

The background image shows two women, one with long brown hair and one with dark curly hair, looking intently at a large, curved digital display. The display shows various industrial data visualizations, including a gauge with the number 30, a line graph, and a table of values. The scene is set in a modern, brightly lit environment, possibly a control room or a data center.

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SIMATIC WinCC Unified System

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[siemens.com/wincc-unified-system](https://www.siemens.com/wincc-unified-system)

Siemens Digital Industries Webinari 1/2



Datum	Tema	Predavač
14.04. / 19.05.	FA1: Motion Control	<i>Darko Živković, Jelena Đukić</i>
15.04. / 14.05.	FA2: Energy Management System	<i>Zoran Jovanović</i>
22.04. / 21.05.	FA3: Redundantni kontroleri serije S7-1500R/H	<i>Mirko Milovanović</i>
 05.05. / 26.05.	FA4: WinCC Unified	<i>Mirko Milovanović</i>
15.04. / 13.05.	MC1: DT konfigurator	<i>Nenad Bakal, Pavle Dragišić</i>
23.04. / 22.05.	MC2: Sizer, large drives	<i>Miloš Marković, Pavle Dragišić</i>
06.05. / 26.05.	MC3: Sizer, motion drives	<i>Miloš Marković, Pavle Dragišić</i>
21.04. / 21.05.	CI1: Industrial Networks	<i>Jelena Đukić</i>

Siemens Digital Industries Webinari 2/2



Datum	Tema	Predavač
16.04. / 15.05.	PI1: PI Academy world	Andrijana Popara, Miljan Miljanić, Marko Marić
24.04. / 22.05.	PI2: PI workshop for specialist	Andrijana Popara, Miljan Miljanić, Marko Marić
08.05. / 29.05.	PI3: #New@PI	Andrijana Popara, Miljan Miljanić, Marko Marić
30.04. / 29.05.	AE1: Digitalna rešenja u procesnoj industriji	Jelena Đukić, Marko Milenković
29.04.	CP1: Control Panel Online Symposium	Siemens worldwide webinar
22.04. / 27.05.	CP2: Clever engineering in the control panel	Tijana Džodžo
28.04. / 12.05.	CP3: New series of signaling devices 3SU	Tijana Džodžo
21.04. / 20.05.	CP4: SIRIUS 3RW Soft starters	Bojan Janković
07.05. / 28.05.	DE1: Siemens Digital Enterprise	Zoran Jovanović

Današnji predavač



**Mirko
Milovanović**

Responsibility

PLC
HMI/SCADA/IPC

Contact

✉ mirko.milovanovic@siemens.com

🏭 RC-RS DI FA

🏠 Belgrade, Serbia

Human Machine Interface is changing...



Increase of production data

The amount of data generated annually will increase by five times until 2025. (175 Zettabyte)



Increasing number of devices and systems to connect

Gartner IT forecasts that the number of IoT devices will reach 25 billion by 2021



Upcoming user interaction scenarios

Expected sales of virtual reality equipment by 2022: 26.7 million devices (0.8 million in 2018)

If you want to master this change you have to deal with...

Web Technology
Scalability Manufacturing IT Collaboration Object orientation
Device independency SVG Openness Plant Intelligence
Engineering Automation One Engineering Everywhere Access
Data Backbone HTML5
On Premise IT-Integration Edge computing Connectivity Usability
Digitalization **Cloud Connectivity**

– ”

These topics define the requirements for the HMI systems of the next decade.

We meet these requirements with the new WinCC Unified system!



Technology

- Native Web Technology HTML5, SVG, JavaScript
- Device independent
- Object oriented – HMI



Scalability

- One Engineering
- Unified Comfort Panels
- WinCC Unified PC
- Collaboration



WinCC Unified in TIA Portal



Everywhere

- On Premise
- Unified @Cloud
- Unified @Edge
- MindSphere Apps



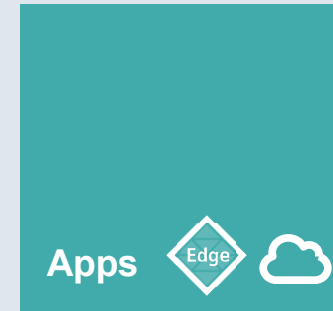
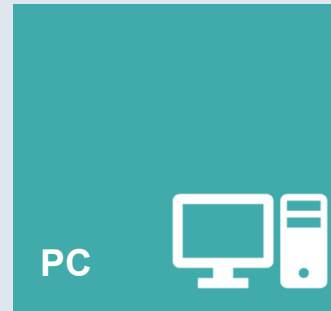
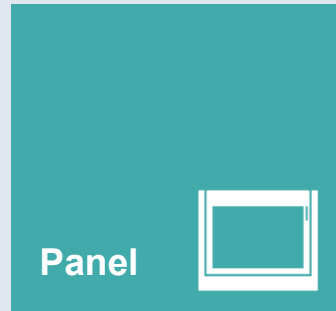
Integration

- Basis for Digitalization
- Plant Intelligence
- Integration Platform for everything north of the PLC
- Openness

One engineering in TIA Portal to cover all use cases



WinCC
Unified



— ”

WinCC Unified is fit for today's HMI and SCADA applications, but also ready for future scenarios in the digitization context (e.g. Augmented Reality or Edge technologies).

SIMATIC WinCC Unified System V16 – Overview



Platform

Unified Comfort Panels, PC



Common engineering
for all platforms



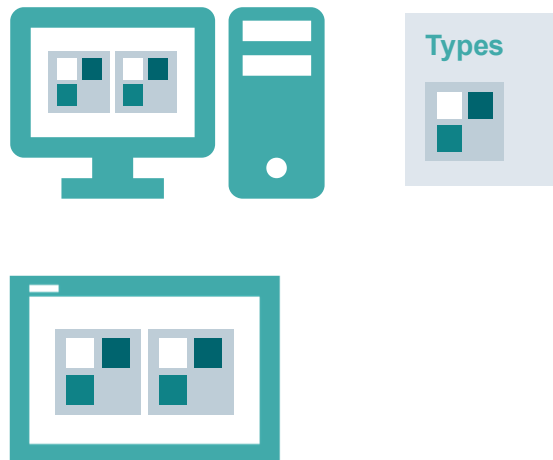
Software

SIMATIC WinCC Unified
in TIA Portal V16



SIMATIC WinCC Unified – One common HMI platform

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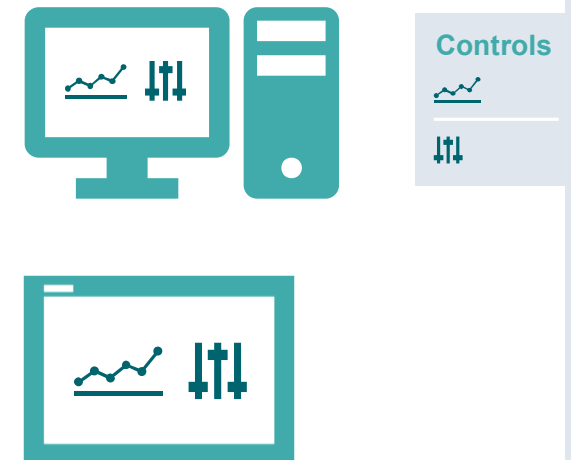
Faceplates

Use the same faceplates for Panel- and PC Systems.



