



**SIEMENS**  
*Ingenuity for life*

# SIMATIC WinCC Unified System

Unrestricted © Siemens 2020

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

# 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

SVG **Device independency** Openness Plant Intelligence

Engineering Automation One Engineering **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!



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



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



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



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

# SIMATIC WinCC Unified System V16 – Overview

**SIEMENS**  
*Ingenuity for life*

Platform  
Unified Comfort Panels, PC



Common engineering  
for all platforms

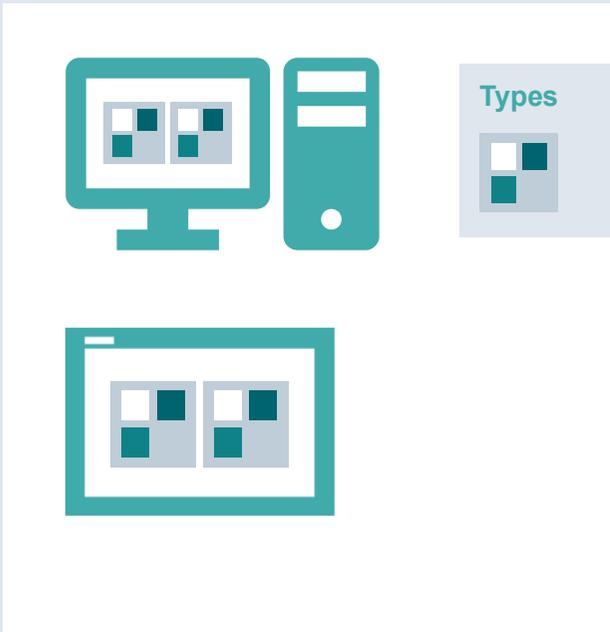


Software  
SIMATIC WinCC Unified  
in TIA Portal V16

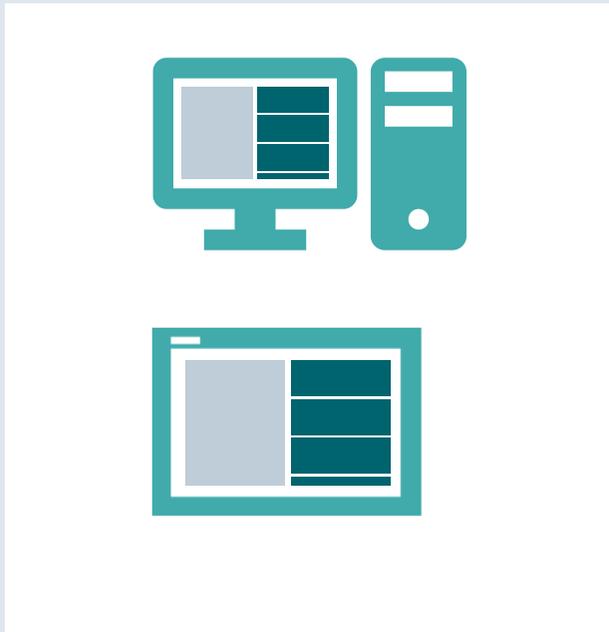


# SIMATIC WinCC Unified – One common HMI platform

**SIEMENS**  
*Ingenuity for life*



**Faceplates**  
Use the same faceplates for Panel- and PC Systems.

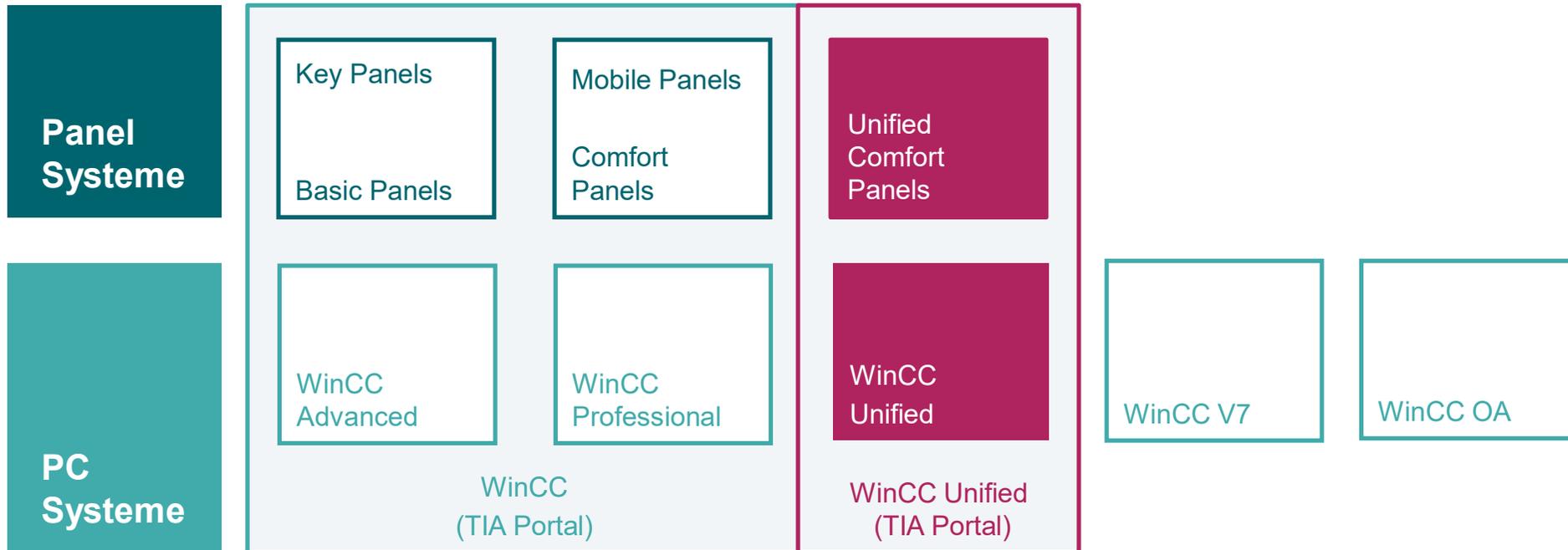


**Screen structure**  
Consistent structuring of screens with picture windows.



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

# HMI & SCADA Portfolio – Including WinCC Unified System



No replacement of current portfolio for the moment. WinCC Unified V16 running in parallel for now.  
In the long term, the HMI & SCADA portfolio in TIA Portal will consistently be based on WinCC Unified.

