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Guide for switching from Comfort Panels to Unified Comfort Panels

SIMATIC WinCC Comfort V16
SIMATIC WinCC Unified V16
SIMATIC HMI Comfort Panel
SIMATIC HMI Unified Comfort Panel

https://support.industry.siemens.com/cs/ww/en/view/109768002

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1 Introduction

1.1 Overview

SIMATIC WinCC Unified is the all-new visualization system from Siemens for automation applications. The SIMATIC WinCC Unified System consists of the SIMATIC WinCC Unified visualization software and the new SIMATIC HMI Unified Comfort Panels.

The Unified Comfort Panels thus extend the product range beyond the previous Comfort Panels. In addition to the new hardware, there are also numerous new features in comparison to the Comfort Panels when it comes to engineering.

This document presents and describes important points in order to provide a precise overview of the similarities and differences between the two generations of HMI devices.

Figure 1-1

1.2 Components used

The following hardware and software components were used to create this application example:

Table 1-1

Component	Quantity	Item number	Note
SIMATIC WinCC V16 Update 1	1	6AV210. -....6-0…	Engineering in TIA Portal.
SIMATIC WinCC Unified V16 (Engineering) Update 1	1	6AV2153-....1-6...	Engineering in TIA Portal.
SIMATIC HMI Comfort Panel TP1200	1	6AV2124-0MC01-0AX0	Alternatively, any other SIMATIC HMI Comfort Panel can be used.
SIMATIC HMI Unified Comfort Panel MTP1200	1	6AV2128-3MB06-0AX0	Alternatively, any other SIMATIC HMI Unified Comfort Panel can be used.

1.3 Switching out a Comfort Panel for a Unified Comfort Panel

The table below provides an overview of which Unified Comfort Panels can be used in place of the Comfort Panels.

Table 1-2

Comfort Panel	Item number	Unified Comfort Panel	Item number
KTP400 Comfort	6AV2124-2DC01-0AX0	-	-
TP700 Comfort	6AG1124-0GC01-4AX0	MTP700 Unified Comfort	6AV2128-3GB06-0AX0
TP900 Comfort	6AV2124-0JC01-0AX0	MTP1000 Unified Comfort	6AV2128-3KB06-0AX0
TP1200 Comfort	6AV2124-0MC01-0AX0	MTP1200 Unified Comfort	6AV2128-3MB06-0AX0
TP1500 Comfort	6AV2124-0QC02-0AX1	MTP1500 Unified Comfort	6AV2128-3QB06-0AX0
TP1900 Comfort	6AV2124-0UC02-0AX1	MTP1900 Unified Comfort	6AV2128-3UB06-0AX0
TP2200 Comfort	6AV2124-0XC02-0AX1	MTP2200 Unified Comfort	6AV2128-3XB06-0AX0

1.4 Explanation of symbols used

The following table shows you the symbols used when comparing the two devices/systems and the associated meaning:

Table 1-3

Symbol	Meaning
●	Function available or supported
-	Function not available, not supported, or not yet supported

2 Hardware

2.1 Mounting cutouts

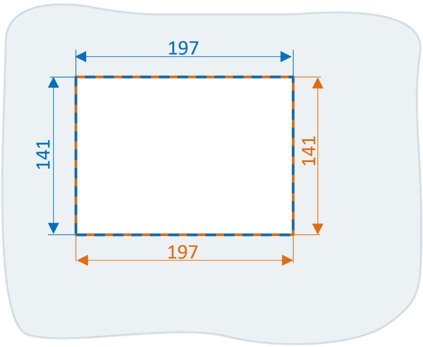
The following table presents the dimensions of the Comfort Panels in comparison to the Unified Comfort Panels.

Table 2-1

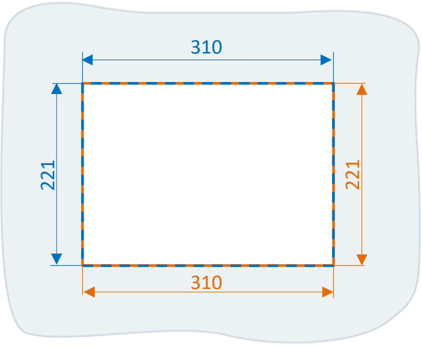
Comfort devices	Dimensions			Unified Comfort devices	Dimensions		
	Mounting cutout W x H [mm]	Device mounting depth [mm]	Front W x H [mm]		Mounting cutout W x H [mm]	Device mounting depth [mm]	Front W x H [mm]
TP700	197 x 141	63	214 x 158	**MTP700**	197 x 141	64	214 x 158
TP900	250 x 166	63	274 x 190	**MTP1000**	264 x 189	64	280 x 205
TP1200	310 x 221	64	330 x 241	**MTP1200**	310 x 221	64	326 x 237
TP1500	396 x 291	73	415 x 310	**MTP1500**	382 x 241	73	398 x 257
TP1900	465 x 319	73	483 x 337	**MTP1900**	448 x 278	73	464 x 294
TP2200	542 x 362	73	560 x 380	**MTP2200**	513 x 315	73	529 x 331

Installation compatibility (7" and 12" variants)

If you wish to change from a Comfort Panel TP700 to a Unified Comfort Panel MTP700 (or from a TP1200 to an MTP1200), no manual changes will be necessary. The installation cutouts are identical, therefore the devices are compatible.



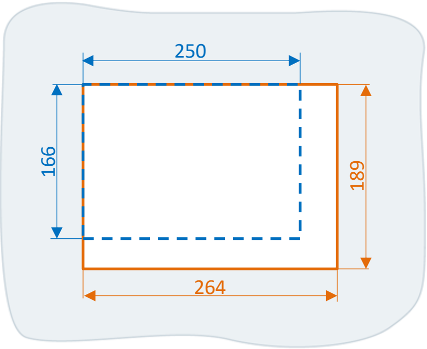
Comfort Panel TP700
Unified Comfort Panel MTP700



Comfort Panel TP1200
Unified Comfort Panel MTP1200

Enlarging an installation cutout (9" variants)

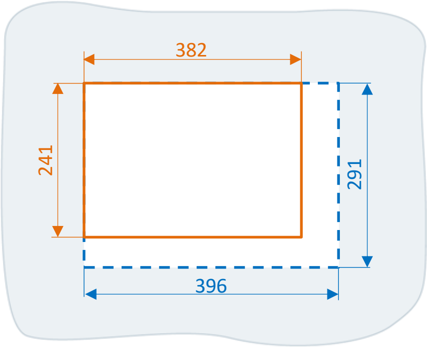
The alternative to the Comfort Panel TP900 is the Unified Comfort Panel MTP1000. In order to affix the MTP1000 in the existing installation cutout, an enlargement will be necessary (width x height: 14 x 23mm) upon the previous installation cutout.



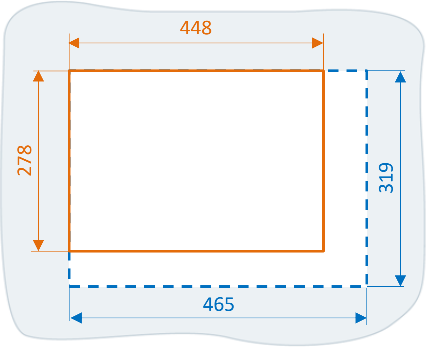
Comfort Panel TP900
Unified Comfort Panel MTP1000

TP1500, TP1900 and TP2200 adapter frames

The installation cutouts for the 15", 19" and 22" variants of the Unified Comfort Panels are smaller in comparison to the Comfort Panels.



Comfort Panel TP1500
Unified Comfort Panel MTP1500



Comfort Panel TP1900
Unified Comfort Panel MTP1900

However, you can keep the existing installation cutouts and mount the Unified Comfort Panel using an adapter frame in spite of the cutout size discrepancy (see table below).

Table 2-2

Required for	Name	Item number
MTP1500	Adapter frame, widescreen, 15" Touch	6AV6881-6QD41-0AA0
MTP1900	Adapter frame, widescreen, 19" Touch	6AV6881-6UD41-0AA0
MTP2200	Adapter frame, widescreen, 22" Touch	6AV6881-6VD41-0AA0

Note

When the adapter frames will be available, you may inquire at your Siemens contact person or takes place via the delivery release in Siemens Industry Online Portal.

2.2 Interfaces

Overview

The following table presents a direct comparison of the Comfort and Unified Comfort interfaces.

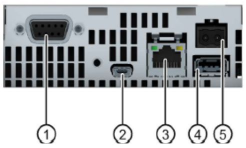
Table 2-3

Description	Comfort Panel			Unified Comfort Panel
	4" variant	7"/9"/12" variants	15"/19"/22" variants	
Power supply connector	●			
Connection for potential equalization (ground)	-	●		
Memory expansion				
PROFINET (LAN) X1, 10/100 Mbps	●			
PROFINET (LAN) X2, 10/100/1000 Mbps	-		●	
PROFIBUS (SUB-D RS422/485)	●			-
USB and SD				
Number of USB Type A ports	1	2	2	4
USB Type Mini B	●			-
SD card slot for data storage and system storage	●			
Other				
Audio Line OUT	-	●		-
Maintenance button	-			●

2.2.1 Interfaces, Comfort Panels

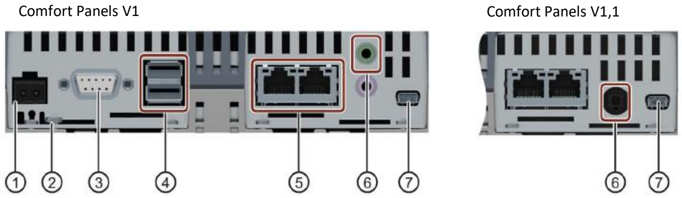
Below you will find a graphical overview of the interfaces of the SIMATIC HMI Comfort Panels.

