

WinCC

WinCC	
<u>Developer(s)</u>	Siemens
Initial release	1996
<u>Stable release</u>	V7.4 / April 2016
<u>Operating system</u>	Microsoft Windows
<u>Type</u>	SCADA
Website	SIMATIC WinCC

SIMATIC WinCC is a supervisory control and data acquisition (SCADA) and human-machine interface (HMI) system from Siemens. SCADA systems are used to monitor and control physical processes involved in industry and infrastructure on a large scale and over long distances. SIMATIC WinCC can be used in combination with Siemens controllers. WinCC is written for the Microsoft Windows operating system.^{[1][2]} It uses Microsoft SQL Server for logging and comes with a VBScript and ANSI C application programming interface.^[3]

In 2010, WinCC and PCS 7 were the first known SCADA systems to be specifically targeted by malware. The Stuxnet worm can spy on and even reprogram infected systems.^[4]

SIMATIC HMI operator control and monitoring systems

- **Product Information**

Overview

SIMATIC HMI operator control and monitoring systems – efficient machine-level operator control and monitoring

Equipment for monitoring and operator control is needed wherever people have to work with or on machinery and plants performing diverse tasks from cylinder driers to waste compactors. It is not difficult to find the right device for your specific task. The challenge is to find a solution that is future-proof and flexible, that can be integrated into higher-level networks, and that can also meet the ever-increasing demands for transparency and data provision. SIMATIC HMI Panels have proven their value in a variety of different applications in all industrial sectors over many years. The range of the systems in use is just as wide as that of the applications and technologies in the respective plants.

SIMATIC HMI stands for highly efficient machine-level operator control and monitoring and has some unique advantages:

- Efficient engineering
Visualization can be created more quickly and easily than ever before.
- Innovative design and operation
Visualization becomes the outstanding feature of the machine.

- Brilliant HMI operator panels
The right operator panel for every application.
- Backup – with security
Protection for investments and know-how, secure operation.
- Commissioning in the fast lane
Lose no time with testing and servicing.
- Openness with PC-based
For flexible, independent applications

<http://www.siemens.com/hmi>

SIMATIC HMI software – a lot more than just visualization software

With the SIMATIC WinCC (TIA Portal), SIMATIC WinCC and SIMATIC WinCC Open Architecture product families, SIMATIC HMI covers the entire engineering and visualization software spectrum for the human machine interface.

- Almost the entire range of SIMATIC operator panels can be configured with SIMATIC WinCC (TIA Portal), the successor to SIMATIC WinCC flexible.
The functionality covers both visualization tasks at machine level and SCADA applications on PC-based multi-user systems.
- The current version 7.4 of SIMATIC WinCC is available for extremely complex process visualization tasks and SCADA applications, e.g. taking account of redundant solutions and vertical integration all the way to plant intelligence solutions.
- Ultimately, SIMATIC WinCC Open Architecture addresses applications that require extensive customer-specific adaptations or manage large and/or complex applications, as well as projects that demand special system requirements and functions.

