

SIMATIC WinCC Unified System

Welkom bij de online workshop

WinCC Unified System



Deze online workshop wordt opgenomen ●

Houd uw microfoon gedurende de presentatie gedempt 

Vragen tijdens de presentatie via chat (voor eenieder zichtbaar)

Agenda

- 1 Presentatie WinCC Unified & thema's
- 2 Keuze op thema's
- 3 Live demonstratie van gekozen thema's
- 4 Roadmap V17
- 5 Presentatie Sitrain
- 6 Verdere informatie
- 7 Afsluiting

WinCC Unified



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.

SIMATIC WinCC Unified System V16 – Overview



Platform

Unified Comfort Panels, PC



Common engineering
for all platforms



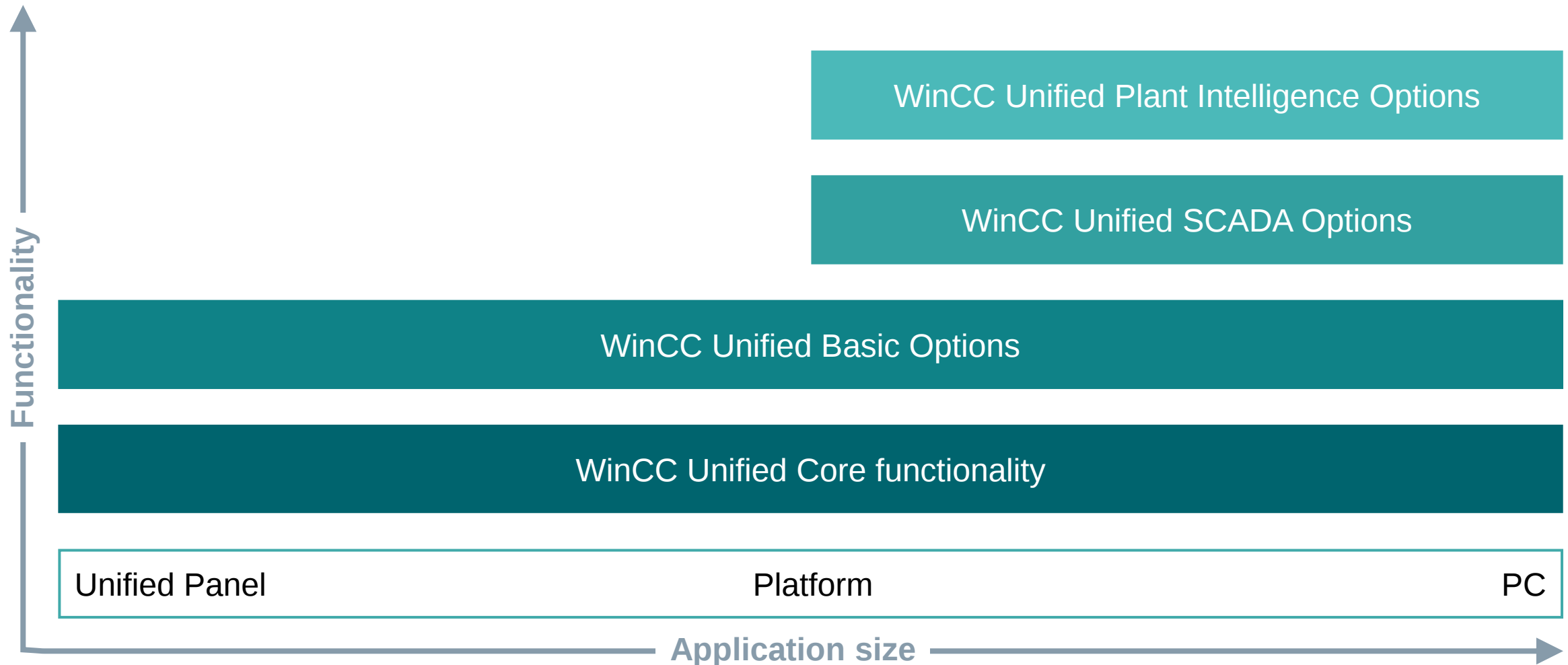
Software

SIMATIC WinCC Unified
in TIA Portal V16



Scalable from Panel to SCADA solution

Seamless functionality and usability



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 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



WinCC Unified V16

Core functionality



Core functionality	Description	Unified Comfort Panels	Unified PC Runtime
User Interface	Scalable for all devices	✓	✓
Connectivity	Connecting automation and IT via standard interfaces	✓	✓
Alarming	Know what's happening at your facility	✓	✓
Reporting	Reporting functionality (based on Microsoft Excel)	✂	✓ ¹
Scripting	Extensive scripting possibilities for Runtime	✓	✓
Openness Engineering	Shorten Time to Market using automated engineering	✓	✓
Openness Runtime	Expand runtime functionality and serve as integration platform	✓	✓
Technological Hierarchy	Modular and standardized machine and plant concepts	✂	✓
User Administration	Local user management and access control	✓	✓