**SIEMENS**  
*Ingenuity for life*

# SIMATIC WinCC Unified

Unrestricted © Siemens 2020

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



# 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



**SIEMENS**  
*Ingenuity for life*

### 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!



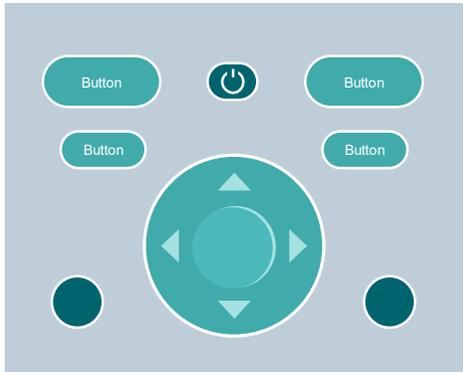
**HTML**      **JavaScript**

**SVG**

**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 {  
    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

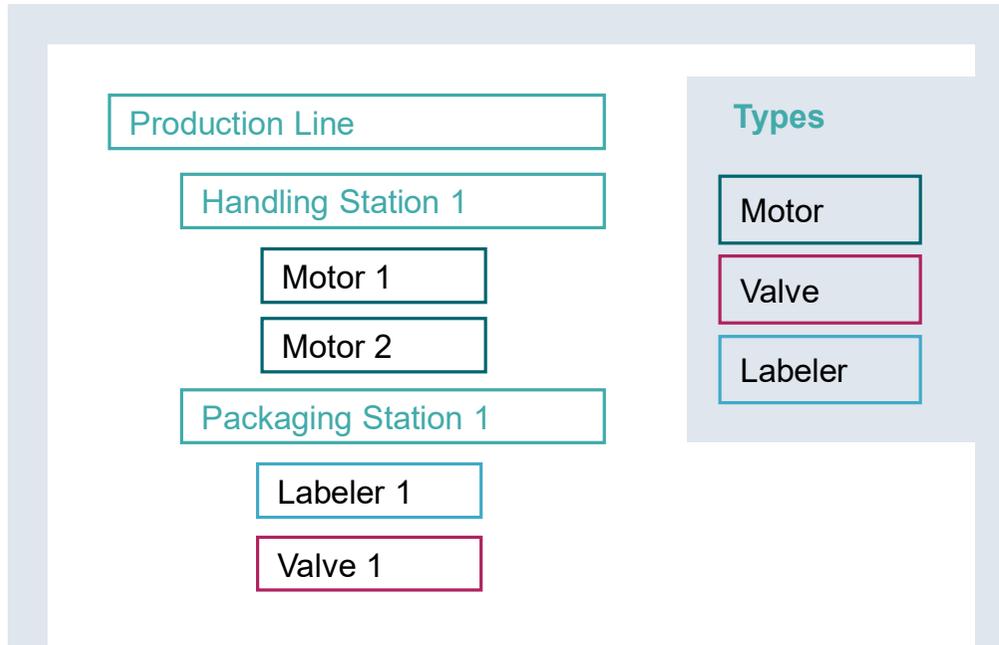
Get access to existing assets or create them automatically from scratch via the Openness API.

## Projects

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

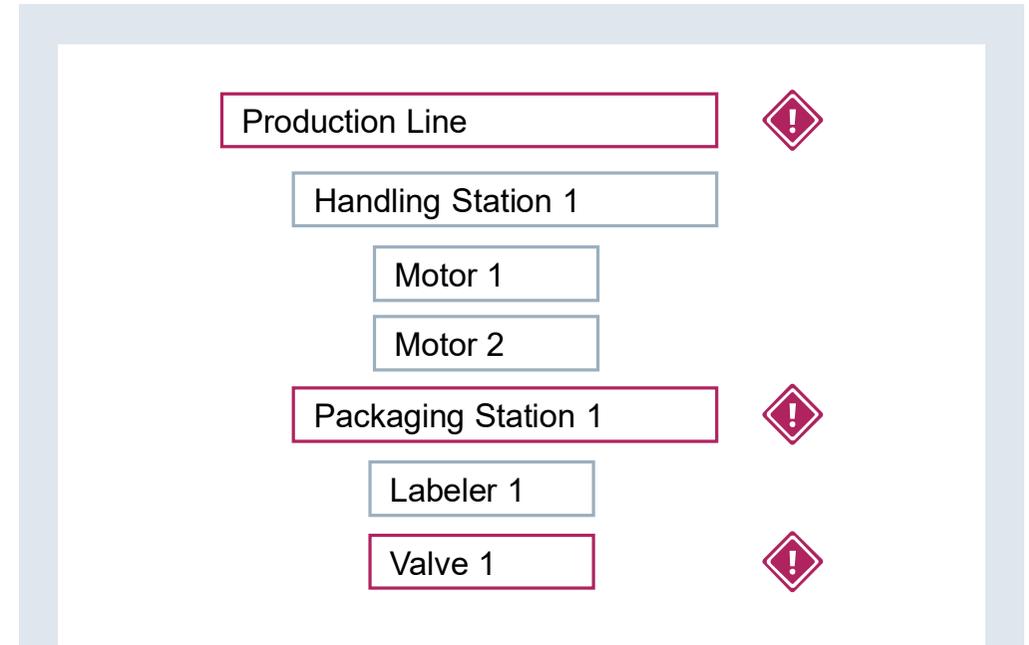
Engineering automation is the power booster for your workflow