Screen structure

Consistent structuring of screens with picture windows.



Controls

Common UI Controls for Panels and PC to ensure the best Usability.

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SIMATIC WinCC Unified

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SIMATIC WinCC Unified – Highlights



Scalability from panel to control center

One common software platform for all devices



Modern User Interface based on web technologies

Flexible access with any modern web browser



Advanced scripting based on JavaScript

Powerful and platform independent scripting language



Automate engineering tasks with TIA Portal Openness

Create, validate and reuse WinCC Unified components automatically



Technological hierarchy for object oriented engineering

Define plant assets once and reuse them by instances



Calendar and Performance Insight Option

Manage working times and get production insights based on individual KPI calculation



Easy collaboration of WinCC Unified systems

Setup of distributed configurations. Predefined as well as on the fly access

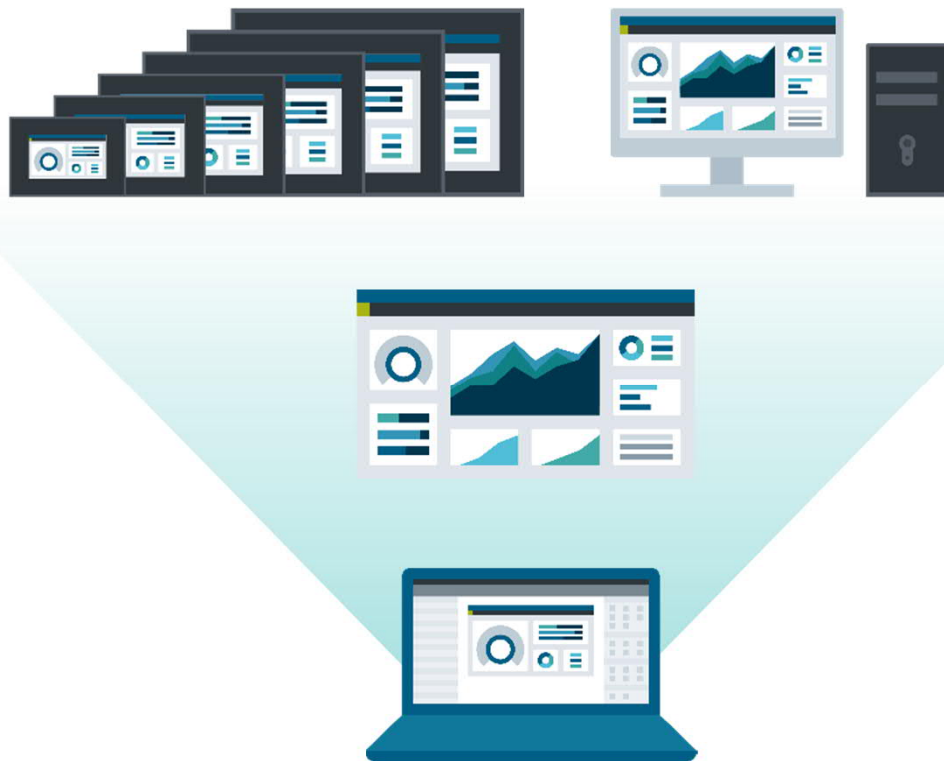


Use WinCC Unified as Integration Platform

Integrate IT-Tools into one user interface and exchange data via interfaces



SIMATIC WinCC Unified – Scalability from panel to control center



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One modern software platform for all runtime environments

- One engineering in TIA Portal
- Reuse components on all WinCC Unified platforms
- Consistent Usability for UI Controls
- Device change between all devices based on WinCC Unified

WinCC Unified – Modern User Interface

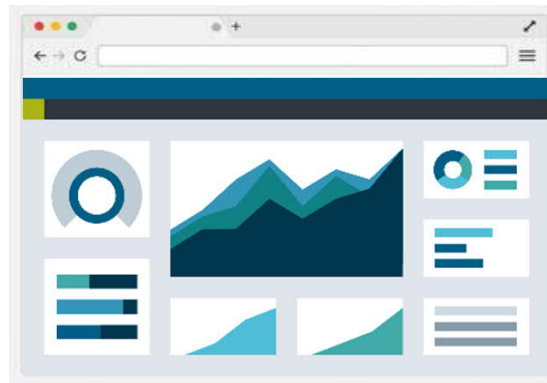


A great experience. No matter where you are!



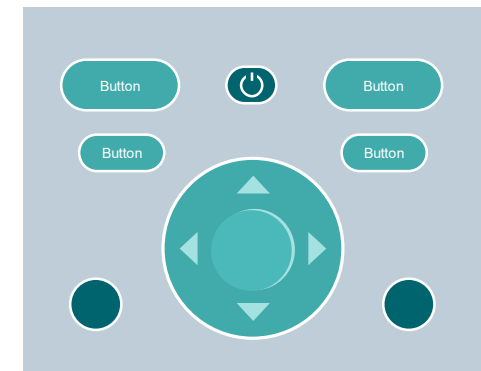
Based on Web Technologies

Like HTML5, SVG and JavaScript.
Lightweight user interface with all the possibilities you're used to.



Access from Everywhere

With any modern web browser.
No need for installing extra plugins –
Also on mobile devices.



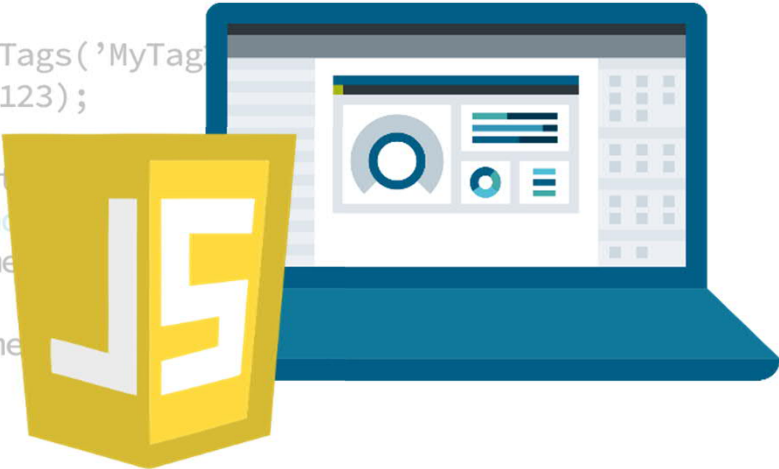
Customize and Animate

Use Dynamic SVGs or Custom
Web Controls to make your HMI
stand out.

WinCC Unified – Scripting – Advanced scripting with the power of JavaScript



```
export function Funtion (parameter1, parameter2){  
  let tag1 = Tags('MyTag1');  
  tag1.Write(123);  
  
  let tag2 = Tags('MyTag2');  
  tag1.Write(123);  
  
  if (tag1 > tag2) {  
    UI.RootWindow.HMIRuntime.  
  } else {  
    UI.RootWindow.HMIRuntime.  
  }  
}
```



JavaScript is a widely spread and easy to learn scripting language

- One scripting language for all platforms (Panel and PC Systems)
- Use the entire object oriented JavaScript scope for handling data, objects, classes, inheritance
- Predefined Code Snippets for common tasks available in TIA Portal
- Integrated debugging functionality

WinCC Unified – TIA Portal Openness



Higher engineering quality in less time



Configurator

Build your machine configurator with a .net programming language and build a UI that fits your needs.

