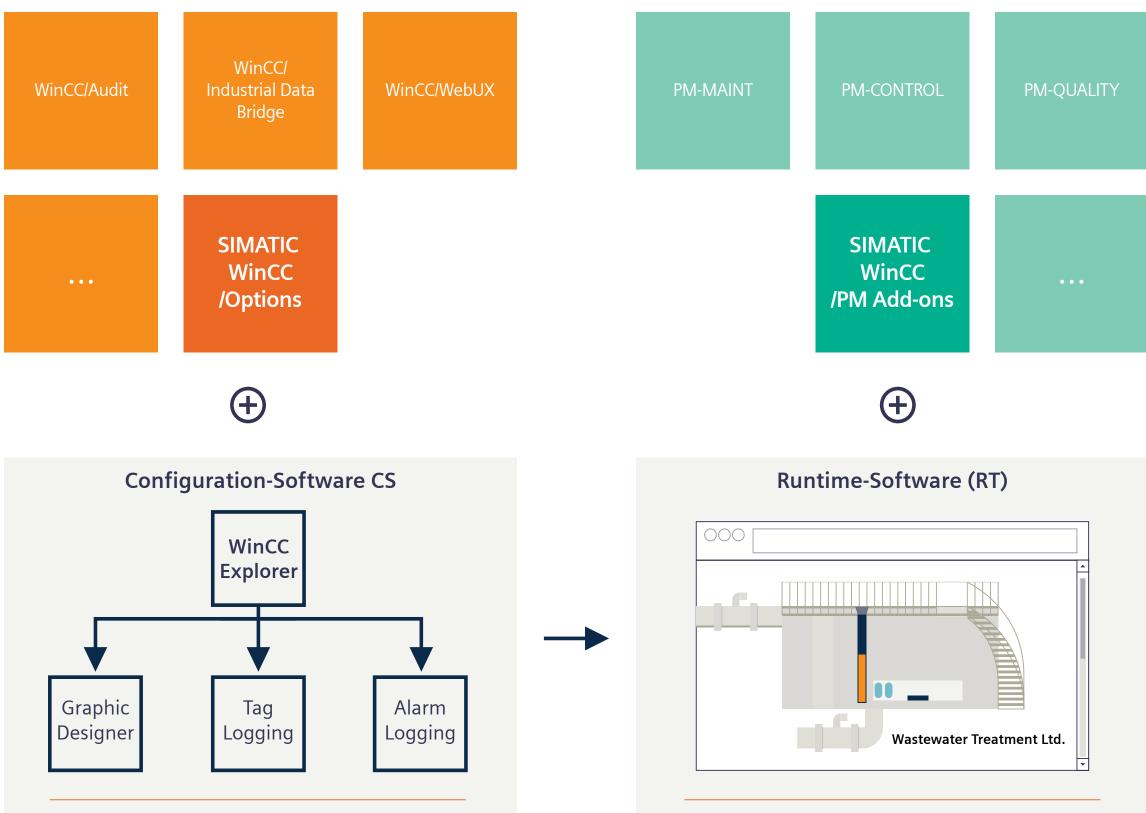
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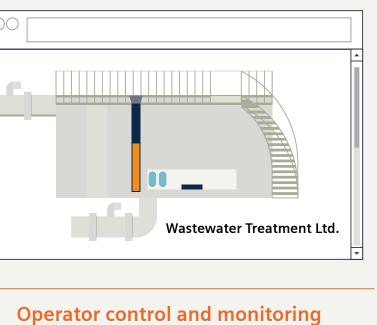
Digital Factory Factory Automation P.O. Box 48 48 90026 Nuremberg, Germany