¹ Automated reports optional

Available
 Available (limited)
 In work
 Not available

WinCC Unified V16

Basic Options

Basic Options	Description	Unified Comfort Panels	Unified PC Runtime
File-based Logging	Local data logging for small to medium applications	✓ (Logging Tags included)	✓ (Logging Tags optional)
Parameter Control	Consistent handling and operation of machine or production parameters	✓ (included)	✓
Collaboration	Establish distributed configurations	✗	✓
Clients	Flexible web-based, remote Monitoring and Operation	✗	✓
Audit	Documentation and validation according to legal requirements e.g., 21 CFR Part 11	✗	✗

 Available
  Available (limited)
  In work
  Not available

WinCC Unified V16

SCADA Options



SCADA Options	Description	Unified Comfort Panels	Unified PC Runtime
Database Option	Performant, large-scale and long-term managed logging	✗	✓
Redundancy	Increased availability	✗	✂
Central Logging	Central long-term database logging	✗	✂

✓ Available ✓ Available (limited) ✂ In work ✗ Not available

WinCC Unified V16

Plant Intelligence Options



Plant Intelligence Options ¹	Description	Unified Comfort Panels	Unified PC Runtime
Calendar	Calendar-based administration of events and schedules	✗	✓
Performance Insight	Visualization and analysis of asset performance with KPIs and time/state model	✗	✓

Plant Intelligence Options ¹	Description	Unified Comfort Panels	Unified PC Runtime
Line Coordination	Coordination and synchronization of machines/units via recipe-controlled procedures	✗	✓
Sequence ²	Flexible arrangement of automatic steps within the production process including manual interaction	✗	✓

¹ Technologischer Hierarchie is mandatory

² No broad market for V16 (Sales special release by Product Management)

 Available
  Available (limited)
  In work
  Not available

WinCC Unified V16

TIA Portal Options



TIA Portal Options	Description	Unified Comfort Panels	Unified PC Runtime
User Management Component	Central user management		
PLCSIM (Advanced)	Comprehensive simulation of the controller functionality including interaction with virtual plant and machine models		
Multiuser Engineering	Coordinated working within a team. Centrally track changes with user comments and versions		
TIA Portal Cloud Connector	Boost the flexibility through engineering in your private cloud		
Teamcenter Gateway	Plant-wide storage of TIA Portal projects in Teamcenter		
Visualization Architect SiVArc	Standardized HMI visualizations efficiently through automatic generation		
ProDiag	Efficient diagnosis of process errors to reduce downtimes		
Energy Suite and S7-EE Monitor	Energy transparency in production		

Available
 Available (limited)
 In work
 Not available

WinCC Unified V16

WinCC AddOns



WinCC Add-ons	Description	Unified Comfort Panels	Unified PC Runtime ¹
PM-QUALITY	Archiving system for the job- or batch-related acquisition of process and production data		
PM-CONTROL	Recipe system for the comfortable authoring and management of recipes (product-specific set points)		
PM-MAINT	Maintenance planning tool designed for the use in preventive maintenance		
PM-ANALYZE	Archive Localization of error sources or weak points, reduction of downtimes and maintenance times, or the timely recognition of wear effects		
PM-OPEN HOST/S	Flexible communications solutions between the automation level and SAP ERP		
PM-OPEN MINDCONNECT	View analytical and quality reports via MindSphere		

Please note the separate release info of PM-AddOns provided by CoC Mannheim.

Available
 Available (limited)
 In work
 Not available

¹Release of the PM-Agent to connect the PM-AddOns to WinCC Unified PC Runtime. Controls are not integrated in RT but run as separate program (either in parallel or using a separate PC station).

WinCC Unified V16

Overview Controls

Unified Comfort Panels

Unified PC Runtime

✓	Screen Window	✓
✓	Faceplate Container	✓
✓	Web Control	✓
✓	Alarm Control	✓
✓	Trend Control	✓
✂	Process Control	✓
✂	Trend Companion	✓
✂	Function Trend Control	✓
✂	Media Player	✓