TIA Portal

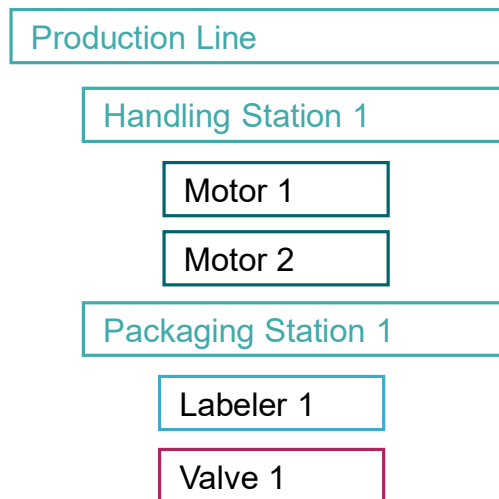
Get access to existing assets or create them automatically from scratch via the Openness API.

Projects

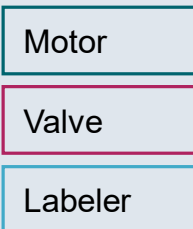
Create individual project configurations within seconds. Reduce risk and save time.

Engineering automation is the power booster for your workflow

WinCC Unified – Technological Hierarchy – Define plant assets once and reuse them by instances

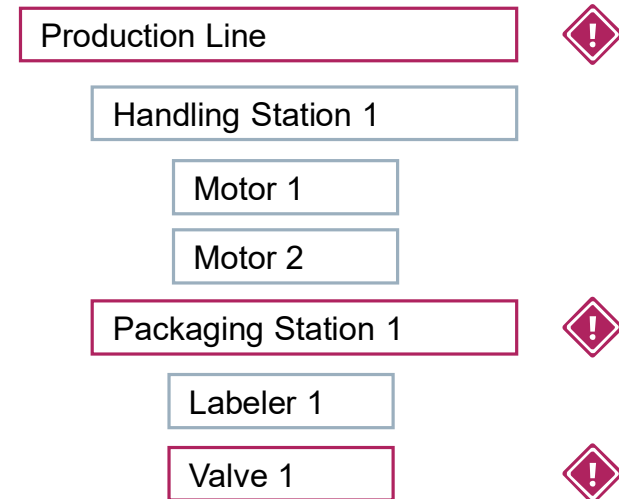


Types



Object oriented engineering approach

Create a technological structure of your plant and build plant assets based on objects that can be updated centrally.

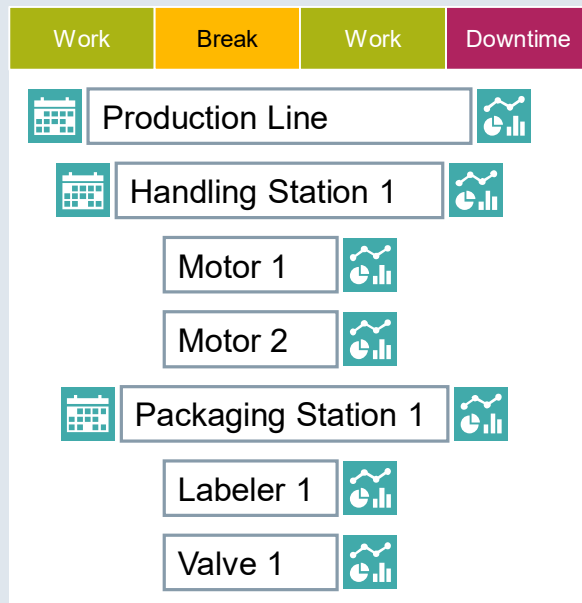


Hierarchically structured operation

Use the technological hierarchy to navigate through all of your plant assets. Get a quick overview of system status based on a hierarchical alarm structure.

SIMATIC WinCC Unified – Plant Intelligence - Calendar & Performance Insight

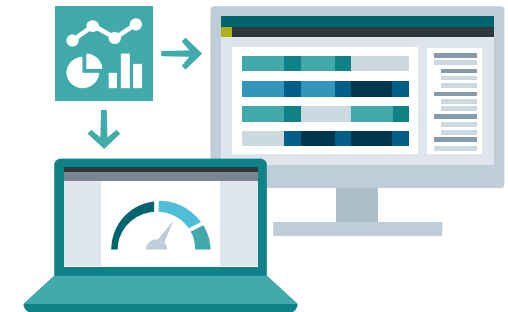
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Standardized **Time model**
as basis for Calendar and
Performance Insight



Calendar
Schedule activities for the
production



Performance Insight
Improving performance by
calculating individual KPIs

WinCC Unified – Calendar Option

Plan your production shifts



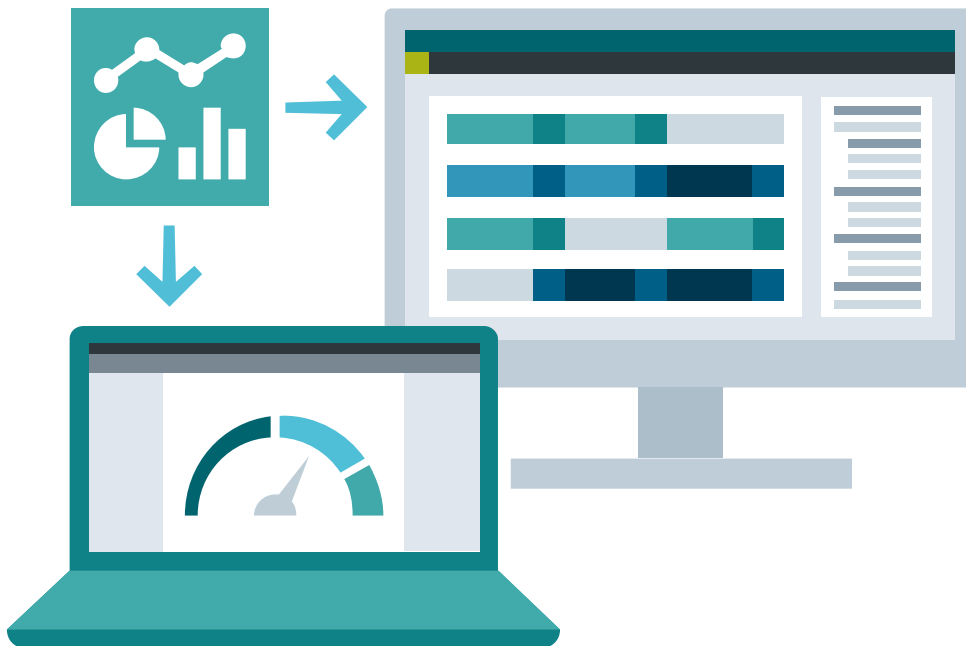
Schedule activities for the production

- Based on the technological hierarchy
- Define working time of machines and systems
- Create standard templates for regular production days and shifts.
- Planning the execution of activities relative to a timeline, for example, machine
 - start 30 minutes before early shift (ramp-up time)