Article-no.: DIFA-I10159-00-7600 (EN) iPDF

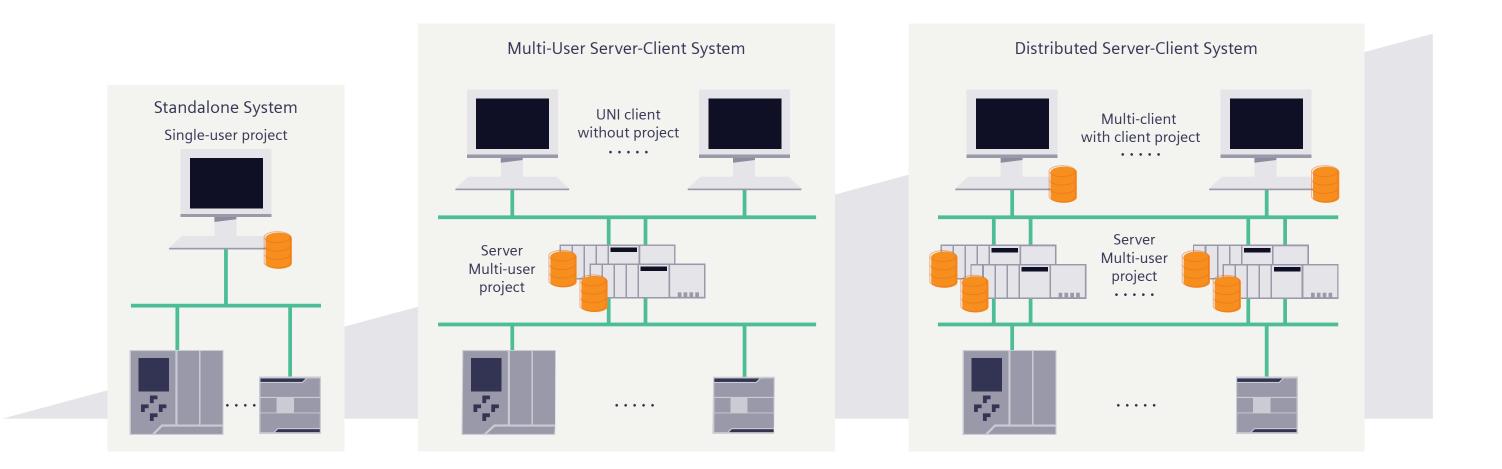
Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract the concluded contract.