Interfaces, Comfort Panel (4" variants)



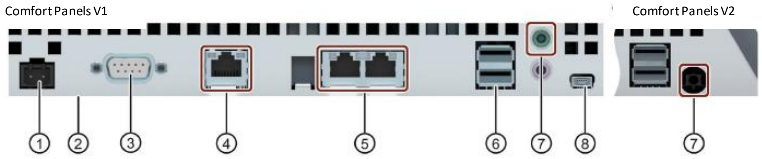
① X2 PROFIBUS (SUB-D RS422/485)
② X60 USB Typ Mini-B
③ XI PROFINET (LAN). 10/100 MBit
④ X61 USB Typ A
⑤ X80 Connection for the power supply

Interfaces, Comfort Panel (7", 9" and 12" variants)



① X80 Connection for the power supply
② Connection for equipotential bonding (earthing)
③ X2 PROFIBUS (SUB-D RS422/485)
④ X6I / X62 USB Typ A
⑤ X1 PROFINET (LAN). 10/100 MBit
⑥ X90 Audio Line OUT
⑦ X60 USB Typ Mini-B

Interfaces, Comfort Panel (15", 19" and 22" variants)



① X80 Connection for the power supply
② Connection for equipotential bonding (earthing)
③ X2 PROFIBUS (SUB-D RS422/485)
④ X3 PROFINET (LAN) 10/100/1000 Mbit,
⑤ X1 PROFINET (LAN), 10/100 MBit
⑥ X61 / X62 USB Typ A
⑦ X90 Audio Line OUT
⑧ X60 USB Typ Mini-B,

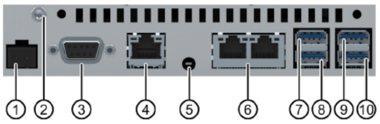
Note

Additional information on the interfaces, including descriptions, can be found in the "SIMATIC HMI Devices Comfort Panels" manual.

https://support.industry.siemens.com/cs/ww/en/view/49313233

2.2.2 Interfaces, Unified Comfort Panels (7" to 22" variants)

Below you will find a graphical overview of the interfaces of the SIMATIC HMI Unified Comfort Panels. All SIMATIC HMI Unified Comfort Panels have an identical interface configuration.



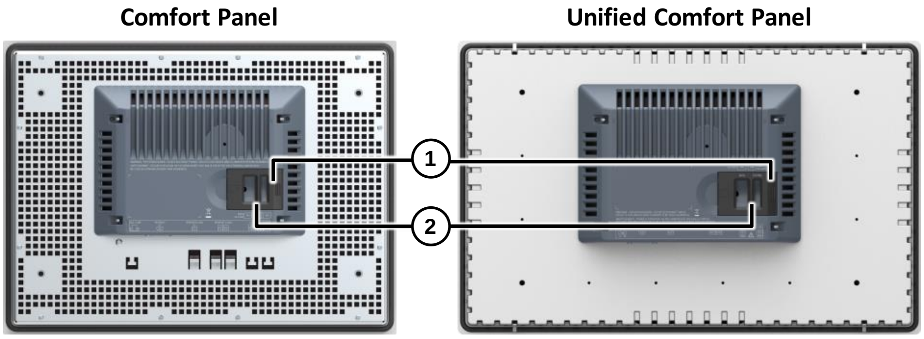
① X80 Connection for the power supply
② Connection for equipotential bonding (functional earth)
③ X20 RS422/485 (SUB-D)
④ X2 PROFINET (LAN), 10/100/1000 Mbit
⑤ Maintenance button
⑥ X1 PROFINET (LAN), 10/100 Mbit
⑦ X61 USB
⑧ X62 USB
⑨ X63 USB
⑩ X64 USB

Note

Additional information on the interfaces, including descriptions, can be found in the "SIMATIC HMI Devices Unified Comfort Panels" manual.

https://support.industry.siemens.com/cs/ww/en/view/109773257

2.2.3 SIMATIC HMI storage cards



Besides the previous SIMATIC HMI storage cards (512 MB and 2 GB), 32 GB storage cards are now available.

They must be used as system storage cards, and can also be used as data storage cards. The previous 2 GB SIMATIC HMI storage cards may still be used in the Unified Comfort Panels as data storage cards.

Note

Further information, including item numbers for the SIMATIC HMI storage cards, can be found under the product release "SD memory cards, 512 MB, 2 GB to 32 GB for SIMATIC HMI Panels, HMI Unified and IPC":

https://support.industry.siemens.com/cs/ww/en/view/109773768

Note

For a list of other external storage media that you can use, please refer to the FAQ "Which external storage media can you use with the current SIMATIC Panels, or which memory card interfaces do they have?"

https://support.industry.siemens.com/cs/ww/en/view/21847868

2.3 Control Panel

The Unified Comfort Panel has a Control Panel. It is used to launch and configure important device functions.

2.3.1 Control Panel comparison

The following table provides you with an overview of where the individual Control Panel functions of the Comfort Panel appear in the Control Panel of the Unified Comfort Panel.

Table 2-4

Comfort Panel		Unified Comfort Panel		
Function		Control Panel Category		Control Panel function
	Import, display and delete certificates		Security	Certificates
	Set the date and time		Language, Region and Formats	Date and time

Comfort Panel		Unified Comfort Panel		
Function		Control Panel Category		Control Panel function
	Change display brightness		System Properties	Display
	Change screen orientation			
	Configure the screen keyboard	Directly, via the integrated on-screen keyboard		
	Change general settings	-		
	Set the proxy server			
	Modify security settings for the internet	Directly, via web browser		
	Enable encryption protocols	-		
	Set the character repeat rate of the keyboard	-		
	Set double-click speed	-		
	Enter IP address and domain name server		Networks and Internet	Network settings
	Enter logon data	-		
	Back up registry and temporary data	-		
	Display info about Comfort Panel		System Properties	Panel information
	Restart HMI device		System Properties	Reboot
	Calibrate the touch screen	-		
	Activate memory management		System Properties	Performance
	Enable/disable retentive memory of the alarm buffer on the HMI device		Runtime Properties	Alarm buffer
	Change password protection		Security	Control panel access
	Change the printer settings		Apps	Printer Configuration
	Enabling NTP	-		
	Enabling PROFINET			
	Change region-specific presets	-		
	Set the screen saver		System Properties	Screensaver
	Back up to external storage medium - Backup		Service and Commissioning	Backup
	Restore from external storage device - Restore		Service and Commissioning	Restore
	Update the operating system		Service and Commissioning	Update OS
	Load project from external storage device (2)	-		
	Use automatic backup		Service and Commissioning	Automatic backup
	Assign IP address and device name	-		
	Adjust volume and sound	-		

Comfort Panel	Unified Comfort Panel	
Function	**Control Panel Category**	**Control Panel function**
Display general system properties	-	
Show memory allocation	In "Edge Management" under "Statistics"	
Enter computer name for the HMI device	-	
Enter parameters for transfer	Service and Commissioning	Transfer
Set save location and startup delay for a project	Runtime Properties	Automatic runtime start
State of uninterruptible power supply	-	
Setting the uninterruptible power supply		
Assign parameters for sent emails	Apps	Email client
Parameter entry for telecontrol	-	
Enter parameters for Sm@rt server	Networks and Internet	Remote connection
Enter parameters for web server connection	-	
-	System Properties	Performance
-	External Devices and Input	Hardware interfaces
-	Service and Commissioning	Trace forwarder
-	Security	User Management
-	Apps	SIMATIC Edge
-	Apps	File Browser
-	Apps	App Management

Note

Please refer to the respective operating manuals for more information on the individual functions:

Comfort Panel: "Control Panel"
https://support.industry.siemens.com/cs/ww/en/view/49313233/113279340171

Unified Comfort Panel: "Operating the Control Panel"
https://support.industry.siemens.com/cs/ww/en/view/109773257/133190901003

2.3.2 Pre-installed programs

The following table provides an overview of the already installed programs:

Table 2-5

Description	Comfort Panel	Unified Comfort Panel
Viewing PDF files	PDF-Viewer	
Playing back audio and video files	Media Player	
Viewing text documents	Word-Viewer	Doc Viewer
Viewing spreadsheets	Excel-Viewer	
Editing text documents and spreadsheets	-	Doc Viewer
Accessing internet sites	Internet Explorer	Web Browser
Search and manage files in the file system	-	File Browser
Printer management	-	Printer Configuration
Sending and receiving emails	-	Email client

2.3.3 Remote access to operator devices (Sm@rtServer/web server)

You can remotely access both the Comfort Panel as well as the Unified Comfort Panel. The following table shows the differences between the two devices.

Table 2-6

Description	Comfort Panel	Unified Comfort Panel
Sm@rtServer		
Sm@rt Server available	●	
Maximum number of connected Sm@rtClients	3 (7"-12" devices) 2 (4" and 19" devices) 1 (22" device)	No limit
License required	- (Requires license up to TIA V14)	-
Remote access PC → HMI device	● (Sm@rtClient application)	
Remote access mobile end-user device → HMI device	● (Sm@rtClient app)	-
Remote access HMI device → HMI device	● (Sm@rtClient display)	-
Independent of runtime	-	●
Configurable operator interlock	●	-
Web server		
Web server available	●	-

Note

For additional information, refer to the operating instructions for the respective device under:

Comfort Panel: "Configure Sm@rt server"
https://support.industry.siemens.com/cs/ww/en/view/49313233/101865637387

Unified Comfort Panel: "Remote connection "
https://support.industry.siemens.com/cs/ww/en/view/109773257/132057706123

2.4 Memory concept

The memory concept of the Unified Comfort Panel is practically identical to that of the Comfort Panel. Thus, you have the option of using the following memory cards on both devices:

- Internal memory
- Memory card for data and logs
- System memory card for "Automatic backup" (see chapter
- USB port for a USB storage device with data

  Note:
  In the case of the SIMATIC HMI Unified Comfort Panel, each USB port has a specific path that must be accounted for in the configuration.