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



## Object oriented engineering approach

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

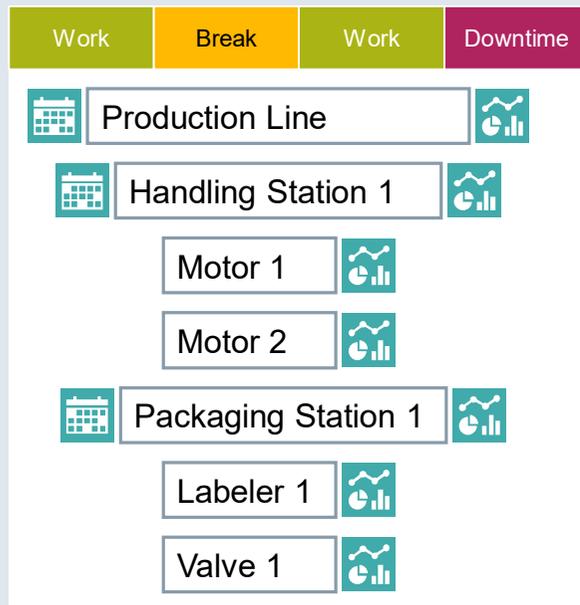


## Hierarchically structured operation

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

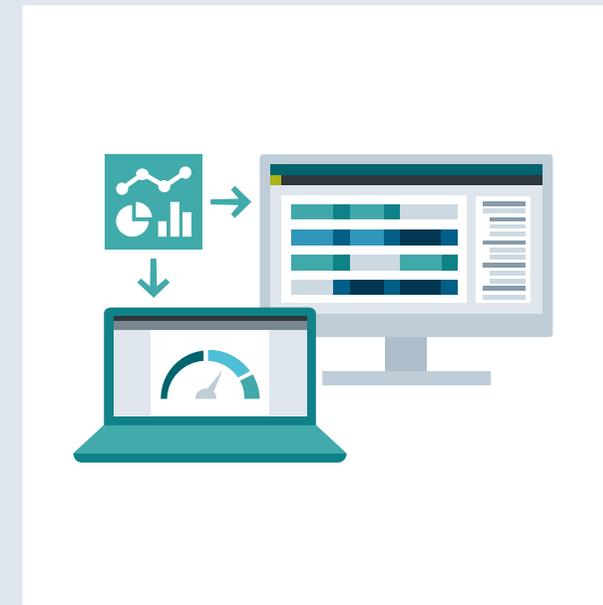
**SIEMENS**  
*Ingenuity for life*



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



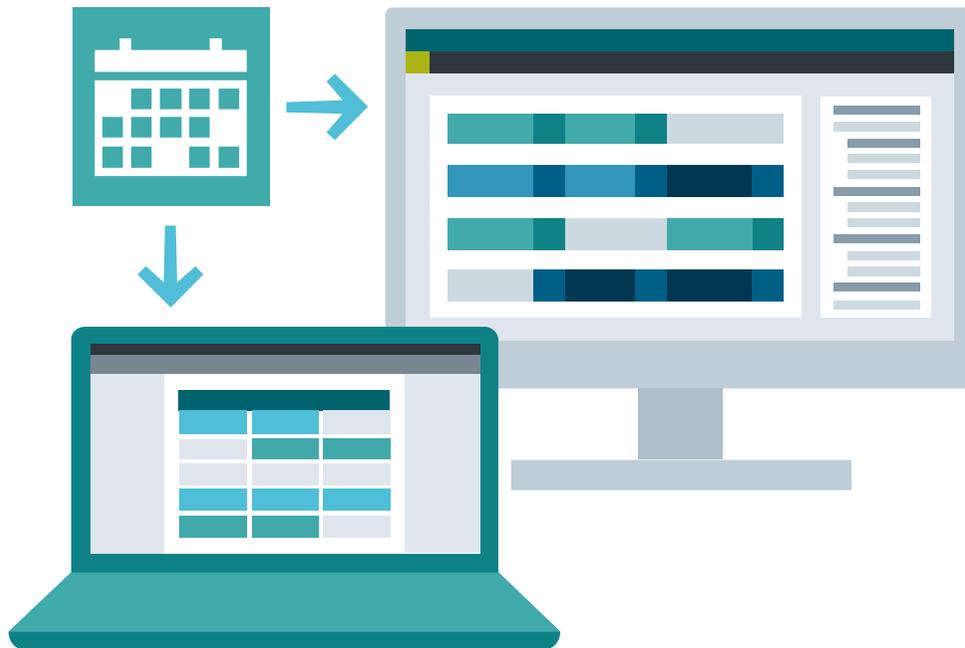
**Calendar**  
Schedule activities for the  
production