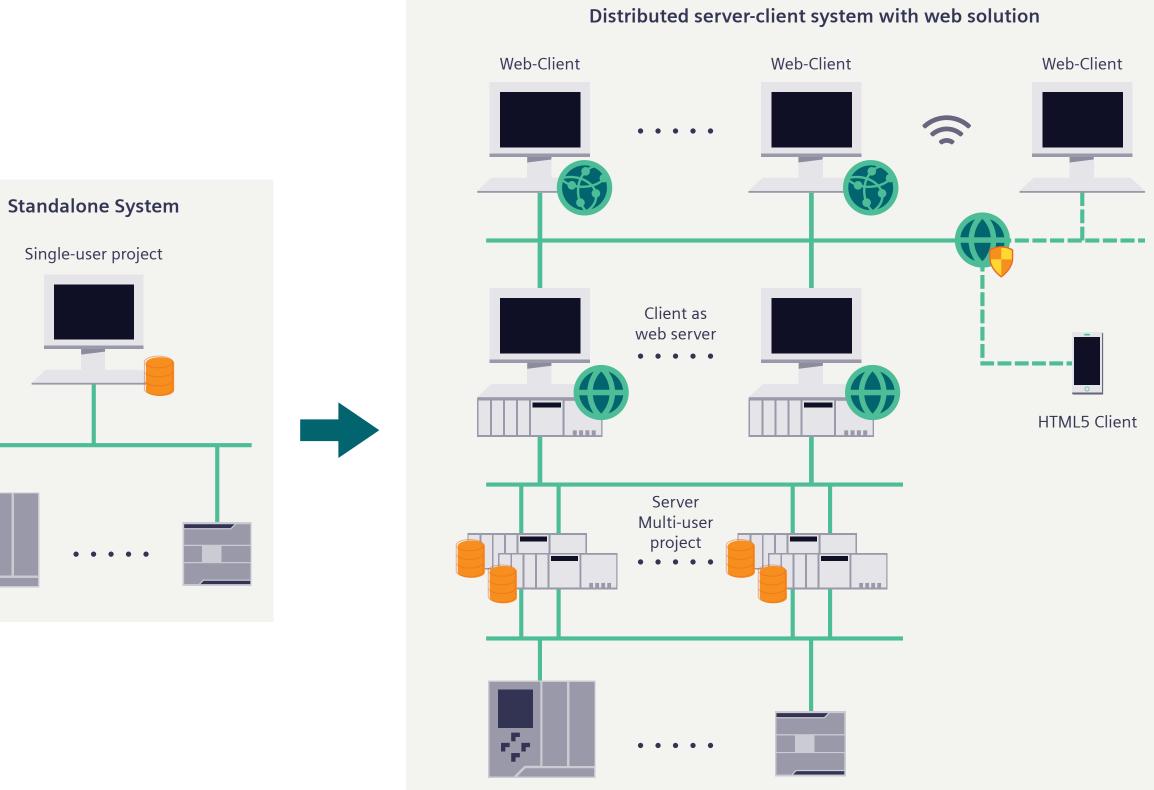




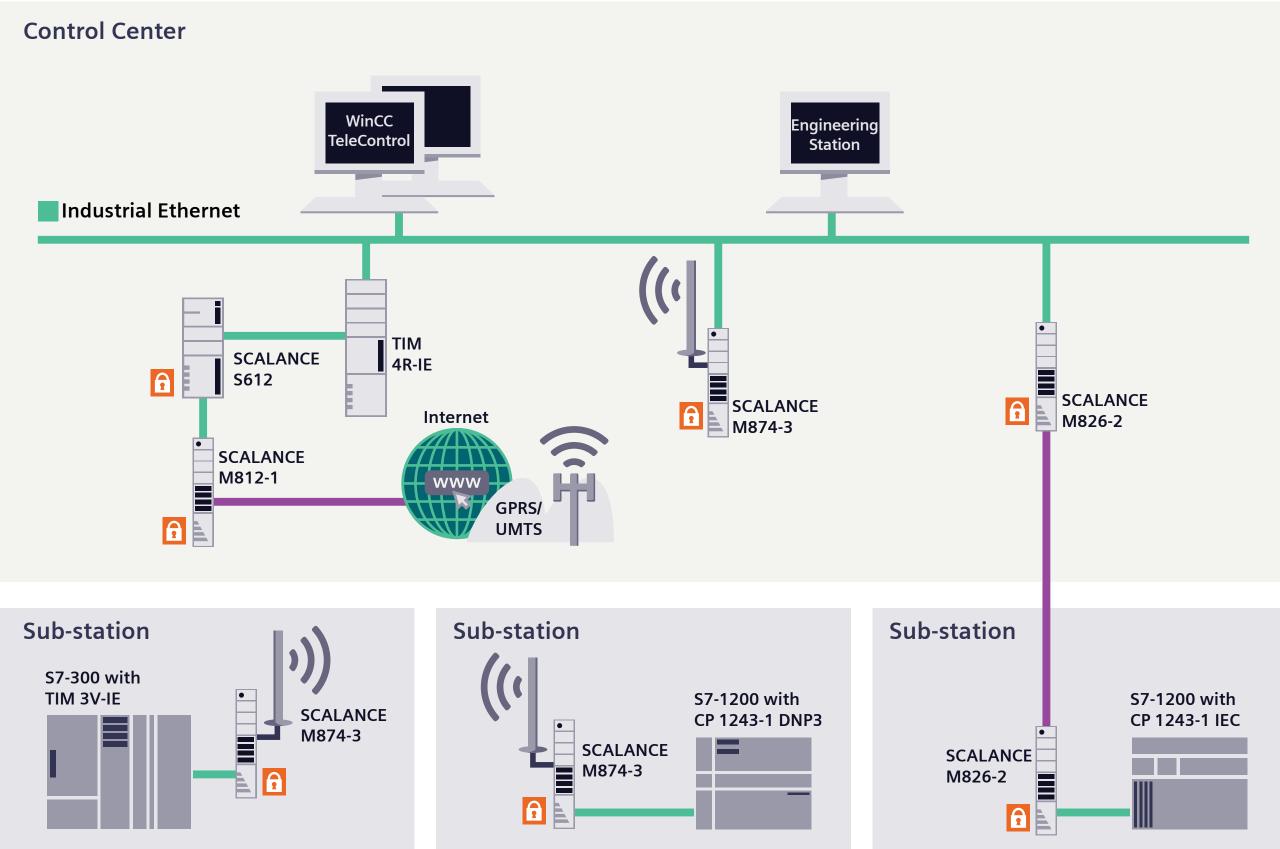




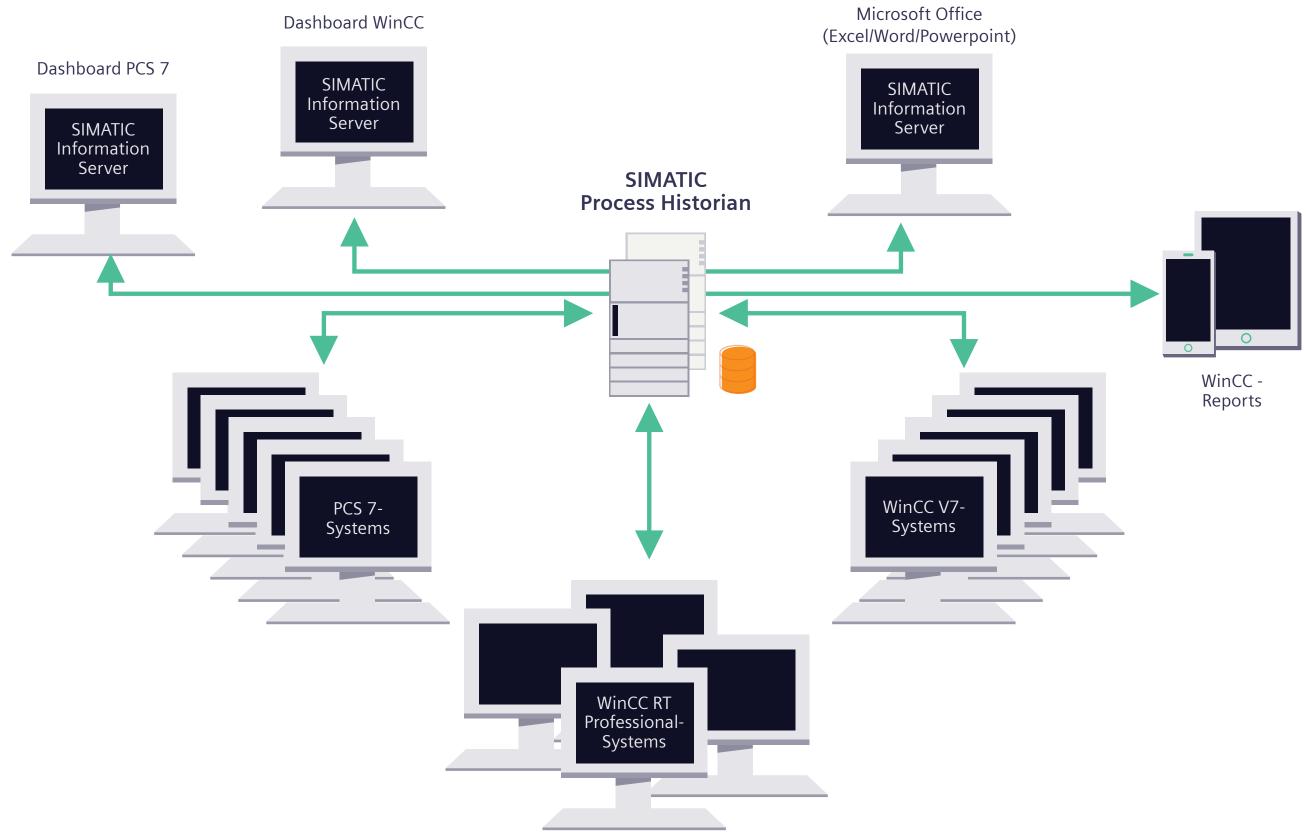








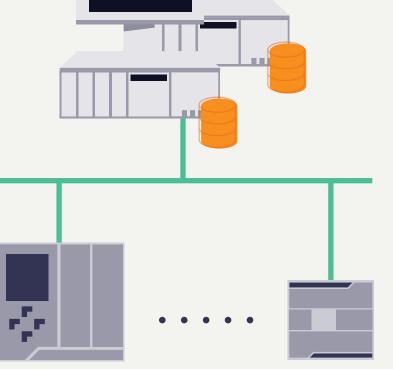




