Positioning of PC-based visualization
Machine-level area

WinCC Advanced
for PC-based single-user solutions

Process visualization (SCADA)

WinCC Professional
for PC-based multi-user solutions

WinCC V7
The standard SCADA system
SIMATIC HMI Software
Positioning of PC-based standard solutions

Production automation

WinCC Advanced
The PC-based single-user system

WinCC Professional
The system with SCADA basic functionality

WinCC V7
The scalable and open SCADA system for any application

Machines...
...Small plants...
...Large plants

Single-user systems...
...Multi-user systems...
...Distributed systems

SIMATIC integration
Openness
SIMATIC HMI Software
Application areas of PC-based standard solutions

**WinCC V7**
Process visualization with distributed multi-user systems, scalable and open SCADA functionality.

**WinCC Professional**
Process visualization with multi-user systems and basic SCADA functionality.

**WinCC Advanced**
Visualization software for simple, machine-level visualization tasks as single-user solution.
# System comparison

## Efficiency in operational management

<table>
<thead>
<tr>
<th>Function</th>
<th>WinCC RT Advanced</th>
<th>WinCC RT Professional</th>
<th>WinCC V7</th>
</tr>
</thead>
<tbody>
<tr>
<td>➤ Central user administration</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>➤ Archiving of alarms and process values</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>➤ Display and evaluation of process states and data on any office PCs</td>
<td>❌</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>➤ Target group-oriented reports and evaluations</td>
<td>❌</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>➤ Creation and management of data records in recipes</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>➤ Operator actions are traceable</td>
<td>✓</td>
<td>❌</td>
<td>✓</td>
</tr>
<tr>
<td>➤ Working with calendar functions</td>
<td>❌</td>
<td>❌</td>
<td>✓</td>
</tr>
<tr>
<td>➤ Analysis and optimization of production based on individual performance indicators</td>
<td>❌</td>
<td>❌</td>
<td>✓</td>
</tr>
</tbody>
</table>

## Efficient energy management

<table>
<thead>
<tr>
<th>Function</th>
<th>WinCC RT Advanced</th>
<th>WinCC RT Professional</th>
<th>WinCC V7</th>
</tr>
</thead>
<tbody>
<tr>
<td>➤ Optimized and cost-effective energy management</td>
<td>❌</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>➤ Transparency in energy consumption from the infeed all the way to the load</td>
<td>❌</td>
<td>❌</td>
<td>✓</td>
</tr>
</tbody>
</table>
## System comparison
### Easy scalability

<table>
<thead>
<tr>
<th>Function</th>
<th>WinCC RT Advanced</th>
<th>WinCC RT Professional</th>
<th>WinCC V7</th>
</tr>
</thead>
<tbody>
<tr>
<td> Setup of a high-performance client/server system</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td> Increase of system availability through redundancy</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td> Powerful long-term archiving</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td> Remote operator control and monitoring via the Internet/intranet with WinCC Sm@rtServer</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td> Remote operator control and monitoring via the Internet/intranet with WinCC/WebNavigator</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

## Industry- and technology-specific scalability

<table>
<thead>
<tr>
<th>Function</th>
<th>WinCC RT Advanced</th>
<th>WinCC RT Professional</th>
<th>WinCC V7</th>
</tr>
</thead>
<tbody>
<tr>
<td> Connection of remote terminal units</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td> Sequential control of recipe and sequence-based processes</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
</tbody>
</table>
System comparison
Innovative solutions

<table>
<thead>
<tr>
<th>Function</th>
<th>WinCC RT Advanced</th>
<th>WinCC RT Professional</th>
<th>WinCC V7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target group-oriented reports and evaluations</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Platform-independent operator control and monitoring via the Internet/intranet</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Intuitive operation with multitouch</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
## System comparison
### Openness for special requirements

<table>
<thead>
<tr>
<th>Function</th>
<th>WinCC RT Advanced</th>
<th>WinCC RT Professional</th>
<th>WinCC V7</th>
</tr>
</thead>
<tbody>
<tr>
<td> Individual expansion of the basic functionality</td>
<td>✓</td>
<td>(✓)</td>
<td>✓</td>
</tr>
<tr>
<td> Cross-manufacturer communication</td>
<td>(✓)</td>
<td>(✓)</td>
<td>✓</td>
</tr>
<tr>
<td> Flow of information between production and the IT world</td>
<td>x</td>
<td>(✓)</td>
<td>✓</td>
</tr>
</tbody>
</table>

(with restrictions compared to WinCC V7)
Central user administration

• Plant-wide, central user administration with individual assignment of rights

• With SIMATIC Logon\(^1\) integrated into the Windows user administration and cross-utilized for SIMATIC Panels and several WinCC Runtime stations