WinCC Unified – Performance Insight Option



Get value out of your data



Production insights based on individual KPI calculations

- Global definition of KPI formulas according to ISO22400
- Object oriented KPI engineering based on technological hierarchy
- Comprehensive set of WinCC controls for the display of KPIs
- Downtime analysis
- Calculation of the performance of machines / lines / plants according to context (e.g. shift, order, etc.)
- Creating an Excel-based report

WinCC Unified – Collaboration – Making collaboration more flexible



Exchange process data between WinCC Unified systems

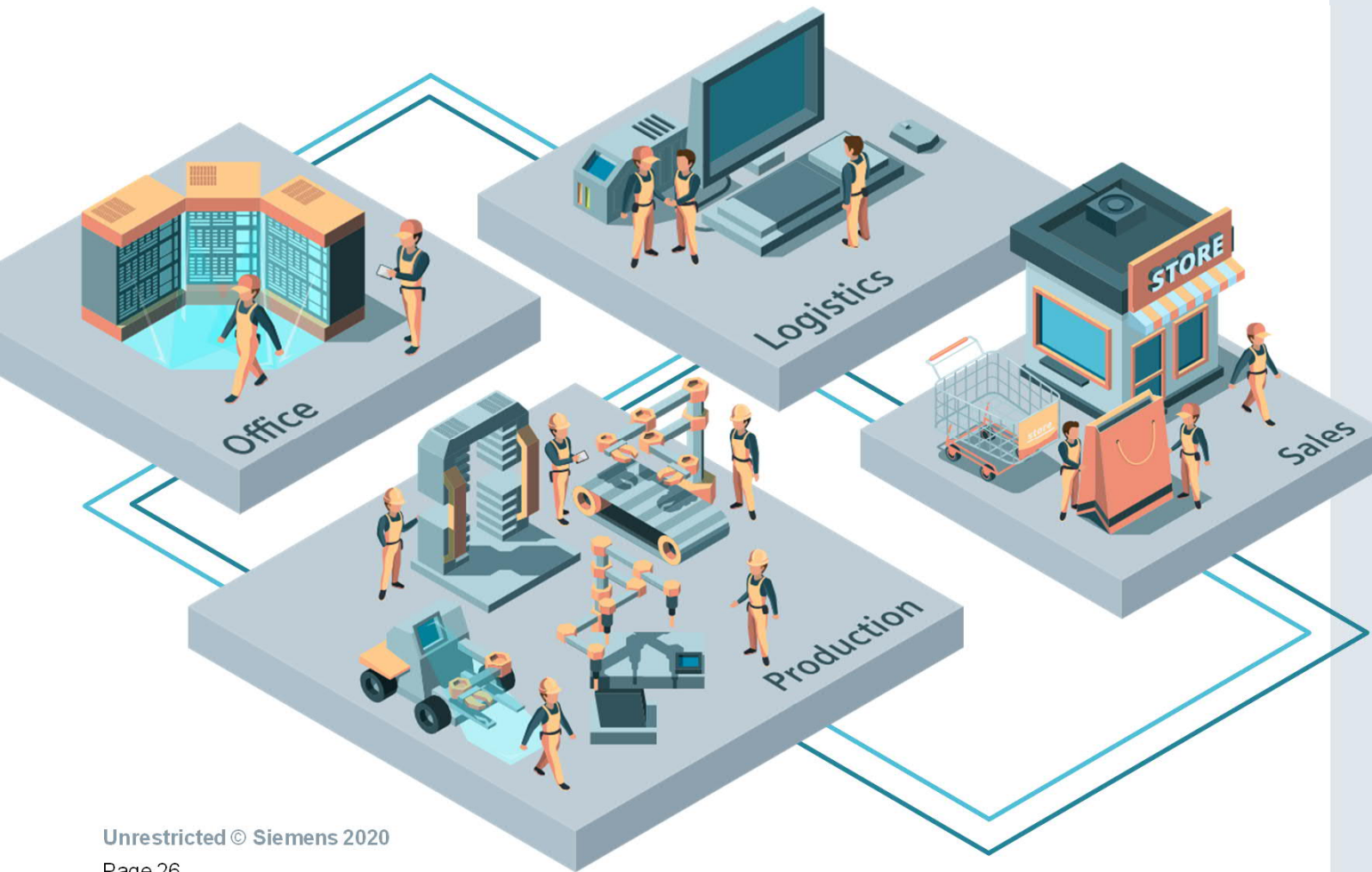
- Every machine can provide different types of data to other WinCC Unified systems
- Share screens, tags, archives and alarms
- Access to data of other Unified platforms during Runtime



Combine production data from several machines for supervision

- Setup of distributed configurations for lines and plants
- Increases the flexibility and simplifies the connection of different machines to one unified system
- Connect systems while commissioning or later

WinCC Unified as integration platform – Connect and integrate 3rd party tools



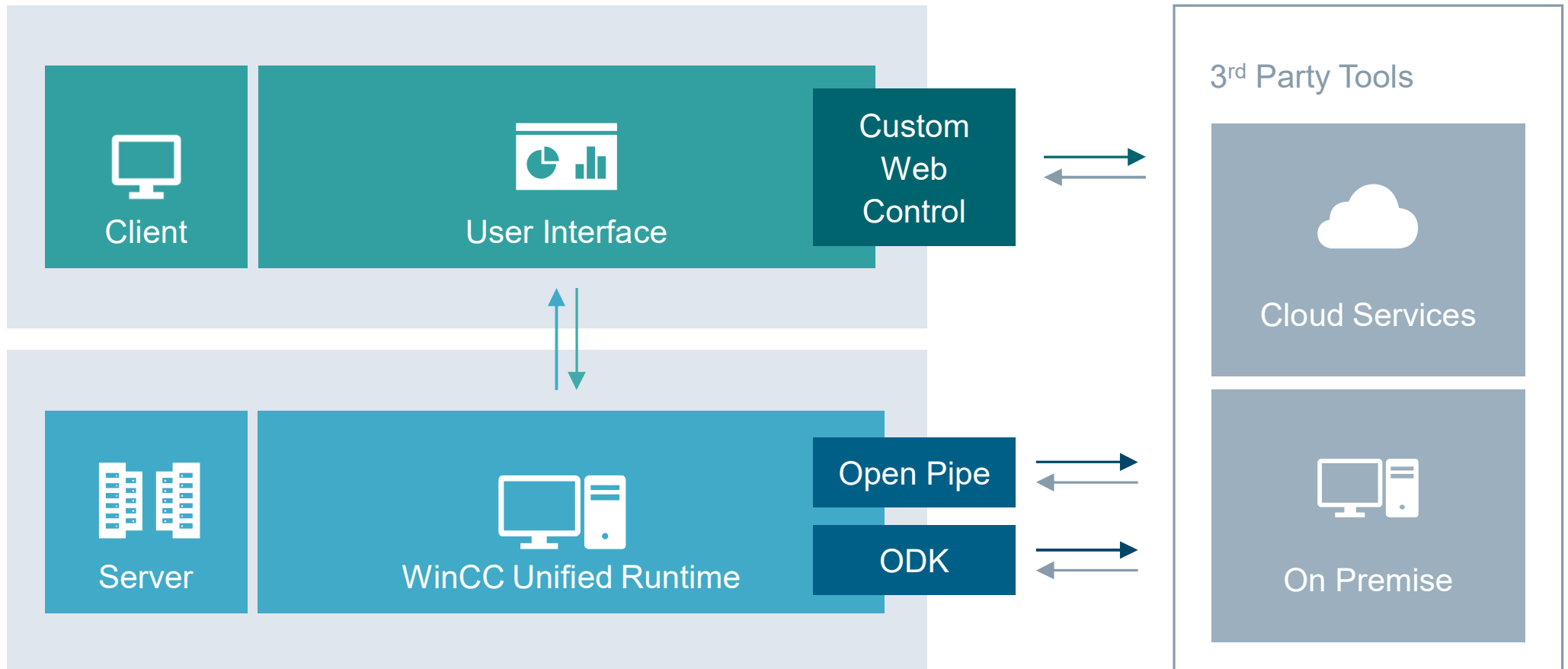
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Different departments use
different software system