**Performance Insight**  
Improving performance by  
calculating individual KPIs

## WinCC Unified – Calendar Option

### Plan your production shifts

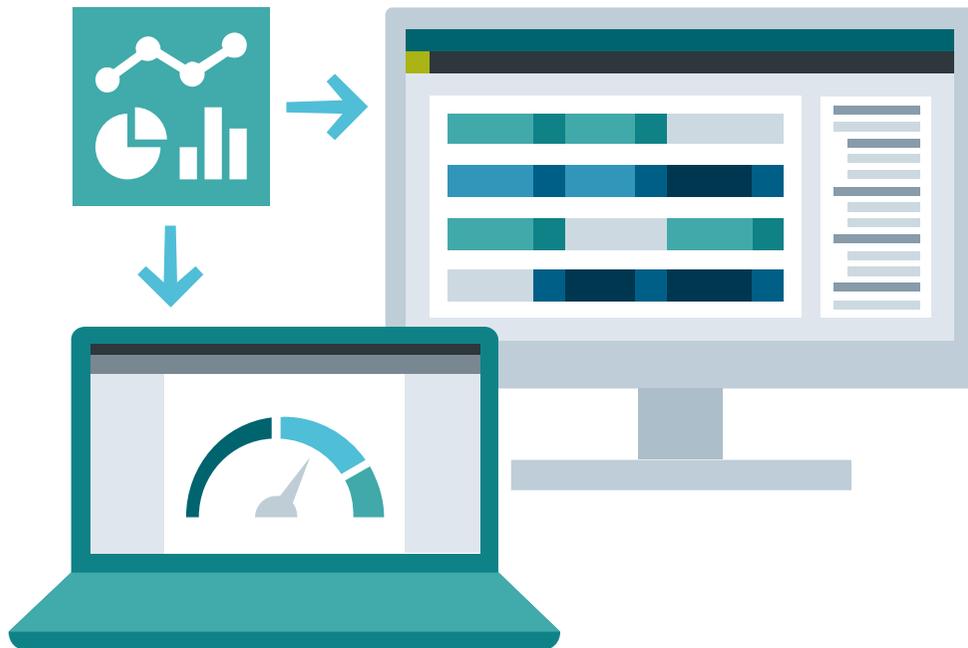


### Schedule activities for the production

- 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

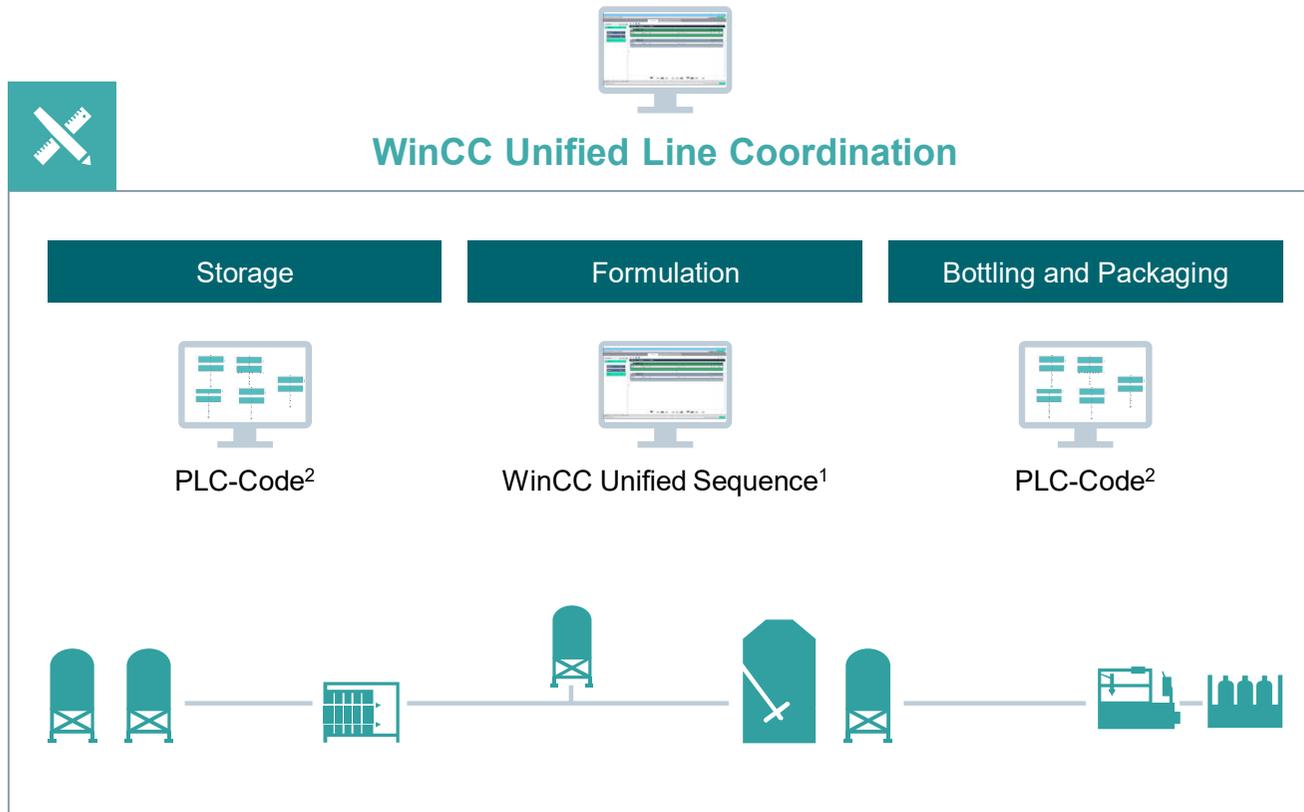


**SIEMENS**  
*Ingenuity for life*

### 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 – Plant Intelligence Options – Sequence and Line Coordination



Comprehensive engineering and line integration of units

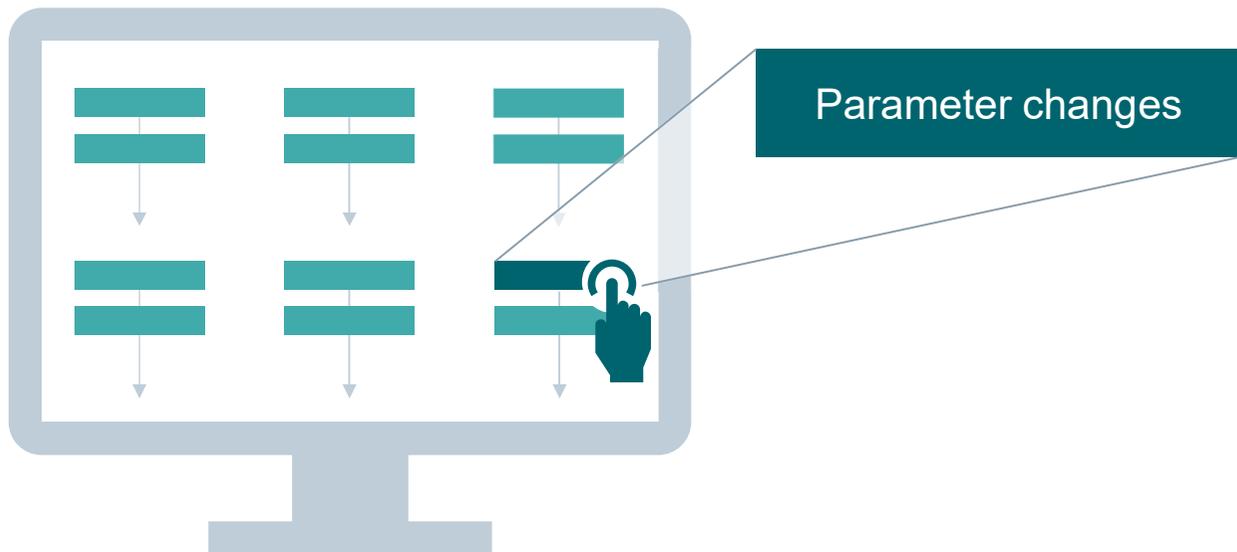
Orchestration of production procedures with WinCC Unified Line Coordination

Fast changeability of procedures in the production process with WinCC Unified Sequence