✓ Available ✂ In work

WinCC Unified System Thema's



1 Faceplates

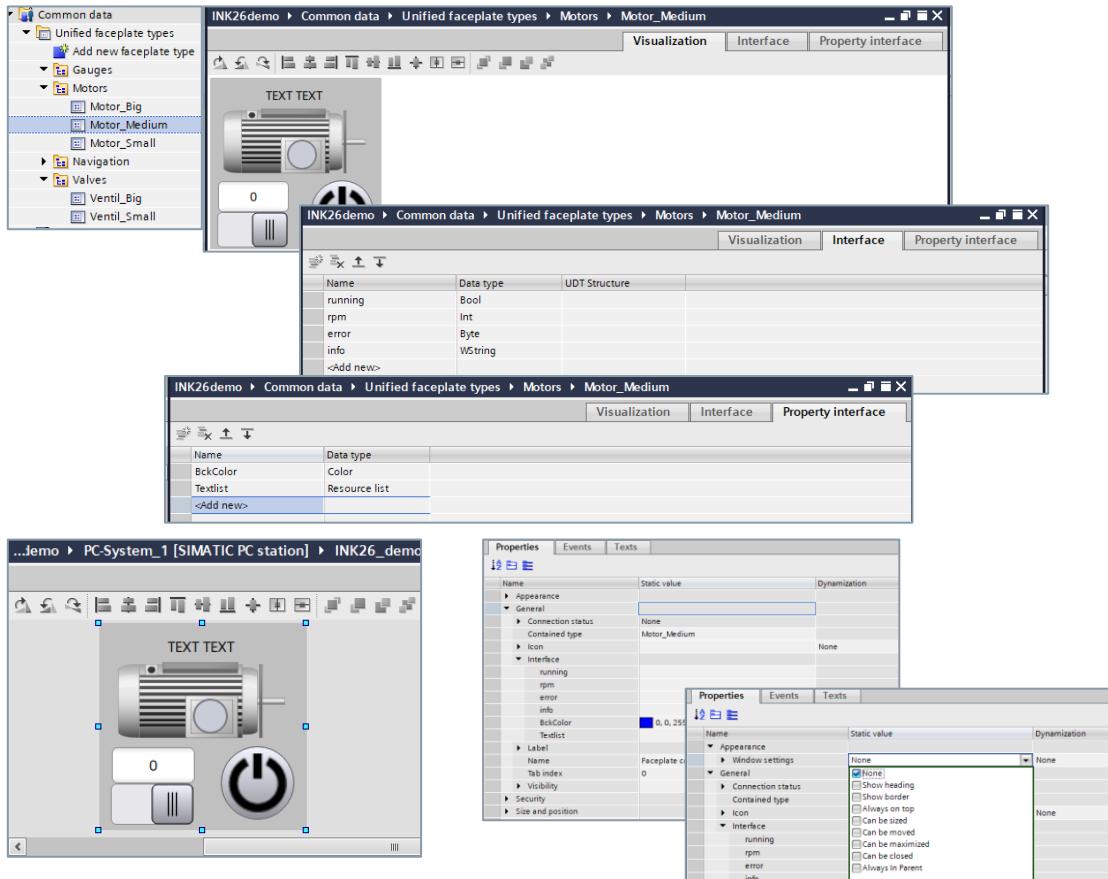
2 Alarm Control

3 Custom Control

4 Scripting

5 Openness

1. Faceplates Engineering



Group of screen objects

Define Faceplates (Common data)

- Interfaces – project independent (simple tag types, PLC UDT types)
- Property interface (colors, text resource lists)
- Visualization for object and operation window, engineering like a screen (without advanced controls) including dynamization via Scripting

Use Faceplates in screens

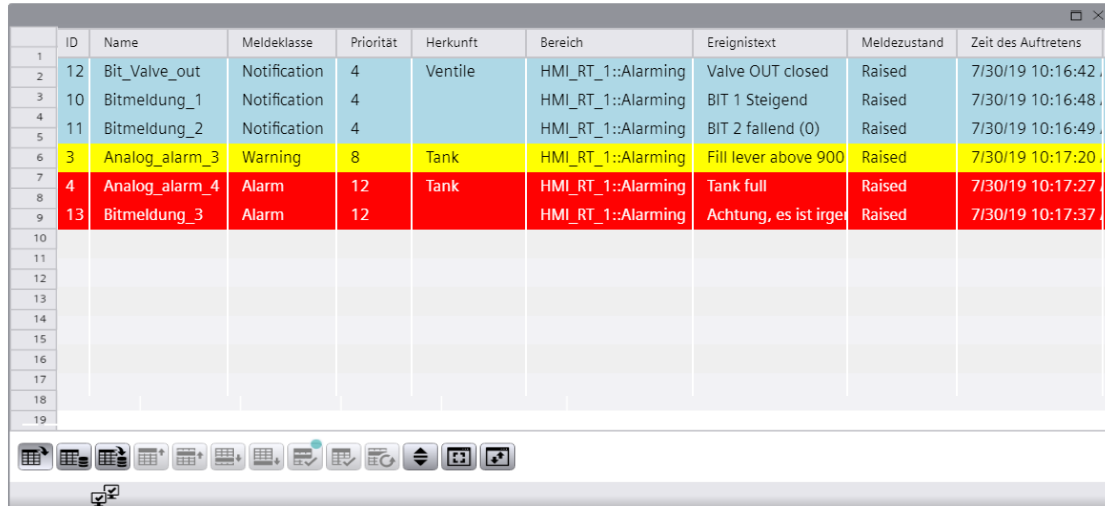
- Drag and Drop
- Assign interface and properties