• High degree of security thanks to precautions on administrator and user side

1) Optional for WinCC Runtime Advanced, included in the basic kit for WinCC Runtime Professional and WinCC V7
Archiving of alarms and process values

WinCC Logging / ArchiveTags

• Logging and processing of process data of an industrial plant

• Online evaluation of process value archives and alarm logs

• Evaluation using standard Microsoft tools such as Excel

<table>
<thead>
<tr>
<th>WinCC RT Advanced</th>
<th>WinCC RT Professional</th>
<th>WinCC V7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filing format</td>
<td>File-based, database via ODBC interface</td>
<td>MS SQL database</td>
</tr>
<tr>
<td>Number</td>
<td>+</td>
<td>++</td>
</tr>
</tbody>
</table>
Display and evaluation of process states and data on any office PCs

WinCC DataMonitor

• Display and analysis of current process states and historical data on office PCs using standard tools, e.g. MS Internet Explorer or MS Excel via the web

• Creating event-controlled or time-controlled reports

• Individual compilation of information from the process during runtime

Target group-oriented reports with the SIMATIC Information Server
Creation and management of data records in recipes

WinCC Recipes / UserArchives

- Creation and management of data records for machine or production data
- Transfer of data records from or to the controller
- Clear tabular display of the data elements

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>+</td>
<td>++</td>
</tr>
</tbody>
</table>
Operator actions are traceable

WinCC Audit

- Recording of all GMP-relevant changes of variables and operator actions in tamper-proof audit trails.

- Electronic signatures for important operator actions

- Conforming to the GMP requirements for the pharmaceuticals industry (e.g. the Food and Drug Administration)

- In addition for WinCC V7: Tracing project changes
Working with calendar functions

WinCC CalendarScheduler
WinCC EventNotifier

• Chronological planning of events and actions in the style of Microsoft Office

• Sending of important messages to a defined group of people at a defined time by email or text message

• Traceability of the events by means of logging in WinCC message system
Analysis and optimization of production based on individual performance indicators

WinCC PerformanceMonitor

• Calculation and analysis of plant-specific key performance indicators (OEE, MTBF, MRT, etc.)

• Short configuration time and familiarization time due to integration into WinCC

• Complete transparency for all machines as basis for optimizing plant productivity
Optimized and cost-effective energy management

SIMATIC B.Data

• Company-wide transparency on a cost center basis

• Integration into existing system environments by means of flexible interfaces

• Can run as an option for WinCC V7/WinCC Runtime Professional or autonomously
Transparency in energy consumption from the infeed all the way to the load

**SIMATIC Powerrate**

- Recording, visualization and saving of all energy-relevant consumption data
- Improvement of the energy efficiency by identifying energy-intensive loads and processes
- Optimization of the company according to energy parameters
Setup of a high-performance client/server system

WinCC Server / WinCC Client

• Several operator control and monitoring stations coordinated in a group with networked automation systems

• One server supplies clients with process and archive data, messages, screens and reports

• Easy and cost-effective configuration of distributed operator stations

Only for WinCC V7: Distributed multi-user systems

• Allocation of the functions to up to 18 servers for higher configuration limits

• Access by a client to several servers (Multi-Client)
Increase of system availability through redundancy

WinCC Redundancy

- Parallel operation of two coupled WinCC single-user systems or servers
- If one server computer fails, the second server assumes control of the entire system
- Automatic synchronization of all data after the return of the failed server in the background
Powerful long-term archiving

SIMATIC Process Historian

• Central and real-time archiving of process data and messages

• Plant wide long-term archive for any number of WinCC systems

• Scalable at any time without production downtime
Remote operator control and monitoring via the Internet/intranet with WinCC Sm@rtServer

WinCC Sm@rtServer

• Control actions are mirrored on a display on the remote system and vice versa
• No installation required on the client
• Up to 5 clients simultaneously
• Can also be operated from mobile terminal equipment via Sm@rtClient app

Remote operator control and monitoring with WinCC/WebNavigator (for WinCC Runtime Professional and WinCC V7)
Remote operator control and monitoring via the Internet/intranet with WinCC/WebNavigator

WinCC WebNavigator

- Independent control of the individual (web) clients
- Up to 50 (WinCC Runtime Professional) or 150 (WinCC V7) web clients simultaneously
- Only for WinCC V7:
  - WebNavigator server on WinCC multi client possible
  - Automatic switchover of the web clients with redundant servers
  - Web server farms (LoadBalancing)

Platform-independent operator control and monitoring via the Internet/intranet
Connection of remote terminal units