Note

For additional information, please refer to the respective operating manual under "Memory concept":

Comfort Panel:
https://support.industry.siemens.com/cs/ww/en/view/49313233/113210228491

Unified Comfort Panel:
https://support.industry.siemens.com/cs/ww/en/view/109773257/133824276619

2.5 Technical specifications

2.5.1 Resolutions

You can find the resolutions of each of the HMI devices in the in the table below.

Table 2-7

Comfort Panel		**Unified Comfort Panel**	
Device name	**Resolution**	**Resolution**	**Device name**
KTP400 Comfort	480 x 272	-	-
TP700 Comfort	800 x 480		MTP700 Unified Comfort
TP900 Comfort	800 x 480	1280 x 800	MTP1000 Unified Comfort
TP1200 Comfort	1280 x 800		MTP1200 Unified Comfort
TP1500 Comfort	1280 x 800	1366 x 768	MTP1500 Unified Comfort
TP1900 Comfort	1366 x 768	1920 x 1080	MTP1900 Unified Comfort
TP2200 Comfort	1920 x 1080		MTP2200 Unified Comfort

2.5.2 Connecting peripherals

You can also connect peripherals to HMI operator devices in order to implement additional functions.

Table 2-8

Description	**Comfort Panel**			**Unified Comfort Panel**
	4" variant	7"/9"/12" variants	15"/19"/22" variants	
Printers	●			●[1]
Barcode reader	●			-
Mouse/keyboard (USB)	●			
USB storage	●			
SIMATIC HMI MM memory card: Multi Media Card	● (up to 128 MB)			-
SIMATIC HMI SD memory card: Secure Digital Memory Card	● (up to 32 GB)			●
SIMATIC IPC USB flash drive (USB dongle)	● (up to 16 GB)			●
SIMATIC HMI USB flash drive (USB dongle)	● (up to 8 GB)			●
Network camera	●			● (via Web control and "https" webstream)
Uninterruptible power supply (UPS)	●			-

Note

[1] **Printers**

Both the Comfort Panels and Unified Comfort Panels support connecting a printer.

In the case of the Unified Comfort Panels, you are provided with a separate configuration dialog for this purpose, which you can find under "Apps" > "Printer Configuration" > "Start". In addition to the printer description, also note the printer settings for the Unified Comfort Panels. These can be found in the operating manual in the chapter entitled "Connecting a printer":

https://support.industry.siemens.com/cs/ww/en/view/109773257/131853811979

2.5.3 Usable memory

The following table provides you with an overview of the usable memory of the Comfort Panel and the Unified Comfort Panel.

Table 2-9

Comfort Panels			Unified Comfort Panels		
Device name	**Usable memory for user data**	**Usable memory for recipe data1)**	**Usable memory for user data**	**Usable memory for parameter set storage1)**	**Device name**
KTP400 Comfort	4 MB	512 KB	-	-	-
TP700 Comfort	12 MB	2 MB	1 GB of main memory, 2 GB of flash memory	12 MB	MTP700 Unified Comfort
TP900 Comfort					MTP1000 Unified Comfort
TP1200 Comfort					MTP1200 Unified Comfort
TP1500 Comfort	24 MB	4 MB			MTP1500 Unified Comfort
TP1900 Comfort					MTP1900 Unified Comfort
TP2200 Comfort					MTP2200 Unified Comfort

1) Can be expanded with memory card or USB drive

Note

You can find more information on the runtime settings groups in the corresponding manual under:

Comfort Panel: "Technical specifications"
https://support.industry.siemens.com/cs/ww/en/view/49313233/111674479883

Unified Comfort Panel: "Technical specifications"
https://support.industry.siemens.com/cs/ww/en/view/109773257/133861564811

3 Configuration

3.1 Configuration software

The new Unified Comfort Panels can only be configured with SIMATIC WinCC Unified. The minimum requirement to do this is that WinCC Unified V16 Comfort (Engineering) be installed.

6AV2151-0XB01-6AA5	WinCC Unified V16 Comfort Engineering (Package)
6AV2151-0XB01-6LA5	WinCC Unified V16 Comfort Engineering (Download)

Note

If you have an existing WinCC Comfort, WinCC Advanced or WinCC Professional license, you can use it for WinCC Unified and configure the Unified Comfort Panels.

Note

If you install WinCC Unified V16 (Comfort or PC) Engineering, you can configure both the Unified Comfort Panels as well as the Comfort Panels.

3.2 "Runtime Settings"

In the Runtime settings, you will configure options in various areas of your project.

Note

You can find more information on the runtime settings groups in the corresponding manual under:

WinCC Comfort/Advanced V16: "Runtime settings"
https://support.industry.siemens.com/cs/ww/en/view/109773506/120247679627

WinCC Unified V16: "Runtime settings"
https://support.industry.siemens.com/cs/ww/en/view/109773780/122294046219

3.3 "Screens" and screen objects

In WinCC, you create screens which an operator can use to control and monitor machines and plants. In order to create screens, you have access to predefined objects which you can use to map your system, display process sequences and specify process values.

Scope of functions with WinCC Comfort/Advanced or Unified

Table 3-1

Description	Comfort Panel	Unified Comfort Panel
Number of screens	500 (4"-12" devices) 750 (15" devices and up)	1200
Number of objects per screen	50 (4" devices) 400 (7"-12" devices) 600 (15" devices and up)	800 (up to 12" devices) 1200 (15" devices and up)
Number of child screen windows	-	10
Number of tags per screen	50 (4" devices) 400 (7"-12" devices) 600 (15" devices and up)	600 (up to 12" devices) 800 (15" devices and up)
Number of complex objects (controls) per screen	(4" devices) 20 (7"-12" devices) 40 (15" devices and up)	40 (up to 12" devices) 80 (15" devices and up)
Custom styles applicable to screen objects	●	-

Description	Comfort Panel	Unified Comfort Panel
Automatic scaling of screens is possible when device is changed (larger or smaller resolution)	●	-
Screens can be configured larger than the device resolution	-	●
Screen objects configured outside of the screen area are visible in the runtime	-	●
Display screen objects in the runtime	Complex objects (such as controls) always on top	per configuration in Engineering stage

Note For more information, please refer to the corresponding manual under:

WinCC Comfort/Advanced V16: "Creating screens"
https://support.industry.siemens.com/cs/ww/en/view/109773506/112868397707

WinCC Unified V16: "Configuring screens"
https://support.industry.siemens.com/cs/ww/en/view/109773780/129674397195

3.3.1 Comparison of screen objects

The tables below provide you with a general comparison of the screen objects between WinCC Comfort/Advanced and WinCC Unified.

Note Additional information and restrictions on the screen objects can be found in the respective manuals under:

WinCC Comfort/Advanced V16: "Overview of objects"
https://support.industry.siemens.com/cs/ww/en/view/109773506/119600066699

WinCC Unified V16: "Configuring objects"
https://support.industry.siemens.com/cs/ww/en/view/109773780/128148588427

Note **"Changed" screen object property**

Each property of a screen object has the "Changed" event. This event occurs if at least one object attribute changes or if a screen is selected again (screen change).

Basic objects

Table 3-2

<table>
<tr><th>Description</th><th>Comfort Panel</th><th>Unified Comfort Panel</th></tr>
<tr><td>"Line"</td><td colspan="2">●</td></tr>
<tr><td>"Polyline"</td><td colspan="2">●</td></tr>
<tr><td>"Polygon"</td><td colspan="2">●</td></tr>
<tr><td>"Ellipse"</td><td colspan="2">●</td></tr>
<tr><td>"Circle"</td><td colspan="2">●</td></tr>
<tr><td>"Rectangle"</td><td colspan="2">●</td></tr>
<tr><td>"Text field"</td><td colspan="2">●</td></tr>
<tr><td>"Graphic view"</td><td colspan="2">●</td></tr>
</table>

Description	Comfort Panel	Unified Comfort Panel
"Ellipse segment"	-	●
"Ellipse arc"	-	●
"Circle arc"	-	●
"Circle segment"	-	●

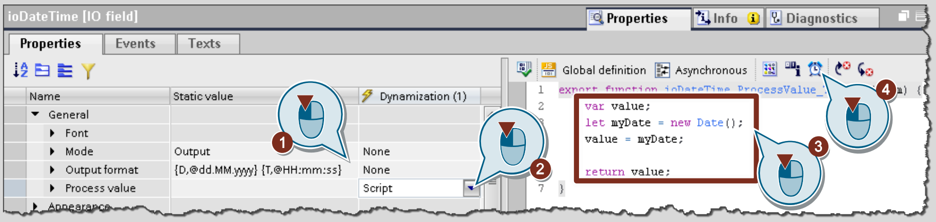
Elements

Table 3-3

Description	Comfort Panel	Unified Comfort Panel
"IO field"	●	●
"Button"	●	●
"Symbolic I/O field"	●	●
"Graphic IO field"	●	● Input/output: via symbolic IO field; Output: via graphic view)
"Date/time field"	●	● (can be applicatively realized with IO field and script)[1]
"Bar"	●	●
"Symbol library"	●	-
"Switch"	●	●
"Slider"	●	●
"Gauge"	●	●
"Clock"	●	●
"Radio button"	-	●
"Check box"	-	●
"List box"	-	●
"Touch area"	-	●

Note

[1] Date/time field
In WinCC Unified, you can represent the date/time field by inserting the IO field and specifying as dynamization the script shown (2 and 3). This script is then executed cyclically every second (4).



ioDateTime [IO field]

Name	Static value	Dynamization (1)
General		
Font		
Mode	Output	None
Output format	{D,@dd.MM.yyyy} {T,@HH:mm:ss}	None
Process value		Script
Appearance		

```
export function ioDateTime_ProcessValue_                  m) {
    var value;
    let myDate = new Date();
    value = myDate;

    return value;
}
```

Note

Swiping gestures are recognized using the "Touch area" screen object and you can trigger any script or system function. You can also distinguish between four directions (to the left, to the right, upward or downward), or any type of swipe gesture.