2. Alarm Control

Complete overview of all kind of alarms

Unified Comfort Panel ✓

PC ✓



	ID	Name	Meldeklasse	Priorität	Herkunft	Bereich	Ereignistext	Meldezustand	Zeit des Auftretens
1									
2	12	Bit_Valve_out	Notification	4	Ventile	HMI_RT_1::Alarming	Valve OUT closed	Raised	7/30/19 10:16:42
3	10	Bitmeldung_1	Notification	4		HMI_RT_1::Alarming	BIT 1 Steigend	Raised	7/30/19 10:16:48
4	11	Bitmeldung_2	Notification	4		HMI_RT_1::Alarming	BIT 2 fallend (0)	Raised	7/30/19 10:16:49
5									
6	3	Analog_alarm_3	Warning	8	Tank	HMI_RT_1::Alarming	Fill lever above 900	Raised	7/30/19 10:17:20
7	4	Analog_alarm_4	Alarm	12	Tank	HMI_RT_1::Alarming	Tank full	Raised	7/30/19 10:17:27
8	13	Bitmeldung_3	Alarm	12		HMI_RT_1::Alarming	Achtung, es ist irge	Raised	7/30/19 10:17:37
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									

Know what's happening at your facility depending on your personal demand (operator, supervisor, maintenance, ...). Multilingual alarm view to support commissioning phase and international operators.

Free configurable alarm view
e.g., column order, toolbar buttons

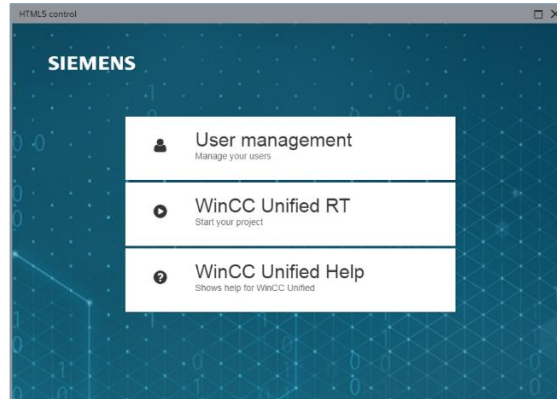
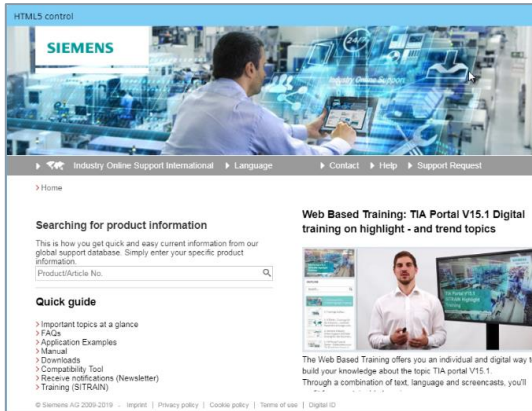
Select alarms according to production unit or user demand e.g., plant unit in technological hierarchy, maintenance

Alarm control user interface for e.g., select time-range, sort, filter, print, hide and lock, acknowledgement

3. Custom Control Web Control to integrate standard web pages

Unified Comfort Panel ✓

PC ✓



Integration of **secured web pages** (hosted by https-servers), depending on security restrictions of the selected web page e.g. Siemens Industry Online Support

Direct integration of **web-based tools** e.g. User Administration web page for PC systems