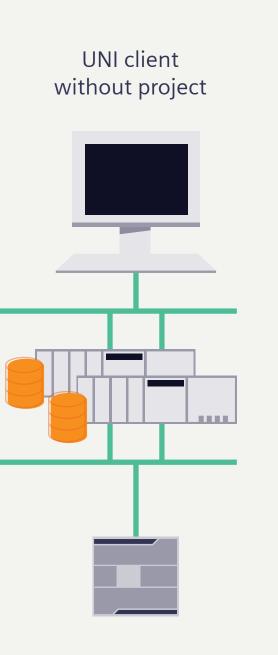


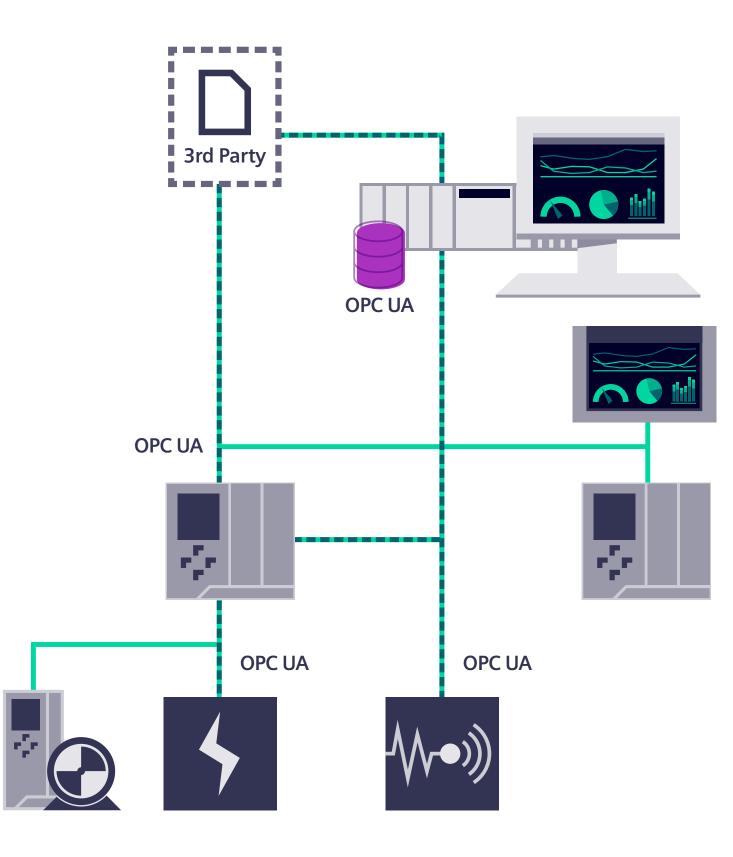
Distributed server-client hybrid system Standalone system Single-user project Multi-client