Controls

Table 3-4

<table>
<tr><th>Description</th><th>Comfort Panel</th><th>Unified Comfort Panel</th></tr>
<tr><td>"Alarm control"</td><td colspan="2">●</td></tr>
<tr><td>"Web control"</td><td colspan="2">●</td></tr>
<tr><td>"Trend control"</td><td colspan="2">●</td></tr>
<tr><td>f(x) trend display ("Function trend control")</td><td>●</td><td>-</td></tr>
<tr><td>"Media player"</td><td>●</td><td>●
(StartProgram → VLC Player)</td></tr>
<tr><td>User administration ("User view")</td><td>●</td><td>●
(Via Control Panel)[1]</td></tr>
<tr><td>"Watch table"</td><td>●</td><td>-</td></tr>
<tr><td>"Sm@rtClient view"</td><td>●</td><td>-</td></tr>
<tr><td>"Recipe view"</td><td>●</td><td>●
(Parameter set control)</td></tr>
<tr><td>"System diagnostics view"</td><td>●</td><td>-</td></tr>
<tr><td>"PLC code view"</td><td>●</td><td>-</td></tr>
<tr><td>"GRAPH overview"</td><td>●</td><td>-</td></tr>
<tr><td>"ProDiag overview"</td><td>●</td><td>-</td></tr>
<tr><td>"Criteria analysis"</td><td>●</td><td>-</td></tr>
<tr><td>"Camera view"</td><td>●</td><td>●
(via Web control and "https" webstream)</td></tr>
<tr><td>"PDF view"</td><td>●</td><td>●
(StartProgram → PDF Viewer)</td></tr>
<tr><td>"Faceplates-Container"</td><td>●</td><td>●
(Faceplates-Container)</td></tr>
<tr><td>"Screen window"</td><td>-</td><td>●</td></tr>
<tr><td>"Alarm indicator"</td><td>-</td><td>●
(application-based)</td></tr>
<tr><td>"Alarm window"</td><td>●</td><td>●
(application-based)</td></tr>
<tr><td>"System diagnostics window"</td><td>●</td><td>-</td></tr>
</table>

1) User administration is launched with the system function "ShowControlPanel" and the parameter "Security.UserManagement".

Faceplates

Table 3-5

Description	Comfort Panel	Unified Comfort Panel
General		
Storage location	Project library → types	Project tree → common data
Own editor	●	●
Show/hide entire faceplate	● (Make each element in the faceplate visible/invisible)	●
Generate faceplate from screen configuration	●	-
Versioning	●	-
Type/instance concept	●	
Assign new faceplate type to faceplate instances	-	●
Events available on faceplate instances	● (arranged outwards from faceplate)	●
scalable in the engineering phase	●	-
Cascading faceplates		
Open faceplate from faceplate	-	●
Data structure transfer possible between the faceplates	-	● (Automatic transfer of own structure)
Interface		
Pass tags	●	
Pass UDTs	●	● (Only PLC UDTs)
Internal tags configurable	●	● (via interface tags that are not interconnected)
Pass colors	●	
Pass text and graphics lists	●	● (Only text lists)
Pass static texts	●	-
Configurable screen objects		
Basic objects	●	
Elements	●	
Controls	-	
My controls	-	
Graphics	●	
Dynamic SVGs	-	

Note

Additional information is available in the appropriate manual under:

WinCC Comfort/Advanced V16: "Working with faceplates"
https://support.industry.siemens.com/cs/ww/en/view/109773506/109068355723

WinCC Unified V16: "Configuring faceplates"
https://support.industry.siemens.com/cs/ww/en/view/109773780/119100990987

Additional screen objects

Table 3-6

Description	Comfort Panel	Unified Comfort Panel
"My controls"	-	●
"Graphics"	●	
Dynamic SVGs/"Dynamic widgets"	-	●

3.3.2 Animating screen objects

In WinCC you have the ability to animate screen objects. Depending on the screen object, you have different options for creating animations.

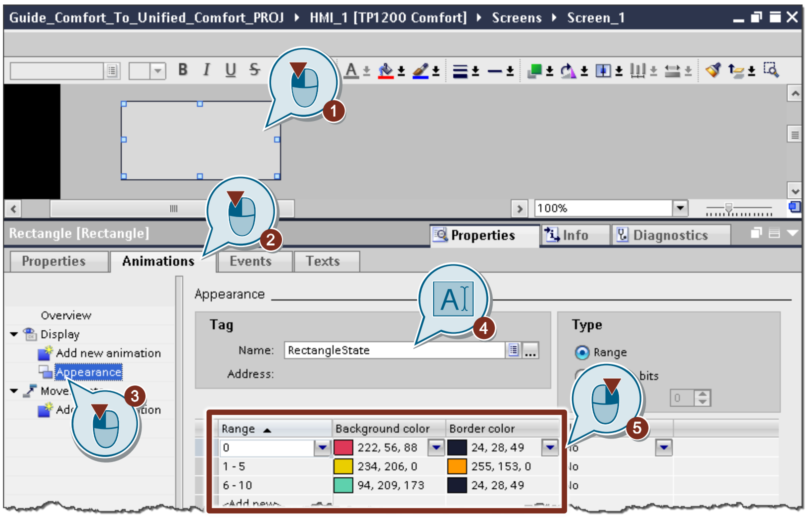
This chapter will demonstrate how to animate screen objects in WinCC Comfort/Advanced and WinCC Unified. In this example, the background color of a rectangle will change depending on a tag value.

WinCC Comfort/Advanced

In WinCC Comfort/Advanced, proceed as follows:

1. Select the screen object that you want to animate.
2. Open "Properties > Animation"
3. Insert the animation "Appearance".
4. Select the tag that the appearance will depend on.
5. Configure the "Range", the "Background color" and the "Border color".

Figure 3-1


Guide_Comfort_To_Unified_Comfort_PROJ ▸ HMI_1 [TP1200 Comfort] ▸ Screens ▸ Screen_1
100%
Rectangle [Rectangle]
Properties
Info
Diagnostics
Properties
Animations
Events
Texts
Overview
Display
Add new animation
Appearance
Move
1
2
3
4
5

Appearance

Tag

Name: RectangleState

Address:

Type

● Range

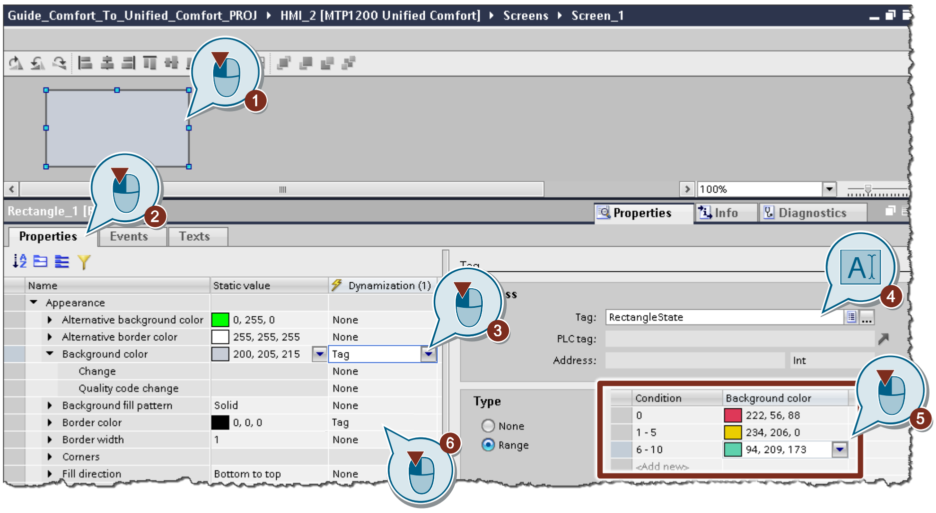
Range	Background color	Border color
0	🟥 222, 56, 88	■ 24, 28, 49
1 - 5	🟨 234, 206, 0	🟧 255, 153, 0
6 - 10	🟩 94, 209, 173	■ 24, 28, 49

WinCC Unified

In WinCC Unified, you will animate the properties using the "Dynamization" column. The following steps are required to do this:

1. Select the screen object that you want to animate.
2. Open "Properties".
3. For the "Background color" property, select "Tag" as dynamization.
4. In the configuration area, select the tag that the appearance will depend on.
5. Configure the "Condition" and the "Background color".
6. Repeat steps 3-5 for the "Border color" property.

Figure 3-2


Guide_Comfort_To_Unified_Comfort_PROJ ▸ HMI_2 [MTP1200 Unified Comfort] ▸ Screens ▸ Screen_1
100%
Rectangle_1 [R
Properties
Events
Texts
Properties
Info
Diagnostics
Type
○ None
● Range
1
2
3
4
5
6

Name	Static value	Dynamization (1)
Appearance		
Alternative background color	🟩 0, 255, 0	None
Alternative border color	255, 255, 255	None
Background color	200, 205, 215	Tag
Change		None
Quality code change		None
Background fill pattern	Solid	None
Border color	0, 0, 0	Tag
Border width	1	None
Corners		
Fill direction	Bottom to top	None

Tag: RectangleState
PLC tag:
Address: Int

Condition	Background color
0	🟥 222, 56, 88
1 - 5	🟨 234, 206, 0
6 - 10	🟩 94, 209, 173
<Add new>	

Animation comparison

The following comparison shows you which property dynamization you can use to implement the animations from WinCC Comfort/Advanced.

Table 3-7

Animation	Comfort Panel	Unified Comfort Panel
"Tag connections"		
"Process value"	●	● (Dynamization, process value)
"Display"		
Appearance ("Appearance")	●	● (Dynamization of background and border color)
Operability ("Control enable")	●	● (Dynamization ("Allow operator control")
Visibility ("Visibility")	●	● (Dynamization of "Visibility")
"Movements"		
Direct movement ("Direct movement")	●	● (dynamization "left" and "up")1)
Diagonal motion ("Diagonal movement")	●	● (dynamization "left" and "up")1)
Horizontal movement ("Horizontal movement")	●	● (Dynamization "left")1)
Vertical movement ("Vertical movement ")	●	● (Dynamization "up")1)

1) It may still be necessary to customize the dynamizations in WinCC Unified on an application-specific basis.