<sup>1</sup> Sales special release in V16 | <sup>2</sup> Individual PLC code for control and connection of the units to WinCC Unified Line Coordination  
\*Unified PC RT only

# WinCC Unified – Plant Intelligence Options – Sequence

Automation with manual interaction

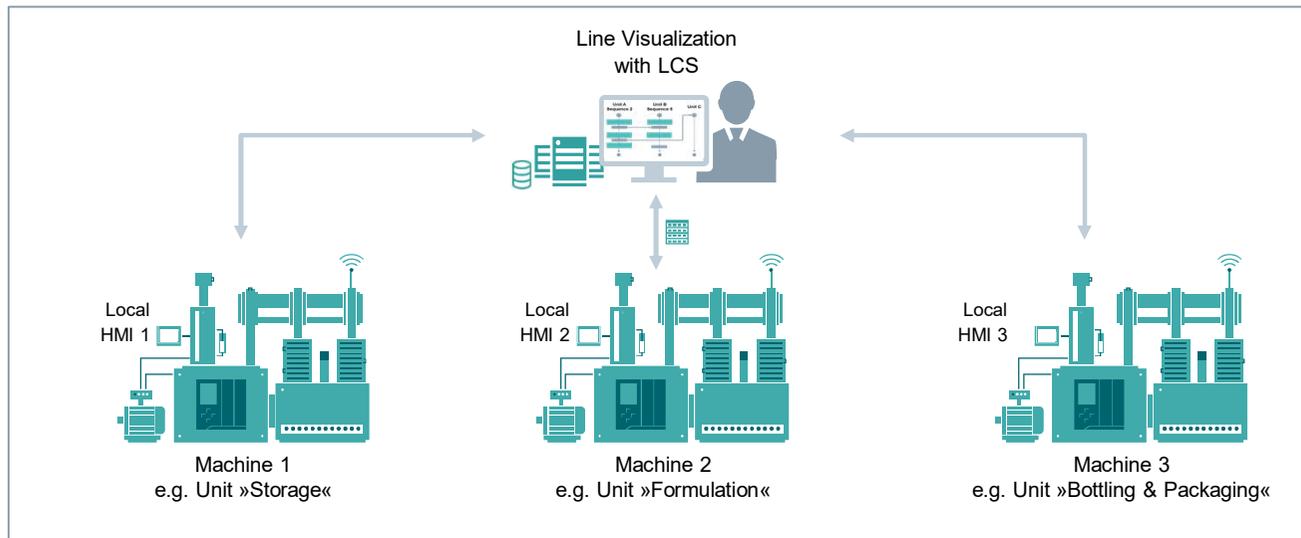
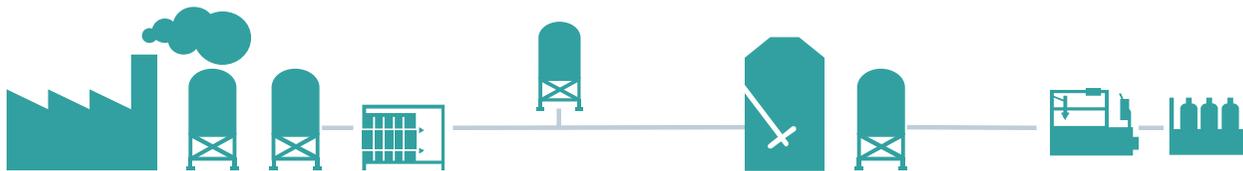


Flexible arrangement of automatic steps within the production process

- Fast and simple changeability of procedures in the production process without program modifications on the PLC
- Clear overview of the manufacturing steps and current status
- Scalability from small to large plants
- Based on standardized operations according to ISA-88

# WinCC Unified – Plant Intelligence Options – Line Coordination

## Orchestration of production procedures



Efficient engineering due to mapping ISA-88 plant model within Technological Hierarchy