Integrate any HTML5-based context e.g. customer web site or pdf documents¹

¹ Unified Comfort Panels: via external pdf viewer

4. Scripting (JavaScript)

Extensive scripting possibilities for Runtime

Unified Comfort Panel ✓

PC ✓

```
1 function Button_1_OnTapped(item, x, y, modifiers, trigger) {  
2     let myDate = new Date(); //create a Date object  
3     let strTime, strDate, tagVal, strToWrite;  
4     strDate = myDate.toLocaleDateString(); //get Local date to script internal tag  
5     strTime = myDate.toLocaleTimeString(); //get Local time to script internal tag  
6     let tag1 = Tags('AnimationTag');  
7     let tagValue1 = tag1.Read(); //read the value of tag AnimationTag  
8     //Build the string to be written into file  
9     strToWrite = strDate + " " + strTime + ": TagValue = " + tagValue1 + "\r\n";  
10  
11     //write the entry to the file  
12     //in case the folder does not exist, an error will occur,  
13     //if the file does not exist, it will be created  
14     HMIRuntime.FileSystem.AppendFile('D:\\MyFiles\\textfile.txt', strToWrite, 'utf8').then(  
15         function() {  
16             HMIRuntime.Trace('Write file finished successfully');  
17         }  
18     ).catch(function() {  
19         HMIRuntime.Trace('Error writing File');  
20     });  
21 }
```

Efficient scripting for custom solutions with direct access to Unified runtime objects (tags, logging tags, alarms, screen objects, technological hierarchy)

State-of-the-art and well-known programming language **JavaScript** (local and global scripts)

Local scripts for e.g., screen dynamics, events and scheduled tasks. Support of global script functions

Direct access to WinCC Unified JavaScript object model e.g., access to file-system or databases

4. Scripting

Runtime Scripting (JavaScript) – Highlights

Unified Comfort Panel ✓

PC ✓

Integrated Editor Support

- Syntax highlighting and in-code syntax error indicator
- Manual and background syntax check
- IntelliSense support
- Code templates for frequent scripting tasks
- Global defined user specific functions for reuse
- Browsing and picking of tags and archive tags

Scripting support for

- Screen, screen item, both properties and events
- Scheduler
- Script execution time based and event triggered (on tag value change)

4. Scripting Scripting (JavaScript) – Dynamization

Unified Comfort Panel ✓

PC ✓

Name	Static value	Dynamization
Appearance		
Format		
General		
Connection status	None	
Change		Script
Quality code change		None
Graphic		None
Graphic with pressed button		None
Name	Button_1	
Show connection quality		☒ None
Tab index	0	
Text		Script
Change		None
Quality code change		None
Text with pressed button		None
Tooltip		None
Visibility		☒ None
Security		
Size and position		

Events of screens/screen objects

- Capture events (depending on object type)
- Assign scripts

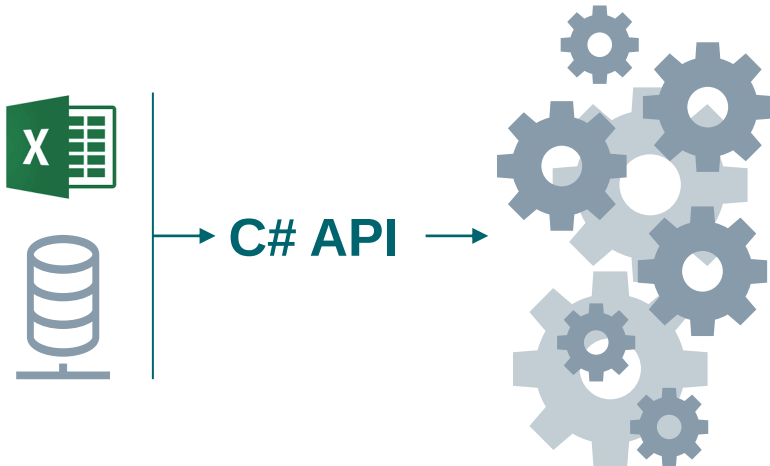
Dynamization of screen items properties

- Almost every attribute can be dynamized
- Even changes of an attribute can be triggered

5. Openness Engineering Shorten Time to Market

Unified Comfort Panel ✓

PC ✓



Generate, alter, validate or analyze WinCC Unified Projects

- Tags
- Alarms/Archives
- Screens
- Technological hierarchy of plant objects

Openness (C#) provides full access to the WinCC Unified object model.