Note

WinCC Unified offers substantially more options for animations/dynamizations, as nearly every property of a screen object can be dynamized.

For further information, refer to the manual chapter "Configuring dynamization".

https://support.industry.siemens.com/cs/ww/en/view/109773780/129522357771

3.3.3 Configuring a screen change

Typically multiple screens are needed for plant visualization. You must configure a screen change in order to switch between the various screens.

System functions for screen changes

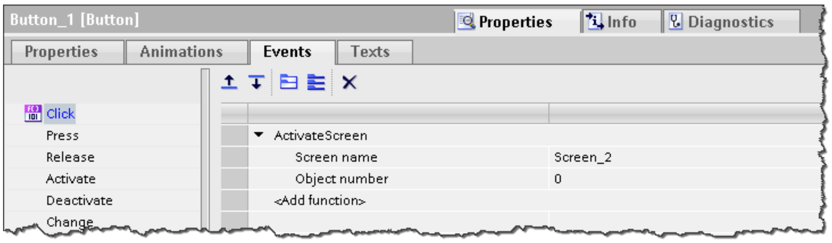
Table 3-8

Description	Comfort Panel	Unified Comfort Panel
"ActivateScreen"	●	● "ChangeScreen"
"ActivateScreenByNumber"	●	-
"ActivatePreviousScreen"	●	● (can be implemented applicatively)

WinCC Comfort/Advanced

In WinCC Comfort/Advanced, you will configure the screen change with "ActivateScreen", regardless of whether you do so in a process screen, slide-in screen or Permanent area of the HMI device.

Figure 3-3

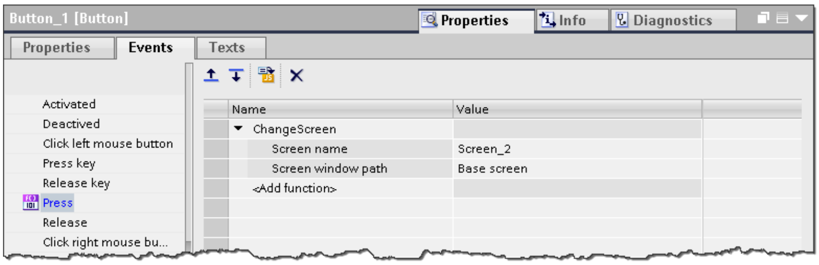

Button_1 [Button]
Properties
Info
Diagnostics
Properties
Animations
Events
Texts
Click
Press
Release
Activate
Deactivate
Change

ActivateScreen	
Screen name	Screen_2
Object number	0
<Add function>	

WinCC Unified

In WinCC Unified, a screen change is effected with the help of the system function "ChangeScreen".

Figure 3-4


Button_1 [Button]
Properties
Info
Diagnostics
Properties
Events
Texts
Activated
Deactived
Click left mouse button
Press key
Release key
Press
Release
Click right mouse bu...

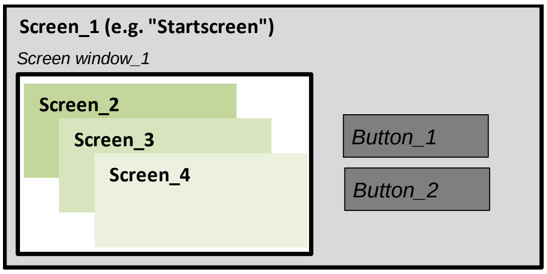
Name	Value
ChangeScreen	
Screen name	Screen_2
Screen window path	Base screen
<Add function>	

Due to the screen window technology in WinCC Unified, the system function parameters differ depending on which screen hierarchy you implemented.

Example 1: Configuration with one screen window

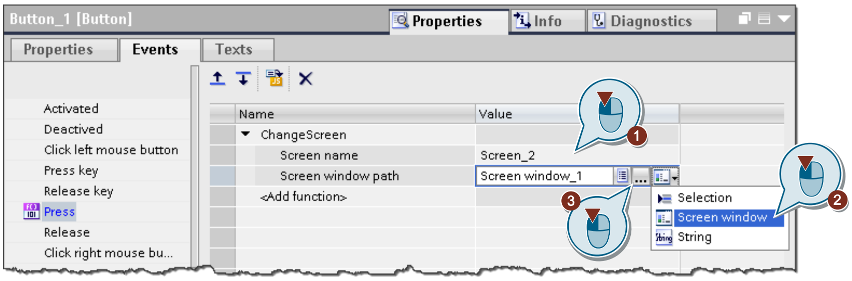
In this example, the Start screen contains a window, "Screen window_1". The aim is to make the screen "Screen_2" appear in the screen window using the button "Button_1".

Figure 3-5


Screen_1 (e.g. "Startscreen")
Screen window_1
Screen_2
Screen_3
Screen_4
Button_1
Button_2

You can change the input type to "Screen window" at the "Screen window path" ["Pfad Bildfenster"] parameter of the system function "ChangeScreen" (2). Then you can select the screen window "Screen window_1" using the context menu.

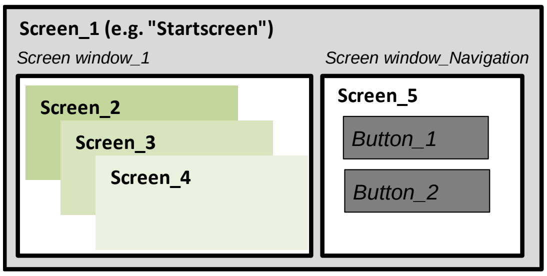
Figure 3-6


Button_1 [Button]
Properties
Info
Diagnostics
Properties
Events
Texts
Activated
Deactived
Click left mouse button
Press key
Release key
Press
Release
Click right mouse bu...
Name
Value
ChangeScreen
Screen name
Screen_2
Screen window path
Screen window_1
<Add function>
Selection
Screen window
String
1
2
3

Example 2: Configuration with 2 navigation screen windows

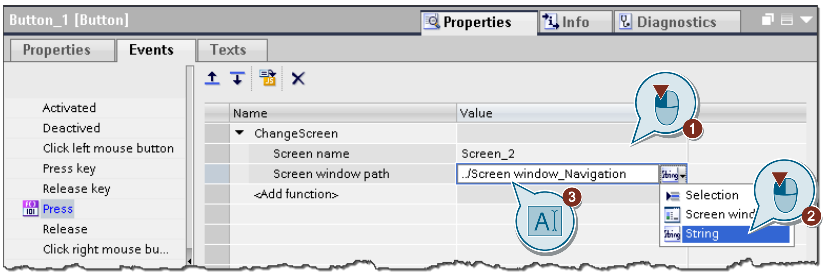
In the second example, the Start screen contains two windows, "Screen window_1" and "Screen window_Navigation". The "Screen window_Navigation" window displays the screen "Screen_Navigation", which contains the button "Button_1". When this button is pressed, the screen "Screen_2" should appear in the window "Screen window_1".

Figure 3-7


Screen_1 (e.g. "Startscreen")
Screen window_1
Screen window_Navigation
Screen_2
Screen_3
Screen_4
Screen_5
Button_1
Button_2

In this case, you must change the input type to "String" at the parameter "Screen window path" (2). Then you can manually enter the object path.

Figure 3-8


Button_1 [Button]
Properties
Info
Diagnostics
Properties
Events
Texts
Activated
Deactived
Click left mouse button
Press key
Release key
Press
Release
Click right mouse bu...
Name
Value
<Add function>
Selection
Screen wind
String
1
2
3

ChangeScreen
Screen name: Screen_2
Screen window path: ../Screen window_Navigation

Note

> To understand how the object path is composed, please refer to the "System manual – SIMATIC WinCC WinCC Engineering V16 – Runtime Unified" in the chapter entitled *"FindItem" method* under the heading "Formulation of the object path".
>
> https://support.industry.siemens.com/cs/ww/en/view/109773780/112604171019

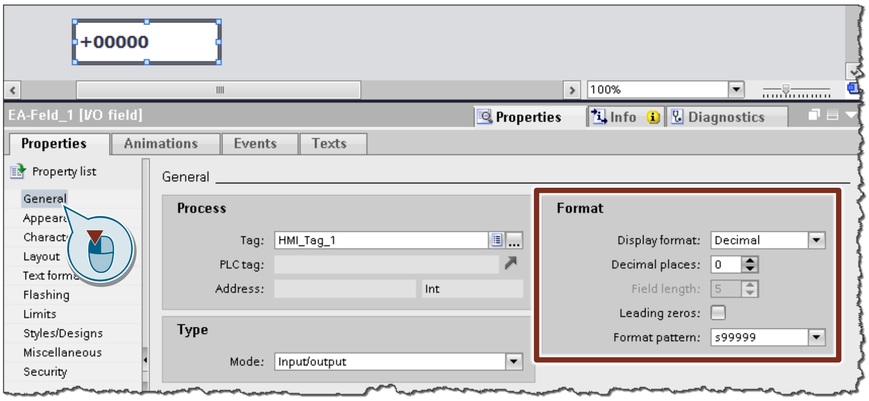
3.3.4 Configuring output format and units

You can usually visualize tag values with input/output fields (IO fields). For better readability, you can change the format as well as the unit.

Configuring output format and units in WinCC Comfort/Advanced

In order to adjust the format of the IO field in WinCC Comfort/Advanced, you have access to multiple options under "Properties > General" in the "Format" section.