<http://www.siemens.com/hmi-software>

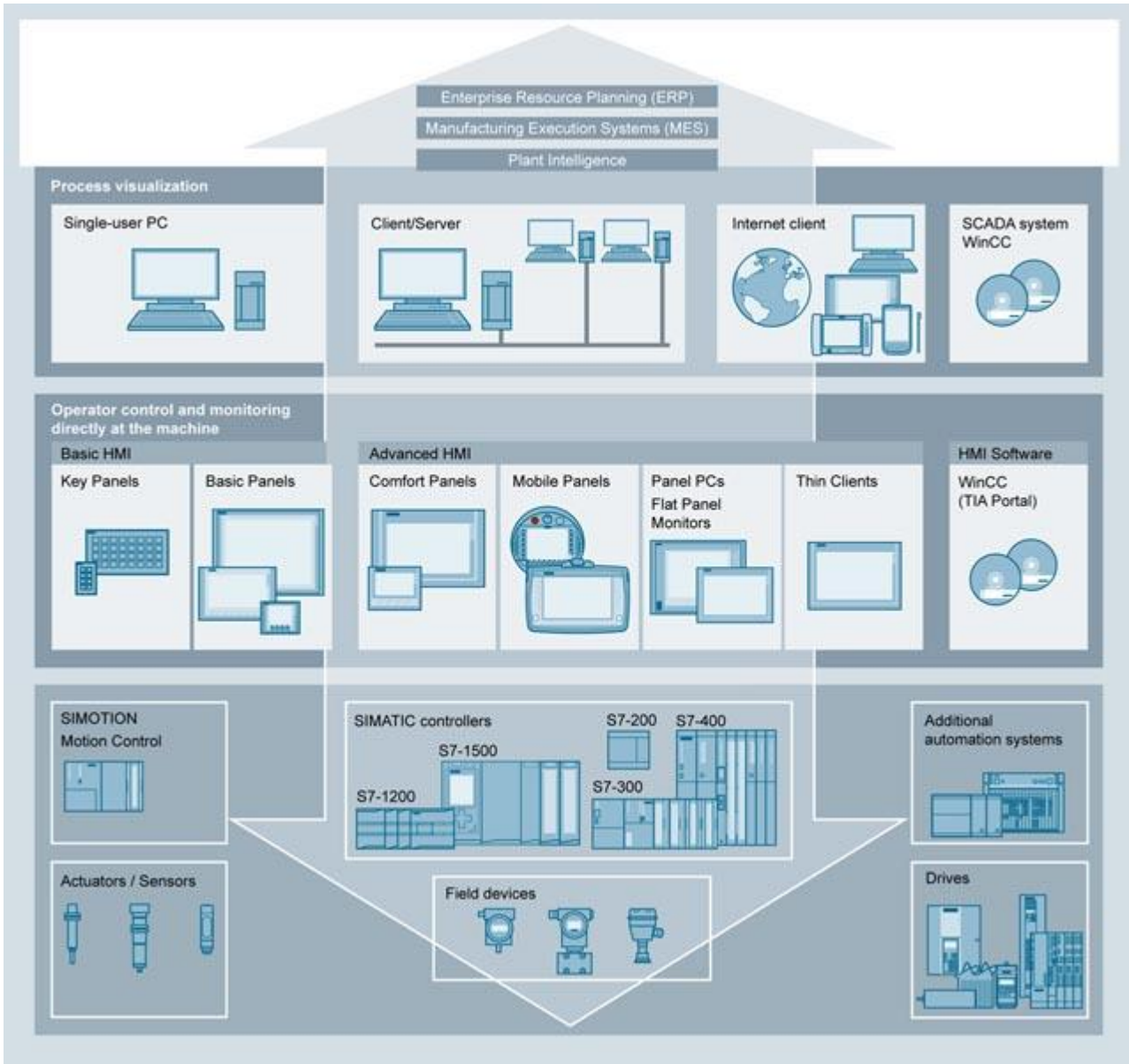
SIMATIC HMI – brilliant and rugged operator panel

Basic HMI – for the entry level

- Key Panels
Pre-assembled and ready for installation, for conventional operator panels. No configuration required with WinCC!
<http://www.siemens.com/key-panels>
- Basic Panels
The entry level series for simple HMI applications.
<http://www.siemens.com/basic-panels>

Panel-based HMI Advanced - for more sophistication

- Comfort Panels
High-end functionality for demanding indoor and outdoor HMI applications.
<http://www.siemens.com/comfort-panels>
- Mobile Panels
Portable HMI operator panels for mobile deployment on site.
<http://www.siemens.com/mobile-panels>
Individual HMI devices in customized versions
<http://www.siemens.com/customized-automation>