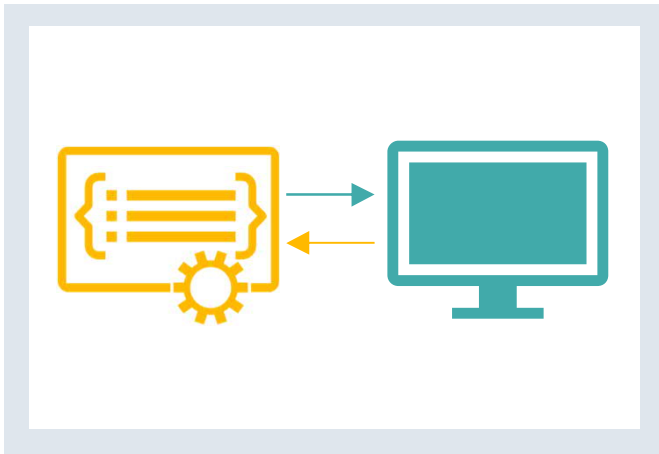
Digitalization requires
seamless data flow

Open interfaces are required
for all systems

WinCC Unified – Integration platform – Connect and integrate 3rd party tools



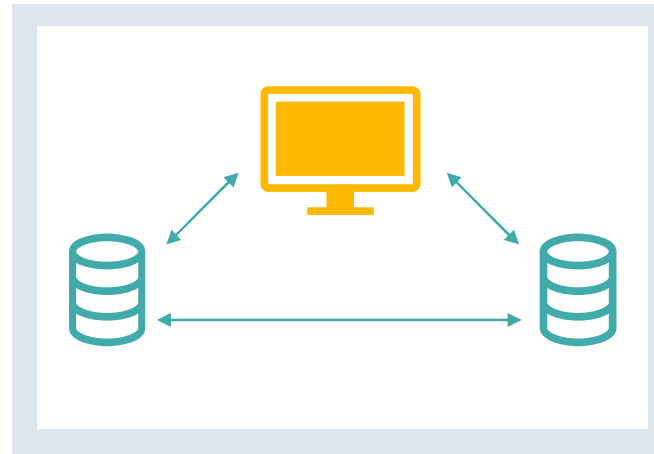
WinCC Unified – Integration platform – Examples



Open Pipe Data Interface

Server sided data interface
for online tags and alarms.

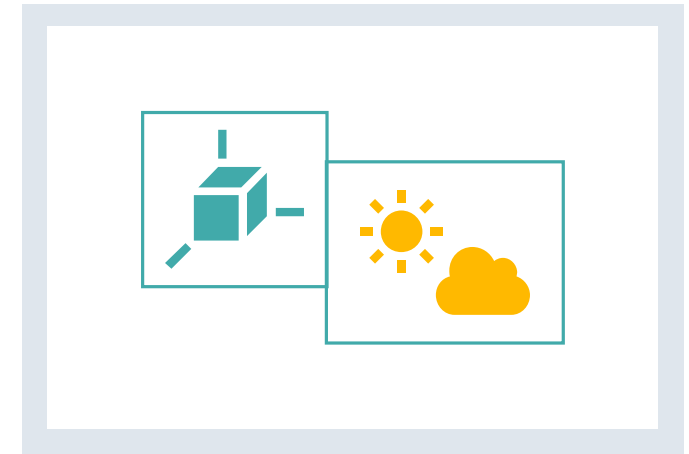
Independent from programming language.
Can be used to connect several software
tools to WinCC Unified.



Runtime Openness Data Interface

Server sided data interface for online
and historical tags and alarms with
.net or C++ programming.

Exchange huge amounts of data
with Databases or IT systems.



Custom Web Control Container for Web Content

Add custom UI controls (e.g. 3D Viewer)
or visualize and exchange data of 3rd party
services (e.g. weather data). Can be used
to get access to sensors of mobile clients
(e.g. camera, GPS)

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Powered
by WinCC
Unified

SIMATIC HMI Unified Comfort Panels

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SIMATIC HMI Unified Comfort Panels – Highlights



Great usability in a brilliant way

Capacitive Multitouch technology combined with bright colors and excellent readability



Size doesn't matter

Same interfaces and functionality for all devices from 7" to 22"



Need more? Add Apps!

Use Siemens Industrial Edge to extend standard functionality by edge apps



The power to do more

Realize larger applications thanks to increased system limits



Security Integrated

From access control and encrypted communication to security patches. Everything is inside



Everything under control

Full commissioning within TIA Portal. No IT-management necessary



Ready for the future as of today

Take full advantage of WinCC Unified with a Modern UI, openness and full scalability



Comfort DNA remains

Well known Comfort Panel features like automatic system backup remain



SIMATIC HMI Unified Comfort Panels – Multitouch from 7" to 22"

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SIMATIC HMI Unified Comfort Panels – Standard- and Neutral design version

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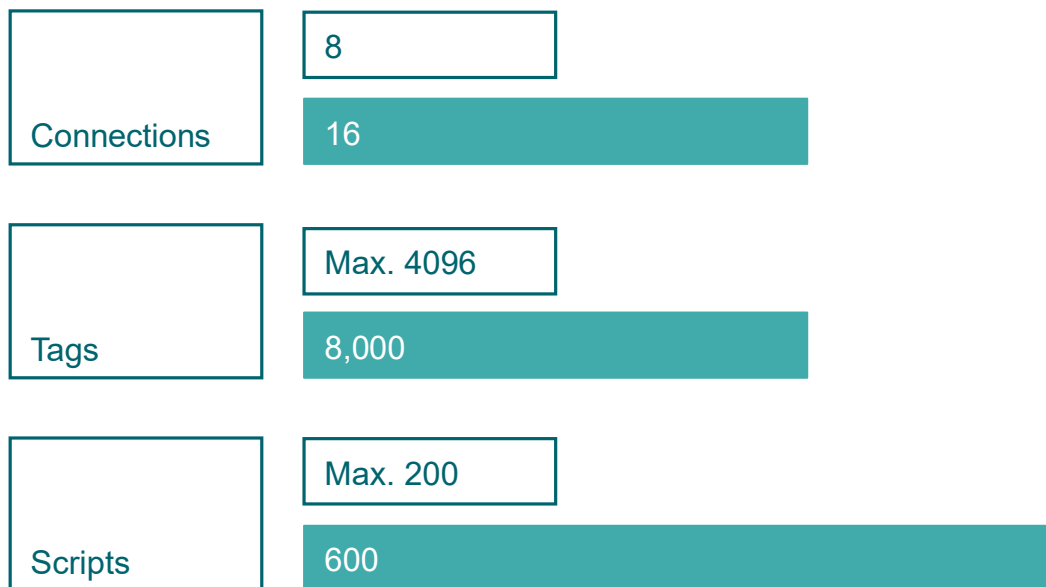


Standard design
Silver frame – With Siemens branding



Neutral design
Black frame – No branding

SIMATIC HMI Unified Comfort Panel – Increased system performance



□ Comfort Panel ■ Unified Comfort Panel

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Increased quantity structure
from 7" to 22"

Doubled quantity structure
compared to Comfort Panel

Differentiation only for
tags and objects per screen

SIMATIC HMI Unified Comfort Panels – Get work done!