SIEMENS
Ingenuity for life

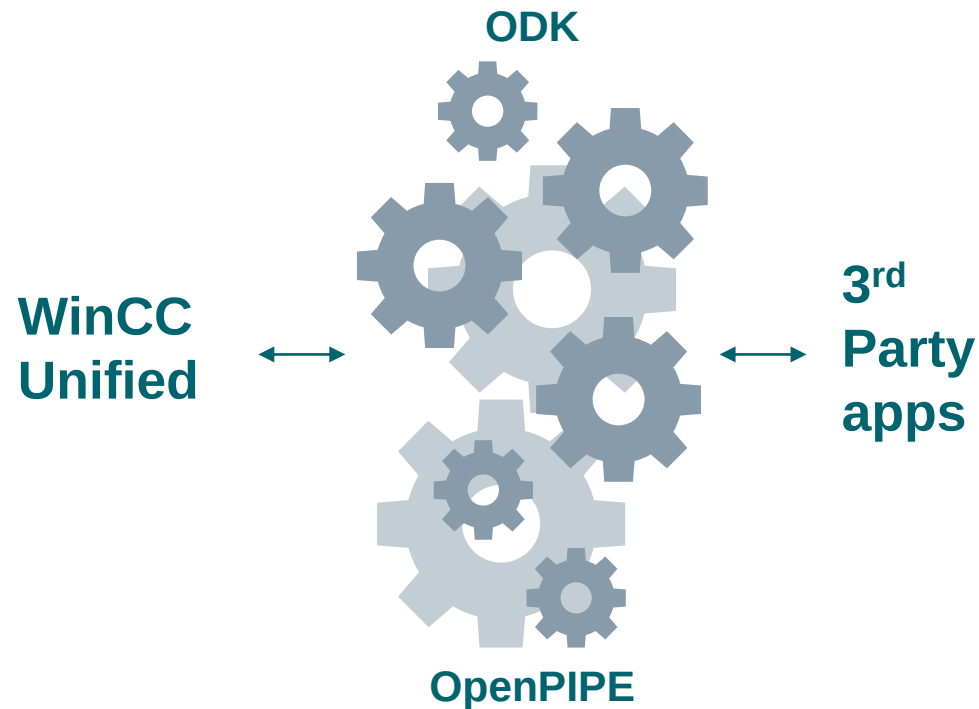
Automated project creation or adaption of existing projects e.g., for OEMs

Project validation e.g., regarding compliance to company standards

Project analysis and statistical evaluation e.g., used tag trigger cycles, search screen items of certain type, missing translations, ...

5. Openness Runtime

Extensive possibilities to expand runtime functionality



Create custom solutions based on an extensive C#/C++ runtime object model – **Open Developer Kit (ODK)**

Integrate 3rd party systems based on a lightweight and language independent interface – **OpenPIPE**

Read/write access via the WinCC Unified object model to runtime data using standard programming languages for customer specific solutions

Demo

Sander van Gemmert en Michael Leonora



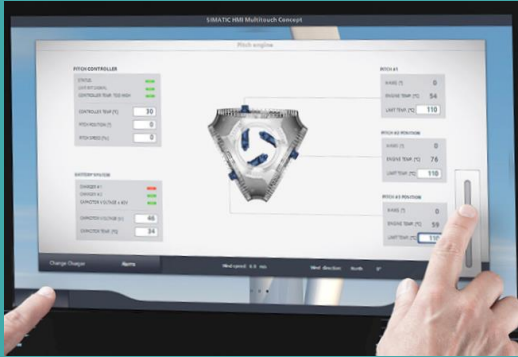
Roadmap



TIA Portal V17 Outlook Unified Comfort Panel + WinCC Unified

Release date V17
March 2021

Current planning status



Two-Hand Operation



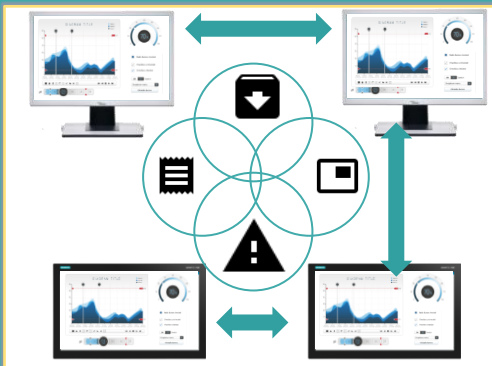
Login via RFID



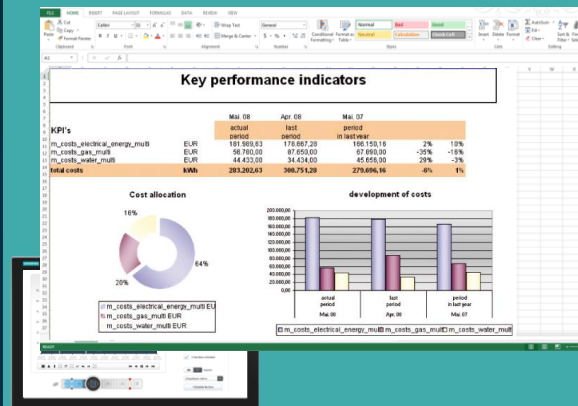
Central User Management



UPS Support



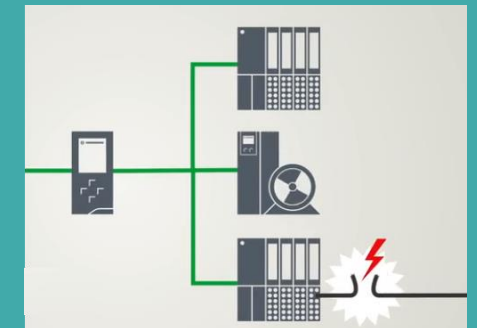
Unified Collaboration



Reporting



Remote Operation (Web)



System Diagnostic

WinCC Unified V17

Main targets

Release date V17
March 2021



Let's finish it!