**WinCC Telecontrol**

- Support of international telecontrol protocols (SINAUT ST7, IEC 60870, DNP3)
- Flexible configuration through multifaceted supported network topologies and transmission protocols
- Uniform user interface for local and remote processes
Sequential control of recipe- and sequence-based processes

WinCC SequenceExecutionSystem (SES)

- Definition of production steps and combining them into individual process sequences
- Adaptation of the step sequence or parameters during production
- Especially suited for the process actions dosing, mixing and material transport
Target group-oriented reports and evaluations

SIMATIC Information Server

- Simple web-based reporting and administration
- Transparent access to historical WinCC data (WinCC V7, WinCC RT Professional and PCS 7 archives and long-term archives in the SIMATIC Process Historian), also via tablets
- Integration as add-in in MS Excel, MS Word, or MS PowerPoint
- Cyclic activation based on demands or events
- Forwarding of reports as e-mail
Platform-independent operator control and monitoring via the Internet/intranet

WinCC WebUX

• Independent access to process data and plant data from any terminal equipment with HTML5-capable browser

• Maintenance-free, since no installation on client side

• Licensing of monitoring access (only monitoring) and operating access (operator control and monitoring)

• One monitoring license is available for FREE in the V7.3 basic system

_remote_operator_control_and_monitoring_via_the_internet_intranet_with_wincc_webnavigator
Intuitive operation with multitouch

Modern and innovative operator concepts

• Two-hand operation
  • ... with WinCC Runtime Advanced: One release button per screen, configuration via checkbox
  • ... with WinCC Runtime Professional: Several release buttons possible, configuration via system function
  • ... with WinCC V7: Several release buttons possible, configuration via direct connection

• Two-finger operation (e.g. moving two sliders)
  • ... with WinCC Runtime Professional and WinCC V7

• Flicks (e.g. screen navigation)
  • ... with WinCC V7 and WinCC Runtime Professional via history
  • ... with WinCC V7 via favorites
Intuitive operation with multitouch

Modern and innovative operator concepts

• **Zoom**
  - ... with WinCC Runtime Advanced in Controls
  - ... with WinCC Runtime Professional and WinCC V7 in screens incl. decluttering (display of details depending on the zoom factor)

• **Panning (moving the view)**
  - ... with WinCC Runtime Advanced, WinCC Runtime Professional and WinCC V7 in Controls
  - ... with WinCC Runtime Professional and WinCC V7 in screens

• **Quick scrolling in lists with several fingers**
  - ... with WinCC Runtime Advanced
Individual expansion of the basic functionality

Dynamization and action configuration through scripting
... VB scripts for WinCC Runtime Advanced, VB and ANSI-C scripts for WinCC Runtime Professional and WinCC V7

Creation of own controls for controlling and monitoring processes
... Option WinCC ControlDevelopment for WinCC Runtime Advanced and WinCC Runtime Professional, Option WinCC/ODK for WinCC V7

Automated configuration
... for WinCC Runtime Advanced in the standard version (TIA Portal Openness), for WinCC V7 in the standard version (VBA, expanded range of functions)

Access to data and functions of the engineering system via open programming interface
... for WinCC Runtime Advanced in the standard version (TIA Portal Openness), option WinCC/ODK for WinCC V7 (expanded range of functions)

Access to data and functions of the runtime system via open programming interface
... for WinCC Runtime Professional in the standard version, option WinCC/ODK for WinCC V7
Cross-manufacturer communication

...via OPC

- **WinCC RT Adv**
- **WinCC RT Prof**
- **WinCC V7**

<table>
<thead>
<tr>
<th>Server</th>
<th>WinCC RT Adv</th>
<th>WinCC RT Prof</th>
<th>WinCC V7</th>
</tr>
</thead>
</table>

...via WinCC OLE DB

- Direct access to the archive data saved in the MS SQL Server database by WinCC
- Analysis functions such as minimum, maximum, message hit list, etc.
- For WinCC Runtime Professional in the standard version
  - For WinCC V7 as an option (WinCC/ConnectivityPack)

WinCC ConnectivityStation

- **WinCC RT Adv**
- **WinCC RT Prof**
- **WinCC V7**

- Access to WinCC data via OPC and WinCC OLE-DB from any Windows computer without WinCC installation
Flow of information between production and the IT world

**WinCC IndustrialDataBridge**

- Connection of WinCC to databases and IT systems
- High-performance, bidirectional data exchange between different systems
- Reading/writing of WinCC data from/to Office formats or databases.
- For WinCC Runtime Professional as a standalone application (no control available for Runtime)
Thank you for your attention!

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