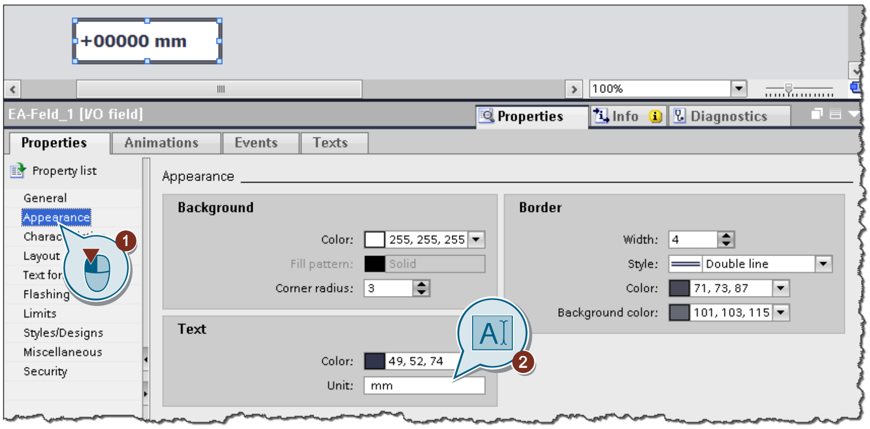
Figure 3-9


+00000
100%
EA-Feld_1 [I/O field]
Properties
Info
Diagnostics
Properties
Animations
Events
Texts
Property list
General
Appeara
Characte
Layout
Text forma
Flashing
Limits
Styles/Designs
Miscellaneous
Security
General
Process
Type
Format

Tag: HMI_Tag_1
PLC tag:
Address: Int
Mode: Input/output
Display format: Decimal
Decimal places: 0
Field length: 5
Leading zeros: ☐
Format pattern: s99999

In order to add a unit to the process value, click in the area navigation on "Appearance" and then enter the appropriate unit, such as "mm", in the "Unit" field.

Figure 3-10


+00000 mm
100%
EA-Feld_1 [I/O field]
Properties
Info
Diagnostics
Properties
Animations
Events
Texts
Property list
General
Appearance
Charac...
Layout
Text for...
Flashing
Limits
Styles/Designs
Miscellaneous
Security
Appearance
Background
Border
Text
1
2

Background
Color: 255, 255, 255
Fill pattern: Solid
Corner radius: 3

Text
Color: 49, 52, 74
Unit: mm

Border
Width: 4
Style: Double line
Color: 71, 73, 87
Background color: 101, 103, 115

Note Both the output format and the unit will be applied directly to the IO field.

Configuring output format and units in WinCC Unified

In WinCC Unified, both the format and the unit are configured with the property "Output format".

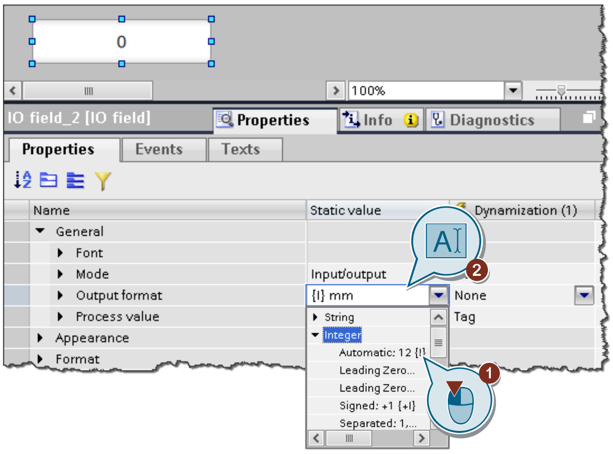
1. To achieve this, open the "Properties" of the IO field and select the appropriate format from the dropdown list.

   Note In order to select the units from the dropdown list, you need STEP 7 / WinCC V16 Update 1:

   https://support.industry.siemens.com/cs/ww/en/view/109775861

2. You will then modify the unit behind the format.

Figure 3-11


0
100%
IO field_2 [IO field]
Properties
Info
Diagnostics
Properties
Events
Texts
Name
Static value
Dynamization (1)
General
Font
Mode
Output format
Process value
Appearance
Format
String
Integer
Automatic: 12 {I}
Leading Zero...
Leading Zero...
Signed: +1 {+I}
Separated: 1,...
1
2

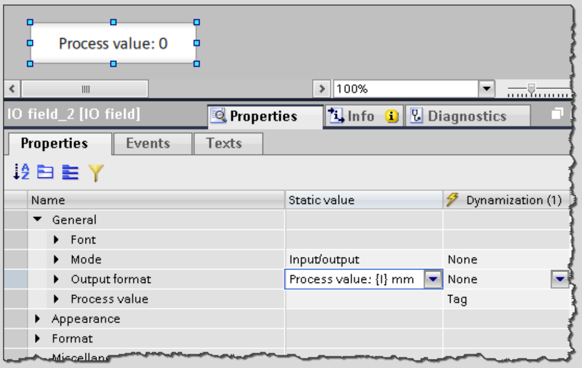
Mode: Input/output
Output format: {I} mm — None
Process value: Tag

Note The unit of the IO field will not be shown in the Engineering stage, rather it will only appear in the runtime (TIA Portal V16 Update 2 and later).

The units are language-independent (the same unit appears in all languages). If you want to change the units depending on the language, you will need an additional text field or a text list that you fill with the different language variants.

Note

Besides the format and unit, you can also enter other text in this field. This enables you to combine text and a process value in one object.


Process value: 0
100%
IO field_2 [IO field]
Properties
Info
Diagnostics
Properties
Events
Texts

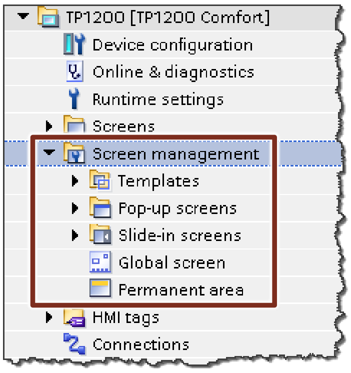
Name	Static value	Dynamization (1)
General		
Font		
Mode	Input/output	None
Output format	Process value: {I} mm	None
Process value		Tag
Appearance		
Format		

3.4 Configuring "Screen management"

The "Screen management" folder in WinCC Comfort/Advanced contains the following elements:

- "Templates"
- "Pop-up screens"
- "Slide-in screens"
- "Global screen"
- "Permanent area"

Figure 3-12

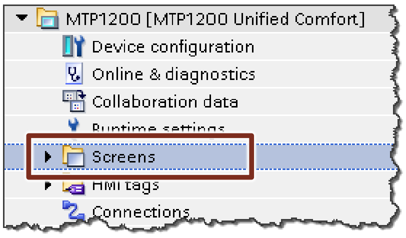


TP1200 [TP1200 Comfort]
- Device configuration
- Online & diagnostics
- Runtime settings
- Screens
- Screen management
  - Templates
  - Pop-up screens
  - Slide-in screens
  - Global screen
  - Permanent area
- HMI tags
- Connections

Screen management elements in WinCC Unified

In WinCC Unified, these elements are all configured in the "Screens" folder and displayed as appropriate through screen windows or system functions.

Figure 3-13



MTP1200 [MTP1200 Unified Comfort]
- Device configuration
- Online & diagnostics
- Collaboration data
- Runtime settings
- Screens
- HMI tags
- Connections

In chapters 3.4.1-3.4.5 below, each element of the Screen management will be examined and their implementation in WinCC Unified will be described in detail.

3.4.1 Configuring "Templates"

In a template, you configure objects that are displayed in all screens that are based on this template.

Brief overview

The following table shows you the essential differences between the two systems. Detailed descriptions will follow under each of the headers in this chapter.

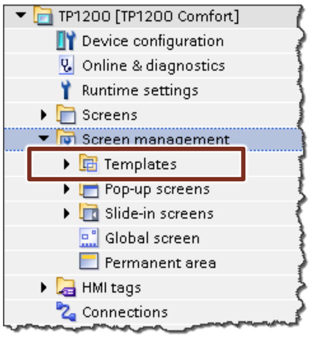
Table 3-9

Description	Comfort Panel	Unified Comfort Panel
Editor for configuration	"Templates"	"Screens"
Screen layout determined by	Template assigned to screen (via the screen properties)	Screen laid out with windows or with dynamic show/hide for windows
Template is modular	No	Yes
Template dynamically modifiable for each screen	No or, a new template is required each time	Yes Screen windows with template elements shown/hidden

Templates in WinCC Comfort/Advanced

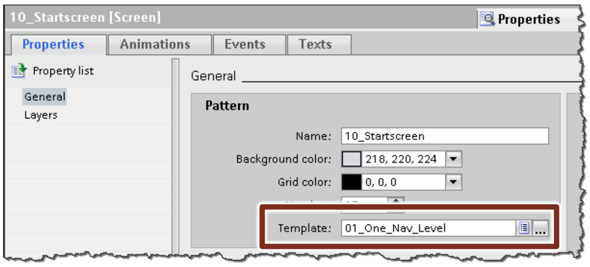
In WinCC Comfort/Advanced, you created and configured "Templates" in folders of the same name.

Figure 3-14


TP1200 [TP1200 Comfort]
Device configuration
Online & diagnostics
Runtime settings
Screens
Screen management
Templates
Pop-up screens
Slide-in screens
Global screen
Permanent area
HMI tags
Connections

You were then able to assign a template to each process screen.

Figure 3-15


10_Startscreen [Screen]
Properties
Properties
Animations
Events
Texts
Property list
General
Layers
General
Pattern

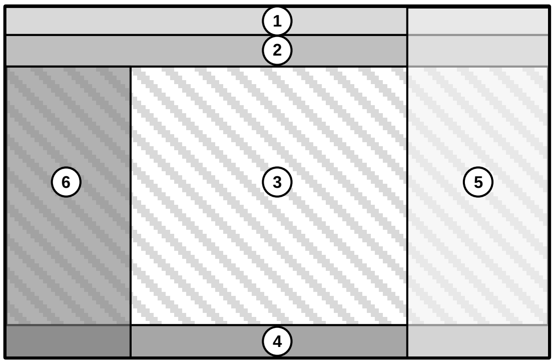
Name: 10_Startscreen
Background color: 218, 220, 224
Grid color: 0, 0, 0
Template: 01_One_Nav_Level

Templates in WinCC Unified

In WinCC Unified, you will create templates by structuring a screen (such as the Start screen) with multiple windows and thus define your screen layout. Within the windows, you can show screens and change them.