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Ready to use system applications

Work in documents, view instruction videos or get access to web-based systems with the preinstalled applications on every Unified Comfort Panel.

Preinstalled system applications

Browser	Google Chrome
Media Player	VLC Media Player
Office	Libre Office
PDF Viewer	Okular

SIMATIC HMI Unified Comfort Panels – Need more? Add apps!



Unified Comfort Panel

Application Requirements

Alarming, Logging, Connectivity, Recipes, Multitouch

Standard Requirements

App

App

App

Data Analytics, Reporting, 3rd party service

Application specific requirements

What used to be possible only with separate hardware or an open PC platform.
Is now also possible on an embedded platform that is easier to maintain. Everything in one device.

SIMATIC HMI Unified Comfort Panels – Need more? Add apps!

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Expand the standard functionality with Edge Apps on all Unified Comfort Panels

Siemens or others can provide applications
Access to WinCC Unified Online Tags using the
OpenPipe interface

- **Device Managed Edge**
Apps can be managed directly on the device
- **Centrally Managed Edge**
Apps can be managed centrally
with the Industrial Edge Management System

SIMATIC HMI Unified Comfort Panel – Siemens Industrial Edge integration



Step 2

Device Managed Edge

Locally on device

- Installation and Uninstallation of Edge Apps on the device
- Update of Edge Apps
- Start and Stop of Edge Apps
- Diagnostic information of all currently running edge apps
- Remote access via webserver or Control Panel of device

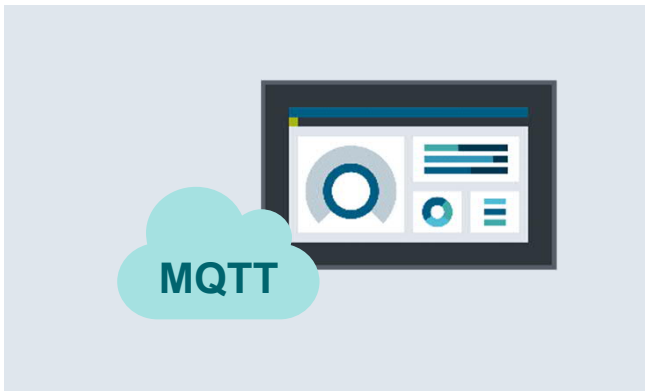


Centrally Managed Edge

On-Premises / On-Cloud / On-MindSphere

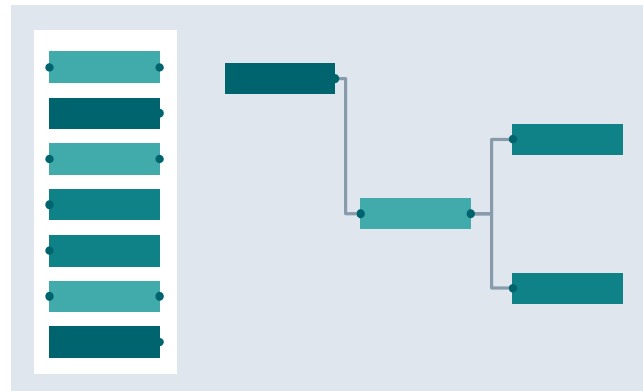
- On- and Offboarding of devices
- Diagnostic information
- Version management of Edge Apps
- Installation and Uninstallation of Edge Apps (Remote)
- Start and Stop of Edge Apps (Remote)
- Diagnosis of Edge Apps (Remote)
- Deploying of Edge Apps based on customized device-groups
- Deploying of Security Patches

SIMATIC HMI Unified Comfort Panels – Edge App Examples



MQTT App Cloud Connection

MQTT is the most common protocol for the connection of automation equipment to cloud based systems like MindSphere.



SIMATIC Flow Creator Data processing made easy

Define your data flow and create rules, KPIs or trigger actions, if threshold values are exceeded or a special event happens.



SIMATIC Notifier Mobile Notification

Transform the Unified Comfort Panel into a messaging service. Manage and send mobile notifications directly to your Smartphone or Smartwatch.

Device-Managed Edge Licensing – Unified Comfort Panel

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Free



Demo, Test and Development

- Siemens Industrial Edge is part of every Unified Comfort Panel by default
- Simply activate the Edge functionality in the Control Panel
- No need for a separate software package

€200




Productive Usage

- As soon as the device is in productive usage a certificate of license will be required for each Unified Comfort Panel
- No need for license transfer
- Version independent

Free Application Example – “Getting Started with Edge @ Unified Comfort Panels”



```
export function Funtion (parameter1, parameter2){  
  let tag1 = Tags('MyTag1');  
  tag1.Write(123);  
  
  let tag2 = Tags('MyTag2');  
  tag1.Write(123);  
  
  if (tag1 > tag2){  
    UI.RootWin.Run('MyTag1');  
    HMIRutntin('MyTag1');  
  } else {  
    HMIRun('MyTag2');  
  }  
}
```



Free application example including following content

- MQTT App
- Source Code
- Documentation about how to develop an App and how to download to the Unified Comfort Panel
- How to use the Siemens App Publisher
- How to use the Open Pipe interface to exchange data between an Edge App and the WinCC Unified

Planned to be available in SIOS until the end of May 2020

SIMATIC HMI Unified Comfort Panels – Security integrated



Further information

Security guidelines for SIMATIC HMI devices [SIOS 109481300](#)



Activate/Deactivate Hardware interfaces

- Mass storage (USB/SD)
- Ethernet/PROFINET (also via RT functions)
- SNMP and Transfer

Activate/Deactivate applications

- All Applications can be deactivated
- EDGE is deactivated by default

Security Updates

With TIA Portal or SIMATIC Automation Tool

Device security

- User management also for control panel
- Access to control panel instead of operating system GUI

Get Started





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SIMATIC HMI Template Suite

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www.siemens.com/hmi-template-suite