Close V16 Gaps **with Intelligence**
(Tags, Communication, Functions, ...)

Comfort Panel Gaps

Performance / Quantities



Enlarge to SCADA

Web ES

IT/OT Integration / Openness

Redundancy

Audit

PI Options



Engineering: Reuse & Efficiency

Best Screen Editor

Object Oriented HMI

Faceplates



The WOW things

A real modern UI: Styles / ...

RT collaboration

Unified and Edge Love Story



Customer
Feedback
and
CoCreation

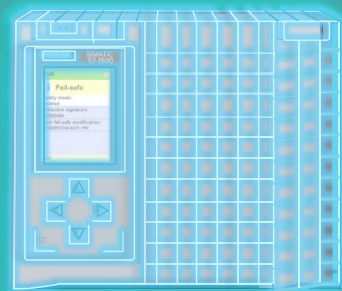
TIA Portal V17 Outlook

SIMATIC WinCC Unified

Current planning status



Faceplates in Library



PLCSIM &
PLCSIM Advanced



New Style for Unified



Audit



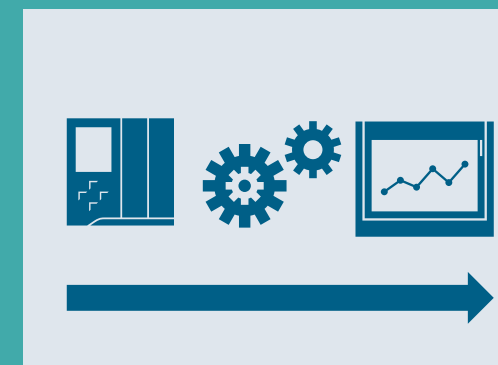
OPC UA
Alarms & Conditions



SCADA



Web ES



SiVArc for Unified

Training



Doelen van de training



Kennis van :

- De elementaire basis en configuratiestappen
- Vertrouwd gebruiken van de Unified Comfort Panels gebruiken en uw eigen HMI-projecten maken met WinCC Unified Engineering
- Ontwerpen TIA Portal-faceplates en animaties
- Efficiënte configuratie door gebruik van frontjes (screen window-technologie)
- Schermnavigatie maken (schermvenstertechnologie)
- Alarmen configureren
- Toegang tot S7-controllers

- Nieuwe gebruikers van WinCC Unified en Unified Comfort Panels.

U bent belast met het maken en/of bewerken van HMI-projecten. Of u nu voor het eerst gebruiker bent of al uw eerste contact met HMI's hebt gehad, deze cursus zal u veel nieuwe dingen laten zien en u vertrouwen geven in het gebruik van WinCC Unified en Unified Comfort Panels.

- Programmeurs
- Inbedrijfnamepersoneel
- Service- en onderhoudspersoneel

Inhoud van de training



- Systeem overzicht
- Kennismaken met de configuratie-gebruikersinterface van het engineeringssysteem
- Projecten maken en bewerken
- Het project downloaden naar het HMI-apparaat
- Schermen en schermnavigatie maken evenals Faceplates
- Systeemfuncties en planners gebruiken
- Aanmaken van de gebruikersadministratie
- Configureren van datalogging en alarmregistratie inclusief logboeken
- Recepten gebruiken



- Training voor het nieuwe HMI-systeem WinCC Unified, door gecertificeerde trainers
- Combinatie theorie en praktijk. Vaardigheid is meer dan kennis. Na voltooiing van de cursus beheerst u WinCC Unified door talrijke praktische oefeningen uit te voeren.
- Hands-on ervaring met de nieuwe Unified Comfort Panels. Krijg een persoonlijke indruk van de prestaties van de apparaten.

Startdatum: Eind oktober 2020



Training : Simatic WinCC Unified & Unified Comfort Panels

Duur : 3 dagen

Prijs : 1.365 EUR p.p.

Locatie : Siemens Trainingcentrum, Zoetermeer

Aanmelden :

- SITRAIN App (free download App store of Play store)
- SITRAIN website : www.siemens.nl/training
- Siemens.training.nl@siemens.com / 070 – 333 3903

Further Information



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
From Comfort to Unified Comfort Guideline	SIOS Download	SIOS Download
Getting Started Edge @ Unified Comfort Panel	SIOS Download	SIOS Download
Edge Apps @ Unified Comfort Panel Performance Insight	SIOS Download	SIOS Download



Is WinCC Unified System de juiste oplossing?