Overall definition of complete procedure and recipe at line level

Transparent monitoring of production procedures in different units

# WinCC Unified – Collaboration – Making collaboration more flexible

## Exchange process data between WinCC Unified systems

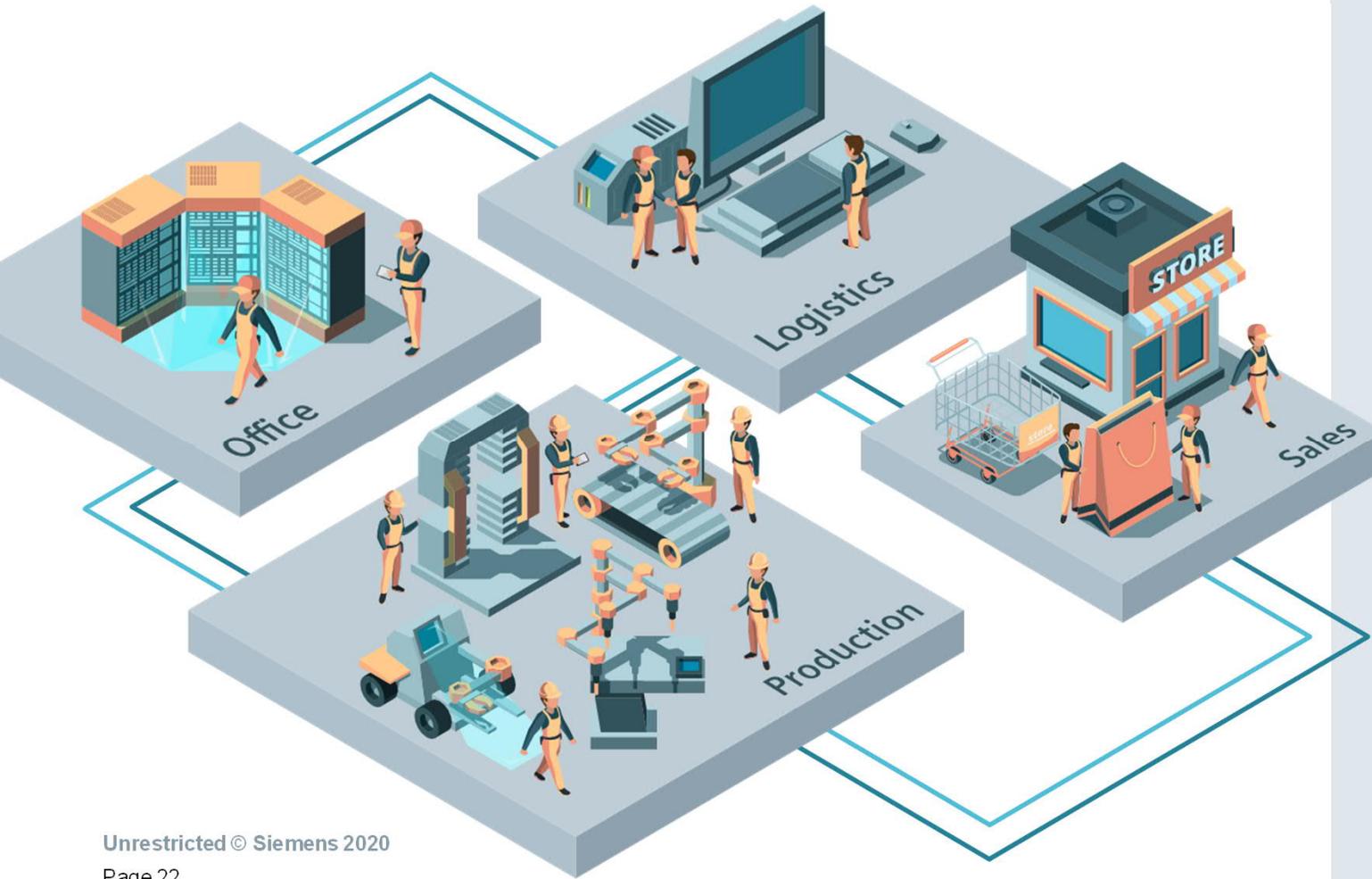
- Every machine can provide different types of data to other WinCC Unified systems
- Share screens, tags, archives and alarms
- Access to data of other Unified platforms during Runtime