SIMATIC HMI Template Suite – The TIA Portal library for good HMI design

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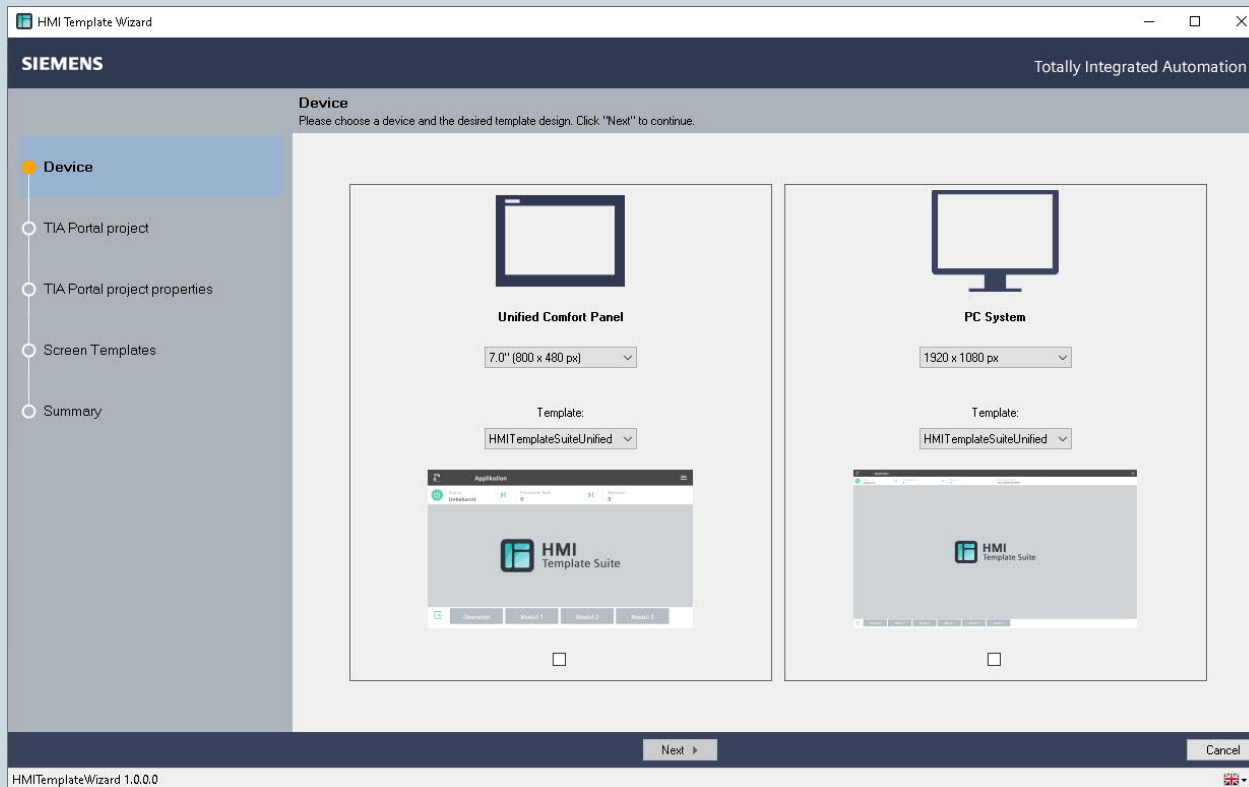


Ready to use screen
templates for WinCC Unified
and Unified Comfort Panels

Available for all common
resolutions from 7" - 22"

Available free of charge in
Industry Online Support

SIMATIC HMI Template Wizard – The quickest way to your first project with WinCC Unified



Wizard based configuration of
the navigation structure

Activate the screens and
elements you want to use

The device will be generated
fully automatically

Siemens - C:\Users\siemens\Documents\Automation\MyProject\MyProject

Project Edit View Insert Online Options Tools Window Help

Totally Integrated Automation PORTAL

Project tree MyProject ▶ Devices & networks

Devices Plant objects

Topology view Network view Device view

Network Connections HMI connection

Hardware catalog Online tools Tasks Libraries Add-ins

Reference projects

Details view

Properties Info Diagnostics

Portal view Overview Devices & ne...

The library was closed.

ENG 12:55 PM
DE 4/3/2020

SIMATIC HMI Template Suite Download



The complete application example contains:

- Documentation
- Wizard (Tool)
- TIA Portal Library
- TIA Portal Example Project

Download under entry ID **91174767** or from Industry Online Support via the following link:

<https://support.industry.siemens.com/cs/ww/en/view/91174767>

SIMATIC WinCC Unified System – Application Examples



Type	German	English
TIA Portal Add-In Data 2 Unified	SIOS Download	SIOS Download
WinCC Unified Tag Simulator	SIOS Download	SIOS Download
WinCC Unified Demo projects	SIOS Download	SIOS Download
TIA Portal Library HMI Template Suite	SIOS Download	SIOS Download
Getting Started Edge @ Unified Comfort Panel	Soon	Soon
From Comfort to Unified Comfort Guideline	Soon	Soon

WinCC Unified Community – Join us now for free!



Learn everything you need to get
started with the WinCC Unified System



Discuss with other WinCC Unified
users or prospects online



More than 90 minutes of videos
in short on-demand clips

Join us now for free on
www.siemens.com/wincc-unified-system

Further Information



SIMATIC HMI Unified Comfort Panels – Choose accessories upon demand

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Available Q2/2020

Mounting accessories

Mounting frame for
Comfort Panel compatibility



Input tools

- Touch pen incl. holder
- USB mouse and keyboard



Protective films

All display sizes (7 – 22")



Storage Media

- SIMATIC SD-card
- SIMATIC HMI USB flash drive



<https://mall.industry.siemens.com/mall/de/WW/Catalog/Products/10144445?tree=CatalogTree>

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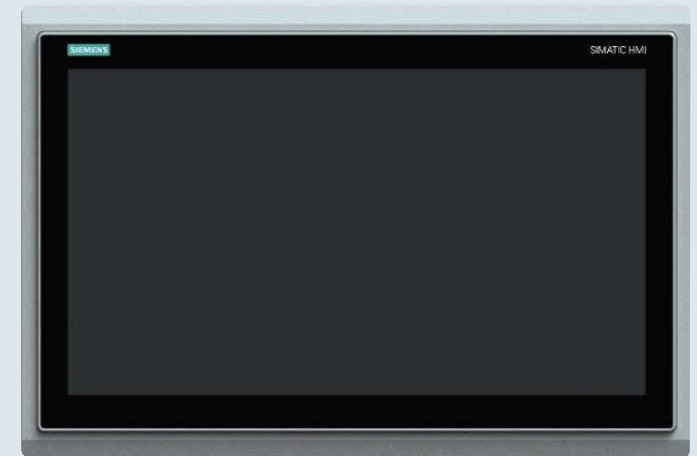
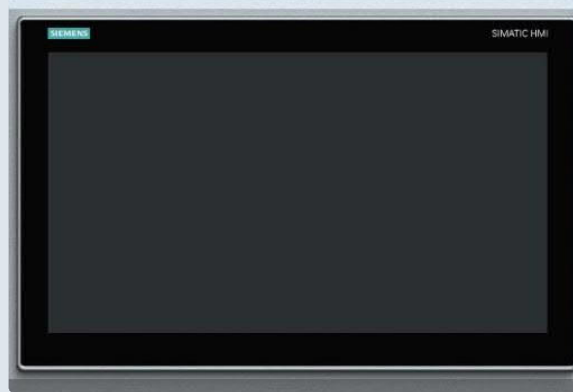
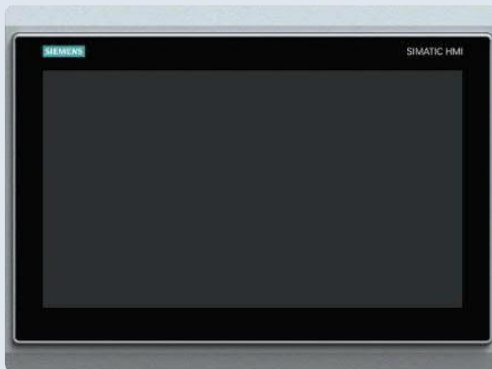
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SIMATIC WinCC Unified System