with redundancy with client project Multi-user project incl. redundancy

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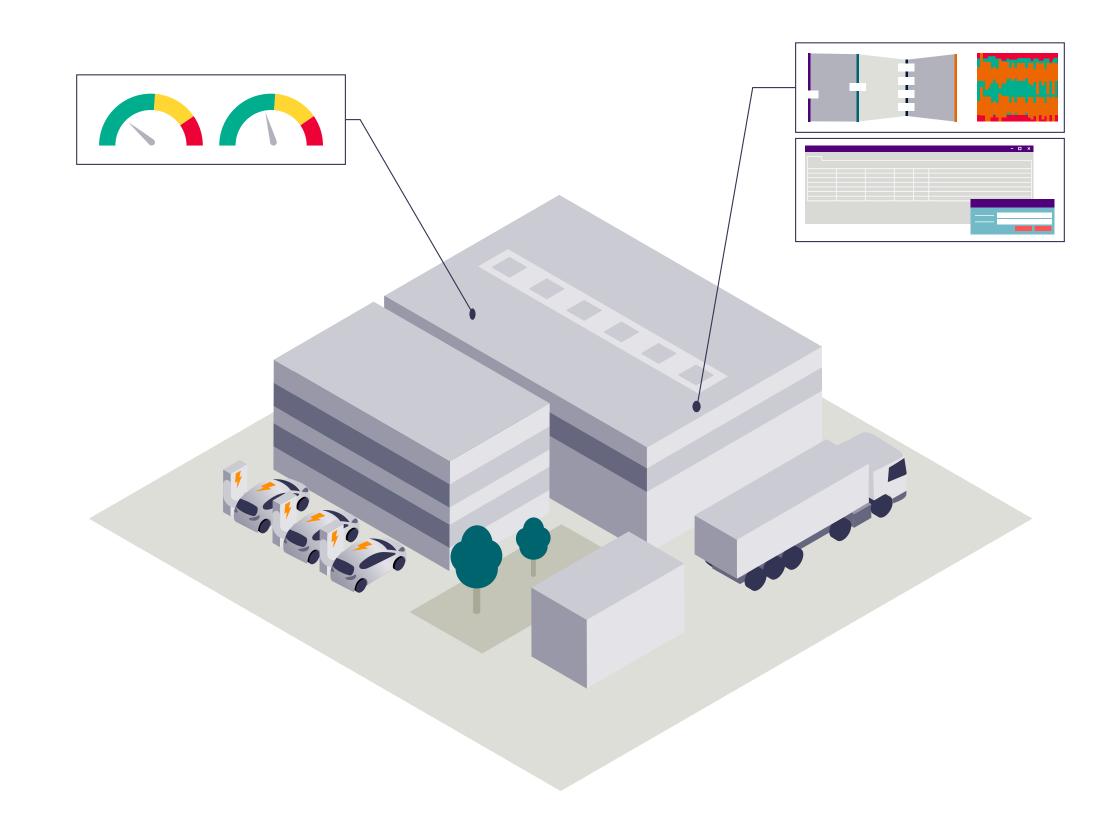