## 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



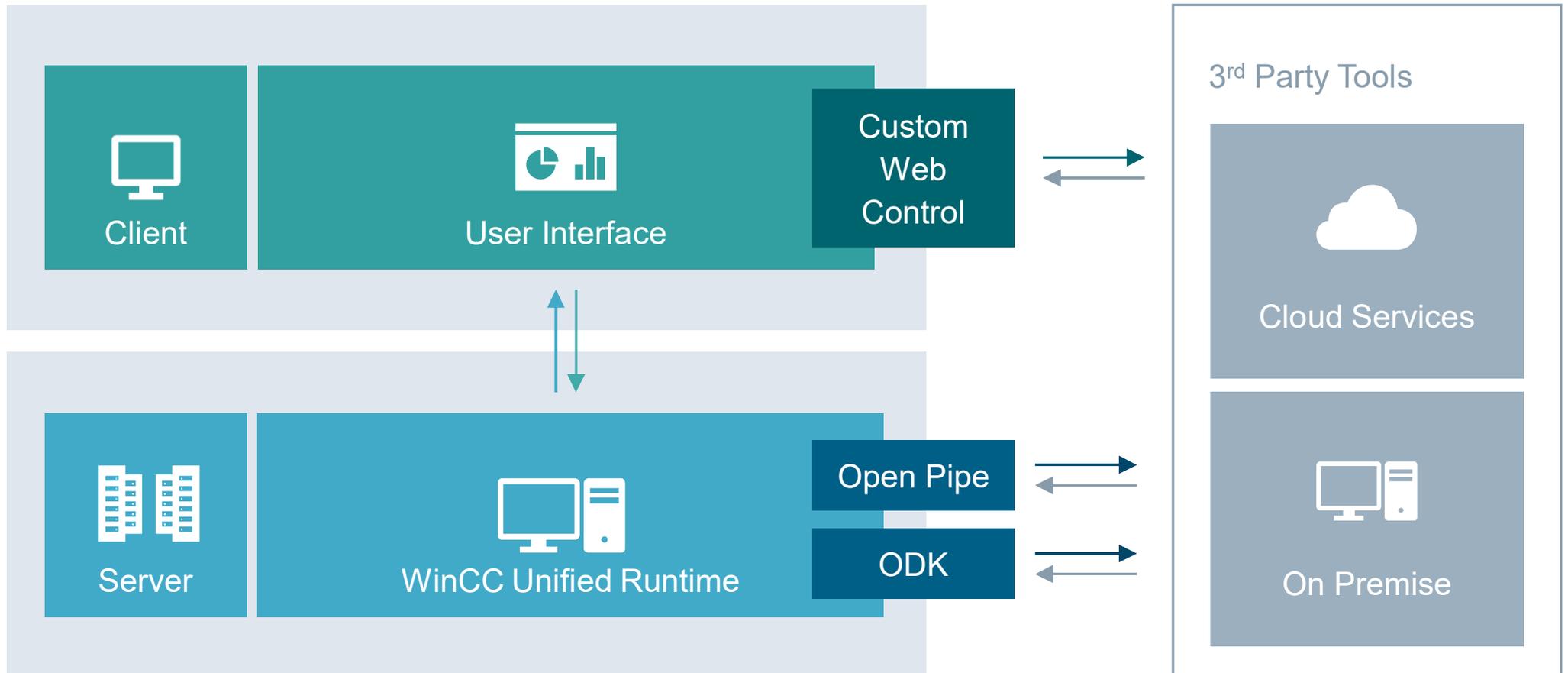
**SIEMENS**  
*Ingenuity for life*

Different departments use  
different software system

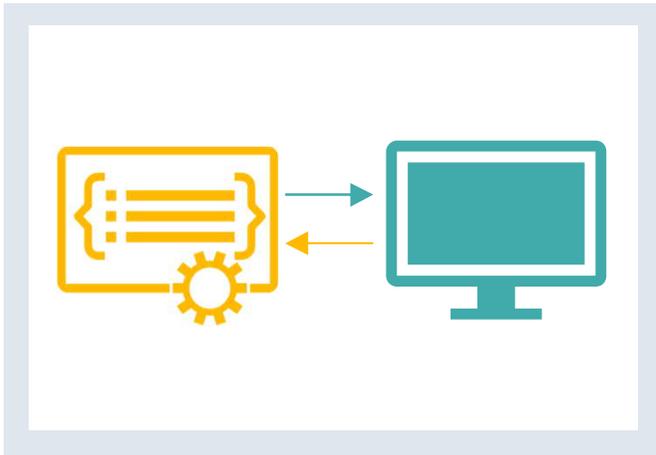
Digitalization requires  
seamless data flow

Open interfaces are required  
for all systems

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



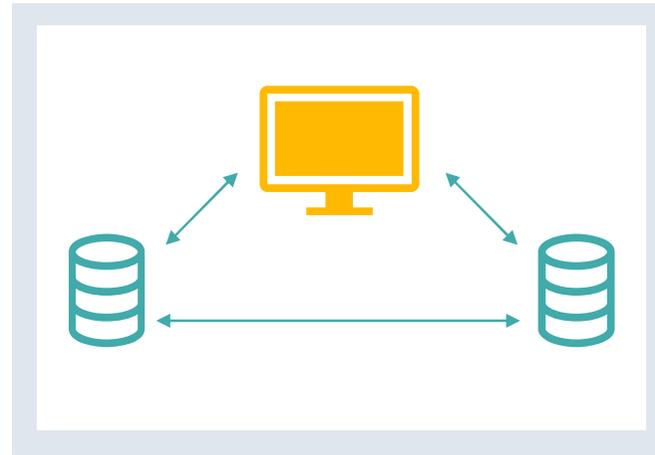
# WinCC Unified – Integration platform – Examples