SIMATIC HMI Unified Comfort Panels – Accessories – Mounting frames

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Available Q2/2020



Available for all devices (MTP1500, MTP1900, MTP2200) that have smaller cut-out
compared to Comfort Panel

SIMATIC HMI Unified Comfort Panels – Starter Kits



Available Q2/2020

Hardware Starter-Kit

- Device
- WinCC Unified V16 Comfort
- 1,5 m Profinet cable
- Memory Card (32 GB)
- Protective film
- Device-Managed Edge license



WinCC Unified IPC Packages



SIMATIC IPC

Available for almost all SIMATIC IPCs that meet the technical requirements of SIMATIC WinCC Unified PC



SIMATIC WinCC Unified PC

WinCC Unified PC Runtime License

- Price discount only with concurrent order of IPC and WinCC Unified software
- Please note the technical requirements of WinCC Unified when selecting the configuration
- Further information regarding the packages can be found here (as soon as available:)
<https://support.industry.siemens.com/cs/de/en/view/99860269>

SITRAIN – Digital Industry Academy



Available Q2/2020

Basic SIMATIC WinCC Unified & Unified Comfort Panels

Description

Learn how to create TIA Portal projects for Unified Comfort Panels and how to use them optimally.

Short title
TIA-UWCCM

SITRAIN personal
3 days classroom training

Advanced SIMATIC WinCC Unified Scripting (JavaScript)

Description

Learn to optimally use JavaScript in SIMATIC WinCC Unified without previous programming knowledge.

Short title
TIA-UWCCJA

SITRAIN access
~3 hours web-based training

Advanced SIMATIC WinCC Unified for PC systems

Description

Learn how to use the functionalities and options especially available for PC Systems with WinCC Unified.

Short title
TIA-UWCCPC

SITRAIN personal
2 days classroom training

www.siemens.com/SITRAIN

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SIMATIC WinCC Unified System

Ordering Information



SIMATIC WinCC Unified V16

License Compatibility Engineering - New Customers



WinCC Unified (TIA Portal) V16				WinCC (TIA Portal) V16		
Engineering System valid for..	Unified Comfort Panels	Unified PC Runtime		Comfort Panels	WinCC RT Advanced	WinCC RT Professional
PC (max.)	✓	✓ (max.)	➡	✓	✓	✓ (max.)
PC (100k)	✓	✓ (100k)	➡	✓	✓	✓ (max.)
PC (10k)	✓	✓ (10k)	➡	✓	✓	✗
Comfort	✓	✗	➡	✓	✗	✗

New customers WinCC Unified:

The license of WinCC Unified (TIA Portal) is also valid for engineering using WinCC (TIA Portal).

SIMATIC WinCC Unified V16

License Compatibility Engineering - Existing customers



WinCC (TIA Portal) V16			
Engineering System valid for...	Comfort Panels	WinCC RT Adv.	WinCC RT Prof.
WinCC Prof. (max)	✓	✓	✓ (max.)
WinCC Prof. (4k)	✓	✓	✓ (4k)
WinCC Prof.(512)	✓	✓	✓ (512)
WinCC Advanced	✓	✓	✗
WinCC Comfort	✓	✗	✗



WinCC Unified (TIA Portal) V16	
Unified Comfort Panels	Unified PC Runtime
✓	✓ (100k)
✓	✓ (10k)
✓	✓ (10k)
✓	✓ (10k)
✓	✗

Existing customers with WinCC (TIA Portal):

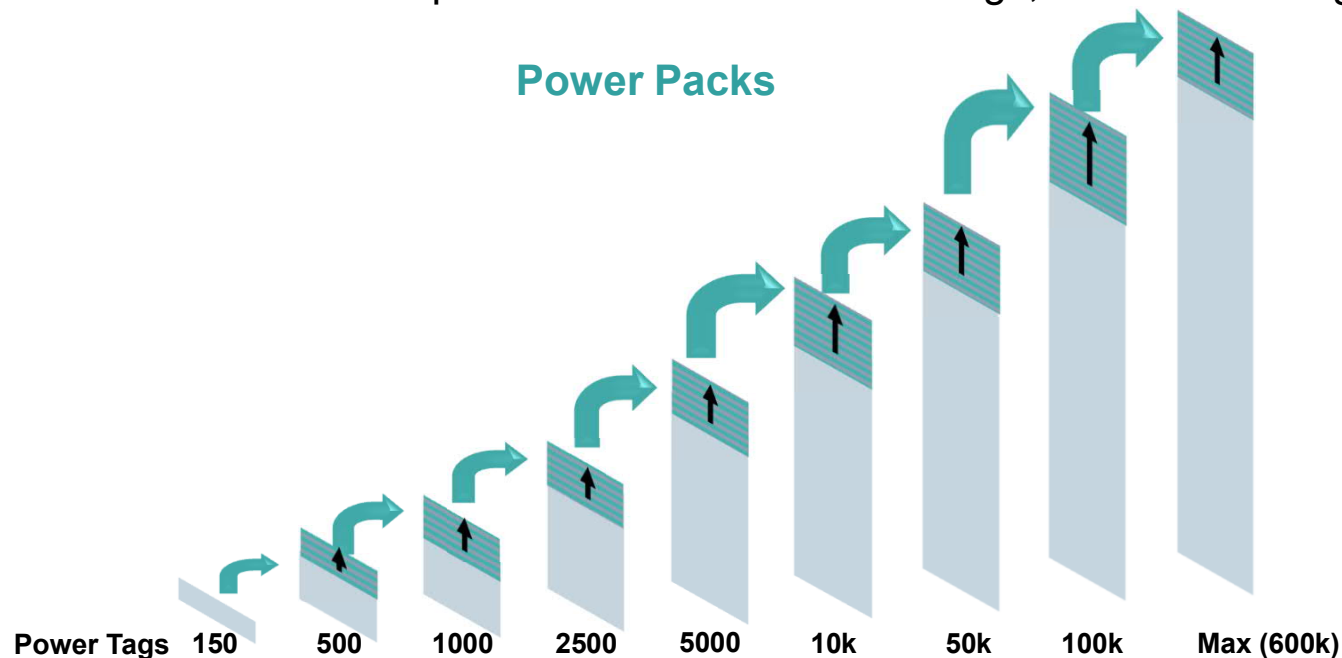
The license of WinCC (TIA Portal) is also valid for engineering using WinCC Unified (TIA Portal).

SIMATIC WinCC Unified V16 - PC Runtime

Licensing concept



WinCC Unified offers Base Packages with different number of Power Tags.
The PowerPacks are used to expand the number of Power Tags, without effecting the overall price.



**Each WinCC Unified PC Runtime includes 2 Clients for local HMI and remote access.
SimaticNET must be licensed separately for more than 10 S7-connections.**

Thank you for your attention!

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