One possible screen layout with screen windows could, for instance, consist of six different windows.

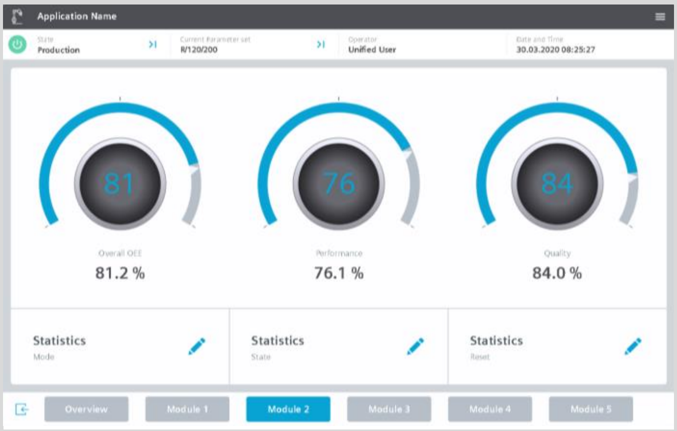
Figure 3-16, Start screen layout with 6 windows



①	Title bar	④	MainNavigation (first navigation level as slide-in)
②	Status bar	⑤	Subnavigation (second navigation level)
③	MainWindow (application area)	⑥	Third-level navigation (third navigation level)

Note Further information on the screen layout shown can be found in the application example "HMI Design with the HMI Template Suite" in the WinCC Unified documentation:

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



State: Production
Current Parameter set: R/120/200
Operator: Unified User
Date and Time: 30.03.2020 08:25:27

Overall OEE: 81.2 %
Performance: 76.1 %
Quality: 84.0 %

Statistics – Mode
Statistics – State
Statistics – Reset

Depending on how complex your plant visualization is, the number of windows will vary. You can show/hide these dynamically with the runtime.

Note Additional information on screen windows and how to handle them can be found in the system manual "WinCC Engineering V16 – Runtime Unified" in the "Screen window" chapter:
https://support.industry.siemens.com/cs/ww/en/view/109773780/124352541835

and in the chapter entitled "Basics of Screens":
https://support.industry.siemens.com/cs/ww/en/view/109773780/129673369483

3.4.2 Configuring "Pop-up screens"

Using a pop-up screen, you can configure content that can be displayed in addition to a process screen. The pop-up screen will always be shown in the foreground (over the process screen).

Brief overview

The following table shows you the essential differences between the two systems. Detailed descriptions will follow under each of the headers in this chapter.

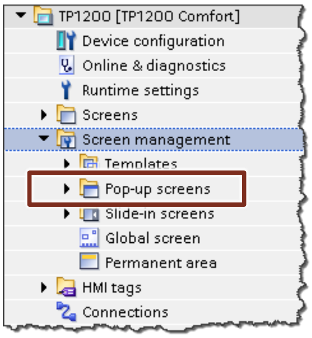
Table 3-10

Description	Comfort Panel	Unified Comfort Panel
Editor for configuration	"Pop-up screens" ("Pop-up Screens")	"Screens"
Launching the pop-up	System function "ShowPopupScreen" - Display mode: On	System function "OpenScreenInPopup"
Closing the pop-up	System function "ShowPopupScreen" - Display mode: Off	System function "ClosePopup" or System function "OpenScreenInPopup" and parameter "Close if opened: True"
Screen objects addressable in the pop-up screen, e.g. with a script	No	Yes
Pop-up can be moved	No	Yes

Pop-ups in WinCC Comfort/Advanced

In WinCC Comfort/Advanced, you created and configured "Pop-up screens" in the folder of the same name in the Project tree.

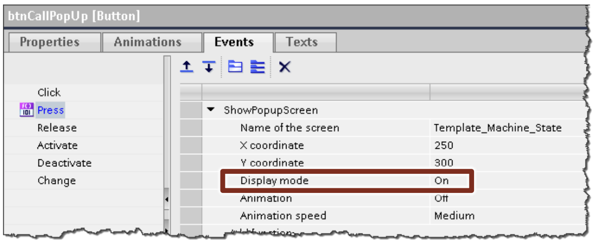
Figure 3-17


TP1200 [TP1200 Comfort]
Device configuration
Online & diagnostics
Runtime settings
Screens
Screen management
Templates
Pop-up screens
Slide-in screens
Global screen
Permanent area
HMI tags
Connections

Show/hide pop-up

The pop-up screen that you created can be shown/hidden with the system function "ShowPopupScreen" and the parameter "Display mode".

Figure 3-18


btnCallPopUp [Button]
Properties
Animations
Events
Texts
Click
Press
Release
Activate
Deactivate
Change
<Add function>

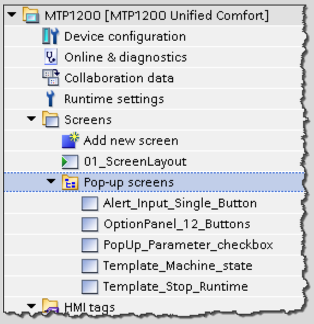
ShowPopupScreen	
Name of the screen	Template_Machine_State
X coordinate	250
Y coordinate	300
Display mode	On
Animation	Off
Animation speed	Medium

Pop-ups in WinCC Unified

In WinCC Unified, pop-up images are created in the same manner as normal process screens and called up on the screen as "PopupScreenWindow".

Note

In order to better separate the pop-up screens from the process screens in the future, it is recommended to store them in a separate folder inside of "Screens".


MTP1200 [MTP1200 Unified Comfort]
Device configuration
Online & diagnostics
Collaboration data
Runtime settings
Screens
Add new screen
01_ScreenLayout
Pop-up screens
Alert_Input_Single_Button
OptionPanel_12_Buttons
PopUp_Parameter_checkbox
Template_Machine_state
Template_Stop_Runtime
HMI tags

As an option, you can also name the pop-up screens with the prefix "Popup_".

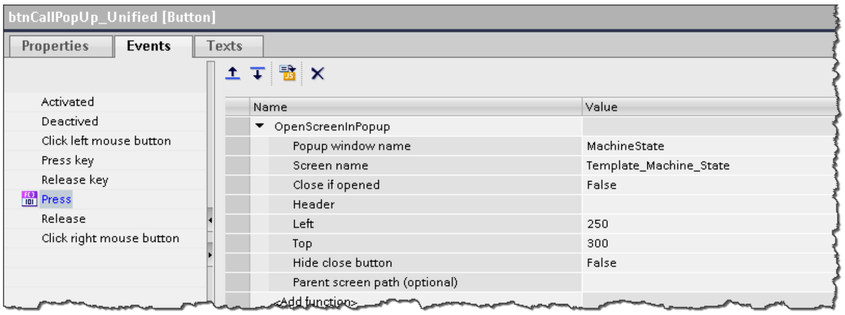
In actual terms, follow these steps:

1. Add a new screen in the "Screens" folder in your Unified HMI device.
2. Adjust the "height" and "width" properties of the screen.
3. Configure all necessary elements to be displayed in the pop-up screen.

Showing a pop-up

You can show the screen you created using the system function "OpenScreenInPopup".

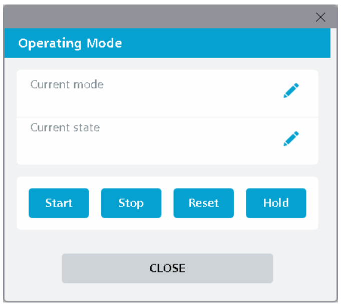
Figure 3-19


btnCallPopUp_Unified [Button]
Properties
Events
Texts
Activated
Deactived
Click left mouse button
Press key
Release key
Press
Release
Click right mouse button
<Add function>

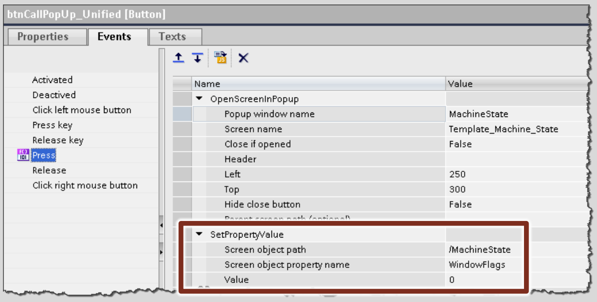
Name	Value
OpenScreenInPopup	
Popup window name	MachineState
Screen name	Template_Machine_State
Close if opened	False
Header	
Left	250
Top	300
Hide close button	False
Parent screen path (optional)	

In the runtime, the screen appears as a pop-up as "PopupScreenWindow" after the trigger is activated (here, by pressing the button). By default, each "PopupScreenWindow" has a gray border and a header.

Figure 3-20, pop-up in the runtime


Operating Mode
Current mode
Current state
Start
Stop
Reset
Hold
CLOSE

Note If you want to show the "PopupScreenWindow" without a border or header, you can set the "Window settings" properties with the system function "SetPropertyValue".