Control system optimizes the productivity of a hot dip galvanizing plant

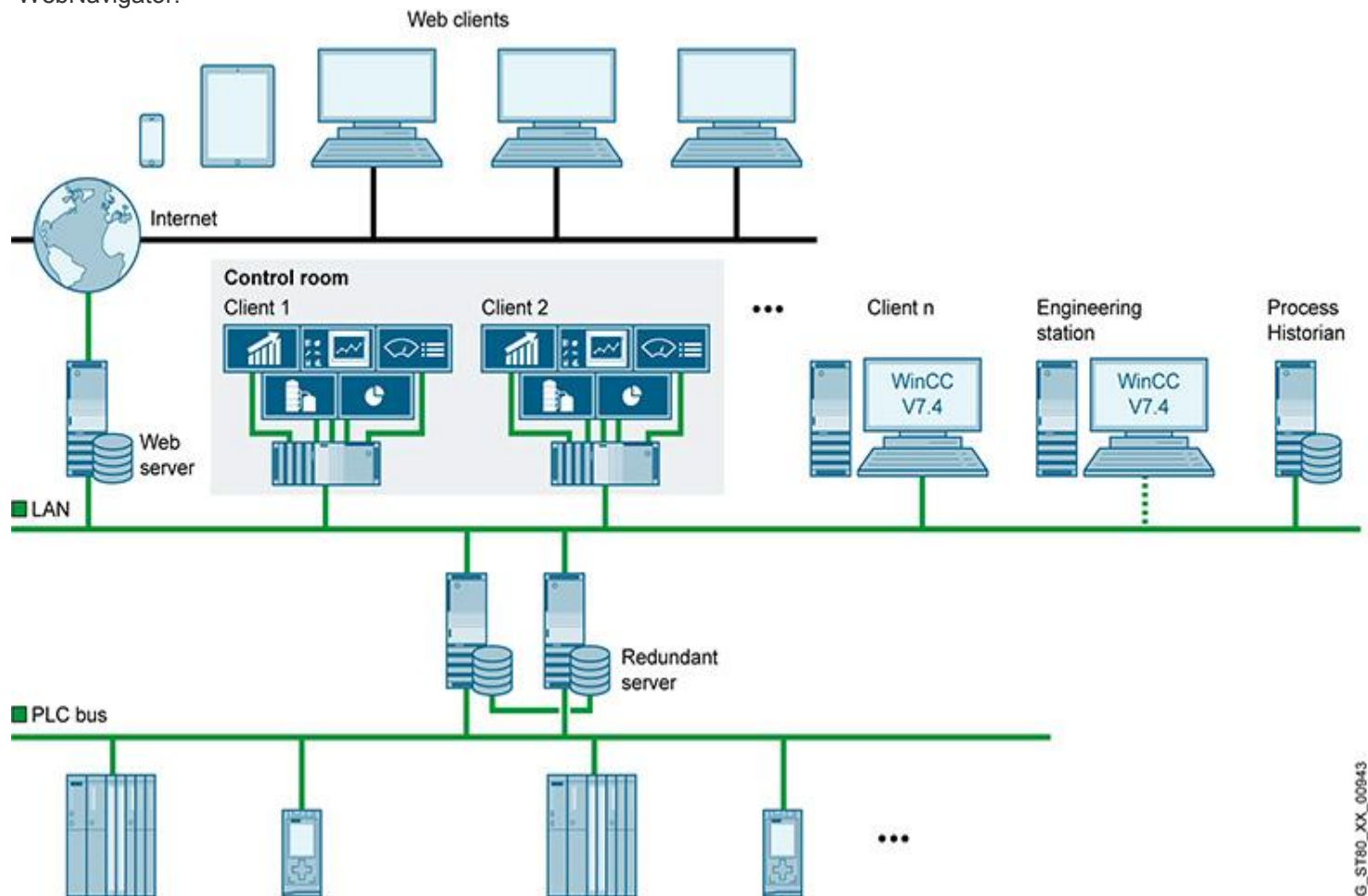


Reference: V7 Control room

As semi-finished products, galvanized steel sheets play a key role in industrial production, such as car manufacturing. One proven method of protecting steel sheets from rust is the application of a zinc coating in a hot dip galvanizing process, in which strips of sheet steel are drawn through a bath containing liquid zinc. Plants for this process are complex and in continuous operation, thus placing high demands on the process control system and the hardware used.

Advantages of the SIMATIC SCADA system and SIMATIC IPC solution:

- SIMATIC WinCC V7 SCADA control system whose scalability and openness also permits the implementation of future functional expansions.
- Redundant setup of the control system and operating stations with industry-compatible SIMATIC industrial PCs and Thin Clients.
- Optimum overview thanks to multi-monitor solution in the control room and more than 27 operating stations throughout the plant and production hall.
- Availability of the production data over a long period in SIMATIC Process Historian for reasons of traceability.
- Increased productivity using long-term analyses of plant availability, productivity, energy consumption and quality.
- More effective support and shorter downtimes thanks to fast, web-based access to plants with the SIMATIC WinCC WebNavigator.



SIMATIC WinCC V7 SCADA system

Modernization of a plant in the food and beverage industry on the basis of an integrated automation and visualization solution



WinCC Professional reference

The modernization involved equipping 3 production lines with an expanded SCADA system, a new control architecture, converters and motor starters. The project was implemented smoothly, and the integrated hardware and software solution with the TIA Portal enabled the simplification of the engineering process.

Advantages of the solution with the SIMATIC SCADA system WinCC Professional in the TIA Portal, S7-1500 and SIMATIC IPC:

- Simplified application engineering
- Efficient monitoring of the production lines enables the optimal path through the production to be defined for each batch.
- Increased productivity
- Simple and intuitive operation implemented thanks to good visual support
- Better control of the motors involved with the process
- Integration of the production data into the existing ERP system
- Faults in the current process can be easily localized

Tunnel control system for the longest railway tunnel in the world



Control room with WinCC OA

The SIMATIC WinCC Open Architecture tunnel control system is at the heart of the monitoring systems for the entire tunnel infrastructure. Continuous availability of the entire system is essential to ensure the trouble-free operation of the Gotthard Base Tunnel.

The Gotthard Base Tunnel has a tunnel control center at the south and north portals. The two tunnel control systems installed there monitor and control all of the installed systems and plants. All the required data are acquired, collated and visualized on the tunnel control system. A fully integrated maintenance management tool and an operations control system are also part of the tunnel control system with a large screen display.

The advantages of the solution:

- Highest failure safety thanks to the presence of doubly redundant tunnel control equipment – Disaster Recovery System (2x2 redundancy)
- Central monitoring of the infrastructure simplifies fault management
- More efficient operation through central control of the entire infrastructure
- Integration of many (sub-)systems thanks to OPC UA as a standardized interface throughout the entire project
- Optimal user friendliness through uniform user interface across all plants, overview of all systems at one workstation as well as large screen display (multi-monitor management)