## 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)

# Get Started

---



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

**SIEMENS**  
*Ingenuity for life*



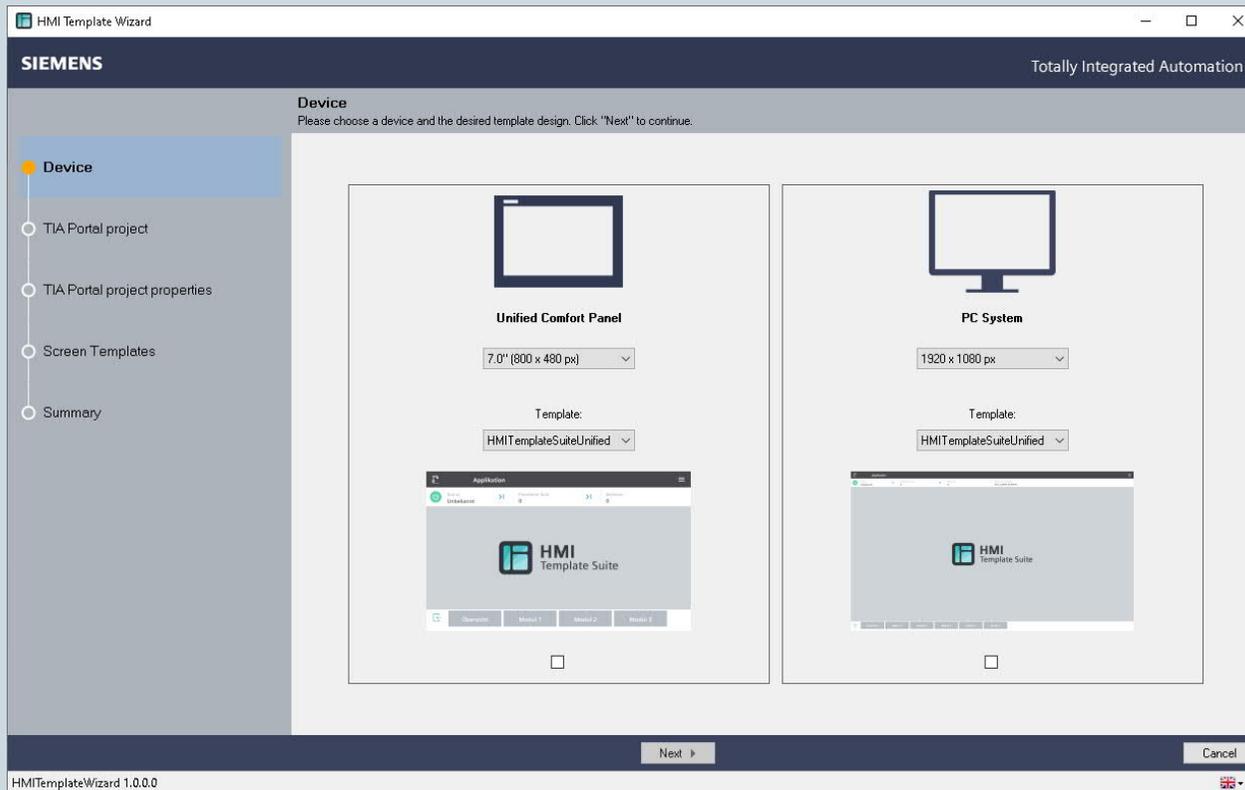
Ready to use screen  
templates for WinCC Unified  
and Unified Comfort Panels

Available for all common  
resolutions from 7" - 22"

Available free of charge in  
Industry Online Support

# SIMATIC HMI Template Wizard

## Live Demo



Wizard based configuration of the navigation structure

Activate the screens and elements you want to use

The device will be generated fully automatically

# SIMATIC HMI Template Suite Download

**SIEMENS**  
*Ingenuity for life*



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>

# Ordering Information

---



# SIMATIC WinCC Unified – Promotion Packages

Available until 31/12/2020

## WinCC Unified PC (1k) RT

- WinCC Unified PC (1k) RT
- Parameter Control (PC)
- Logging Tags (100)
- Report Execution

**6AV2155-2ES01-6AL0**

## WinCC Unified PC (10k) RT

- WinCC Unified PC (10k) RT
- Parameter Control (PC)
- Logging Tags (1000)
- Report Execution

**6AV2155-2FS01-6AL0**

## WinCC Unified PC (50k) RT

- WinCC Unified PC (50k) RT
- Parameter Control (PC)
- Logging Tags (1000)
- Report Execution
- Database Option
- Client Operate (1)

**6AV2155-1GS01-6AL0**

**Packages only available via Online Software Delivery (OSD)**

~ 30%  
discount

# SIMATIC WinCC Unified – Promotion Packages Plant Intelligence Options

**SIEMENS**  
*Ingenuity for life*

Available until 31/12/2020

## WinCC Unified Plant Intelligence Optionen

- Calendar Option (Basis)
- Performance Insight Option (Basis)
- Logging Tags (100)

**6AV2155-0XP01-6AL0**

**Packages only available via Online Software Delivery (OSD)**

**~ 30%  
discount**

# SIMATIC WinCC Unified V16 Engineering – Ordering information



WinCC Unified Engineering	Package (DVD)	Online Software Delivery (OSD)
WinCC Unified Comfort ES	6AV2151-0XB01-6AA5	6AV2151-0XB01-6LA5
WinCC Unified PC (10k) ES	6AV2153-2FB01-6AA5	6AV2153-2FB01-6LA5
WinCC Unified PC (100k) ES	6AV2153-2GB01-6AA5	6AV2153-2GB01-6LA5
WinCC Unified PC (Max) ES	6AV2153-0XB01-6AA5	6AV2153-0XB01-6LA5
WinCC Unified PC (1k) ES Trial	6AV2153-2EB01-6AA7	Download via SIOS

**The complete list for WinCC Unified  
(Engineering and Runtime) can be found in the product announcement here**  
<https://support.industry.siemens.com/cs/ww/en/view/109771724>

## WinCC Unified V16 – IPC Packages



Package	Order Number
WinCC Unified V16 PC RT 150, Package	6AV2155-3DB01-6AA0
WinCC Unified V16 PC RT 500, Package	6AV2155-1EB01-6AA0
WinCC Unified V16 PC RT 1k, Package	6AV2155-2EB01-6AA0
WinCC Unified V16 PC RT 2.5k, Package	6AV2155-2MB01-6AA0
WinCC Unified V16 PC RT 5k, Package	6AV2155-1FB01-6AA0
WinCC Unified V16 PC RT 10k, Package	6AV2155-2FB01-6AA0
WinCC Unified V16 PC RT 50k, Package	6AV2155-1GB01-6AA0

Further information: <https://support.industry.siemens.com/cs/de/en/view/99860269>

Thank you for your attention!

**SIEMENS**  
*Ingenuity for life*



**Mark Karalapillai**

Product Manager HMI/SCADA

DI FA HMI

[mark.karalapillai@siemens.com](mailto:mark.karalapillai@siemens.com)

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.

All product designations, product names, etc. may contain trademarks or other rights of Siemens AG, its affiliated companies or third parties. Their unauthorized use may infringe the rights of the respective owner.

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