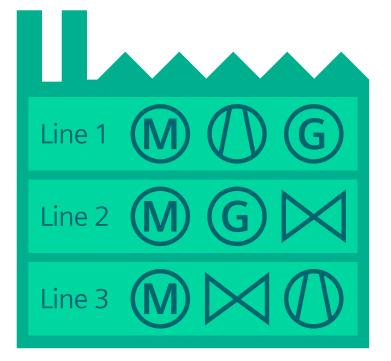






	PM-CONTROL Recipe Management and order processing	PM-ANALYZE Process Data and Alarm Analysis and Reporting Tool
PM-QUALITY Batch Reporting and Long-term Achiving	WinCC	PM-OPEN EXPORT, IMPORT, MINDCONNECT, PM-MES Interface
PM-MAINT Performance Based Maintenance Management	PM-LOGON PM-LANGUAGE Universal PM-Package	





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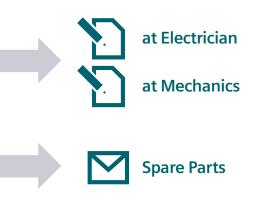
Technical Data: Operating Instructions, Photos etc.

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Order

Report





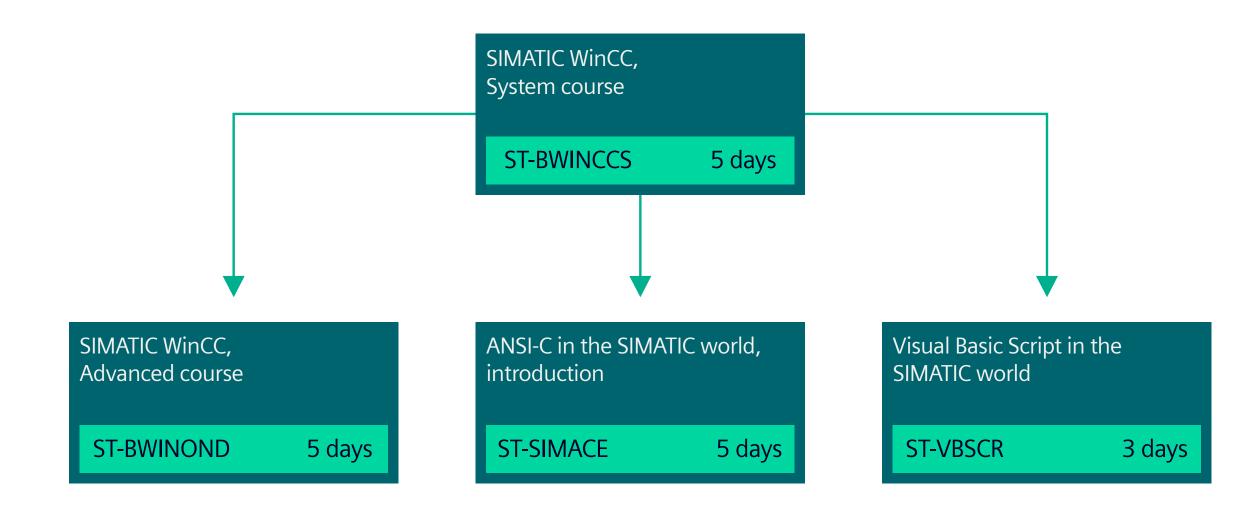


Reports with Microsoft Excel





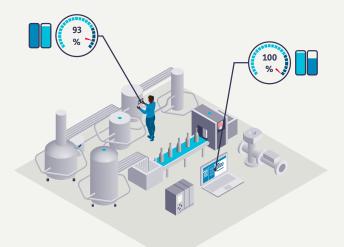
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Production automation

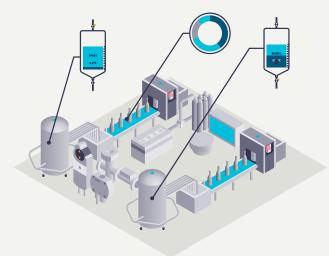
WinCC Professional



Engineering Efficiency

The SCADA System in the TIA Portal - Efficiency and transparency for your plant

WinCC V7



Production Management Efficiency

The scalable and open SCADA system for maximum plant transparency and productivity





of adaptation



Infrastructure

WinCC Open Architecture

User-specific efficiency

The flexible and platform-neutral SCADA system with high customer-specific degree