Heeft u een project waar u over wilt overleggen?

Loopt u vast bij het engineering van uw project?

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)



SIMATIC WinCC Unified – Promotion Packages Plant Intelligence Options



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

SIMATIC WinCC Unified Ordering Information - IPC Packages



Package	Options included	Order Number
WinCC Unified V16 PC RT 150 Package	WinCC Unified Logging Tags (100) Parameter Control	6AV2155-3DB01-6AA0
WinCC Unified V16 PC RT 500 Package	WinCC Unified Logging Tags (200) Parameter Control	6AV2155-1EB01-6AA0
WinCC Unified V16 PC RT 1k Package	WinCC Unified Logging Tags (500) Parameter Control	6AV2155-2EB01-6AA0
WinCC Unified V16 PC RT 2.5k Package	WinCC Unified Logging Tags (500) Parameter Control	6AV2155-2MB01-6AA0
WinCC Unified V16 PC RT 5k Package	WinCC Unified Logging Tags (1000) Parameter Control	6AV2155-1FB01-6AA0
WinCC Unified V16 PC RT 10k Package	WinCC Unified Logging Tags (1000) Parameter Control	6AV2155-2FB01-6AA0
WinCC Unified V16 PC RT 50k Package	WinCC Unified Logging Tags (1000) Parameter Control	6AV2155-1GB01-6AA0

Further information SIOS: [99860269](https://www.sios.com)

SIMATIC WinCC Unified Promotion Packages (IPC Package)



Package	Options included	Order Number
WinCC Unified V16 PC RT 150 + 1 Client Package	Parameter Control LoggingTags (100) Client Operate (1)	6AV2155-3DV01-6AA0
WinCC Unified V16 PC RT 150 + 2 Clients Package	Parameter Control LoggingTags (200) Client Operate (2)	6AV2155-3DW01-6AA0
WinCC Unified V16 PC RT 500 + 1 Client Package	Parameter Control LoggingTags (100) Client Operate (1)	6AV2155-1EV01-6AA0
WinCC Unified V16 PC RT 500 + 2 Client Package	Parameter Control LoggingTags (200) Client Operate (2)	6AV2155-1EW01-6AA0

Further information SIOS: [99860269](https://www.siemens.com/press/en/2020/06/01/simatic-wincc-unified-systems-ipc-packages/)

SIMATIC HMI Unified Comfort Panels – Ordering information



Device Name	Display Size	MLFB Standard Design	MLFB Neutral Design
MTP700 Unified Comfort	7.0"	6AV2128-3GB06-0AX0	6AV2128-3GB36-0AX0
MTP1000 Unified Comfort	10.1"	6AV2128-3KB06-0AX0	6AV2128-3KB36-0AX0
MTP1200 Unified Comfort	12.1"	6AV2128-3MB06-0AX0	6AV2128-3MB36-0AX0
MTP1500 Unified Comfort	15.6"	6AV2128-3QB06-0AX0	6AV2128-3QB36-0AX0
MTP1900 Unified Comfort	18.5"	6AV2128-3UB06-0AX0	6AV2128-3UB36-0AX0
MTP2200 Unified Comfort	21,5"	6AV2128-3XB06-0AX0	6AV2128-3XB36-0AX0

WinCC Unified – Edge Runtime	Online Software Delivery (OSD)
EDGE Runtime for Unified Comfort (Device-managed)	6AV2170-2BA00-0AA0

Mounting Frames – Ordering information

Q4/2020

Name	Mounting compatibility	MLFB
Mounting Frame Set 15" Touch	from TP1500 to MTP15000	6AV6881-6QD41-1AA0
Mounting Frame Set 19" Touch	from TP1900 to MTP1900	6AV6881-6UD41-1AA0
Mounting Frame Set 22" Touch	from TP2200 to MTP2200	6AV6881-6VD41-1AA0

SIMATIC HMI Unified Comfort Panels – Starter Kits



Device Name	MLFB
MTP700 Unified Comfort Starter Kit	6AV2128-3GB06-0AP0
MTP1000 Unified Comfort Starter Kit	6AV2128-3KB06-0AP0
MTP1200 Unified Comfort Starter Kit	6AV2128-3MB06-0AP0
MTP1500 Unified Comfort Starter Kit	6AV2128-3QB06-0AP0
MTP1900 Unified Comfort Starter Kit	6AV2128-3UB06-0AP0
MTP2200 Unified Comfort Starter Kit	6AV2128-3XB06-0AP0

Thank you for your attention!



Siemens Nederland NV
SIMATIC WinCC Unified Team

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