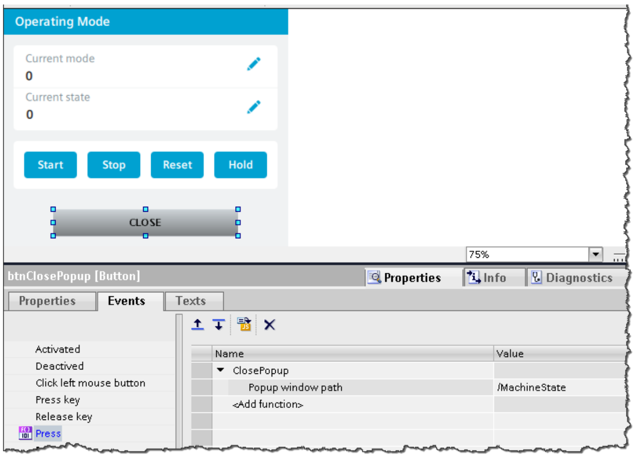

btnCallPopUp_Unified [Button]
Properties
Events
Texts
Activated
Deactived
Click left mouse button
Press key
Release key
Press
Release
Click right mouse button

Name	Value
OpenScreenInPopup	
Popup window name	MachineState
Screen name	Template_Machine_State
Close if opened	False
Header	
Left	250
Top	300
Hide close button	False
SetPropertyValue	
Screen object path	/MachineState
Screen object property name	WindowFlags
Value	0

Closing a pop-up

You have three options for closing the pop-up again:

1. using the "Close" button in the header of the "PopupScreenWindow"
2. pressing the button to launch the pop-up a second time, by setting the parameter "Close if opened:" to "True" in the system function "OpenScreenInPopup".
3. with the system function "ClosePopup".


Operating Mode
Start
Stop
Reset
Hold
CLOSE
75%
btnClosePopup [Button]
Properties
Info
Diagnostics
Properties
Events
Texts
Activated
Deactived
Click left mouse button
Press key
Release key
Press

Current mode 0

Current state 0

Name	Value
ClosePopup	
Popup window path	/MachineState
<Add function>	

Note The parameter for "Popup window path" is composed of the "/" (reference to the user's window) and the name of the pop-up windows that you specify when opening the pop-up with "OpenScreenInPopup".

Note

For further information, refer to the "System manual - SIMATIC WinCC WinCC Engineering V16 - Runtime Unified" under:

"OpenScreenInPopup" system functions
https://support.industry.siemens.com/cs/ww/en/view/109773780/129018860555

"ClosePopup" system functions:
https://support.industry.siemens.com/cs/ww/en/view/109773780/129018870155

"SetPropertyValue" system functions:
https://support.industry.siemens.com/cs/ww/en/view/109773780/122556599563

"PopupScreenWindow" object:
https://support.industry.siemens.com/cs/ww/en/view/109773780/118460062347

3.4.3 Configuring slide-in screens

The "Slide-in screen" object facilitates rapid navigation between the Start screen and other screens where other content is placed.

Brief overview

The following table shows you the essential differences between the two systems. Detailed descriptions will follow under each of the headers in this chapter.

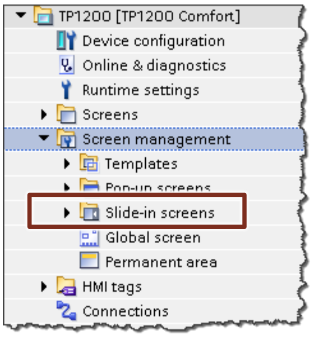
Table 3-11

Description	Comfort Panel	Unified Comfort Panel
Editor for configuration	"Slide-in screens" ("Slide-in Screens")	"Screens"
Launching the slide-in	Slide-in handle or system function "ShowSlideInScreen" - Mode: On	Make screen window visible ("Visibility" property)
Closing the slide-in	Automatically, or system function "ShowSlideInScreen" - Mode: Off	Hide screen window ("Visibility" property)
Animation possible	Yes	No
Number	4 (one slide-in per screen edge)	any

Slide-in screens in WinCC Comfort/Advanced

In WinCC Comfort/Advanced, slide-in screens were activated and configured in the folder "Slide-in screens".

Figure 3-21

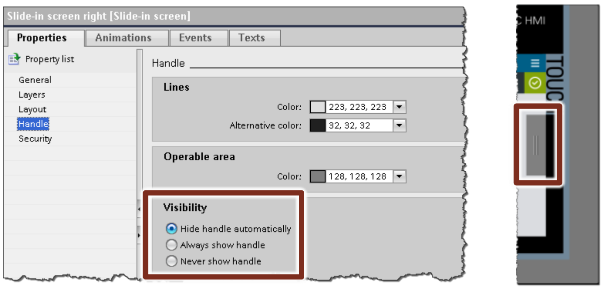

TP1200 [TP1200 Comfort]
Device configuration
Online & diagnostics
Runtime settings
Screens
Screen management
Templates
Pop-up screens
Slide-in screens
Global screen
Permanent area
HMI tags
Connections

Show/hide slide-in screen

You have two ways to show/hide the configured slide-in screen in your process visualization:

1. Show/hide slide-in screen using handle

Figure 3-22, Handle in Engineering and runtime


Slide-in screen right [Slide-in screen]
Properties
Animations
Events
Texts
Property list
General
Layers
Layout
Handle
Security
HMI
TOUC

Handle

Lines

Color: 223, 223, 223

Alternative color: 32, 32, 32

Operable area

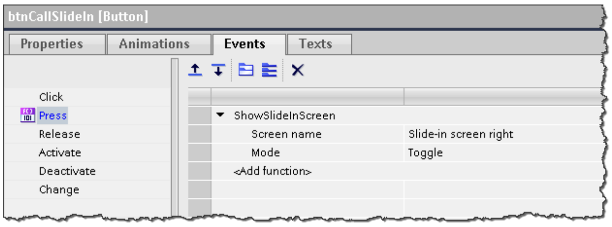
Color: 128, 128, 128

Visibility

● Hide handle automatically
○ Always show handle
○ Never show handle

2. Show/hide slide-in screen using system function "ShowSlideInScreen"

Figure 3-23

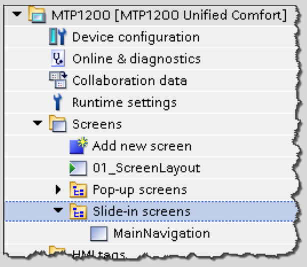

btnCallSlideIn [Button]
Properties
Animations
Events
Texts
Click
Press
Release
Activate
Deactivate
Change
<Add function>

ShowSlideInScreen	
Screen name	Slide-in screen right
Mode	Toggle

Slide-in screens in WinCC Unified

In WinCC Unified, slide-in screens are created in the same way as normal process screens and made to appear via a separate screen window.

Note In order to better separate the slide-in screens from the process screens in the future, it is recommended to store them in a separate folder inside of "Screens".


MTP1200 [MTP1200 Unified Comfort]
Device configuration
Online & diagnostics
Collaboration data
Runtime settings
Screens
Add new screen
01_ScreenLayout
Pop-up screens
Slide-in screens
MainNavigation
HMI tags

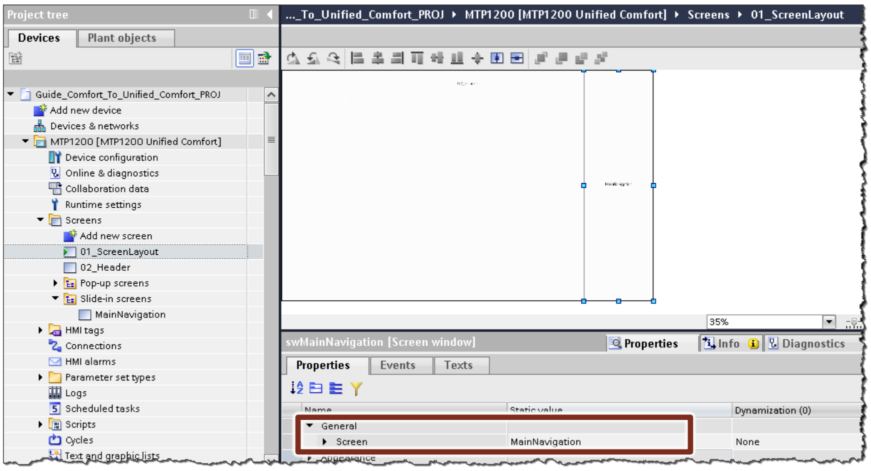
As an option, you can also name the slide-in screens with the prefix "Slide-in_".

Note Animating the screen window, such as flying in from the right, is not possible using the standard functions of WinCC Unified.
As an option, the position of the window can be changed with a script and a timer.

In actual terms, follow these steps:

1. In your Unified operator device in the "Screens" folder, add a new screen and rename it (e.g. to "MainNavigation").
2. Adjust the "height" and "width" properties of the screen.
3. Configure all the necessary elements that will appear in the slide-in screen.
4. Add a window to your process screen and enter the name of the slide-in screen (e.g. "MainNavigation") in "Properties > General > Screen".

Figure 3-24

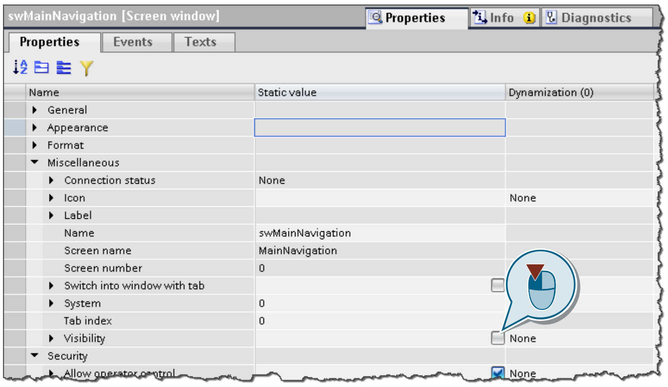

Project tree
Devices
Plant objects
Guide_Comfort_To_Unified_Comfort_PROJ
Add new device
Devices & networks
MTP1200 [MTP1200 Unified Comfort]
Device configuration
Online & diagnostics
Collaboration data
Runtime settings
Screens
Add new screen
01_ScreenLayout
02_Header
Pop-up screens
Slide-in screens
MainNavigation
HMI tags
Connections
HMI alarms
Parameter set types
Logs
Scheduled tasks
Scripts
Cycles
Text and graphic lists
..._To_Unified_Comfort_PROJ ▸ MTP1200 [MTP1200 Unified Comfort] ▸ Screens ▸ 01_ScreenLayout
35%
Properties
Info
Diagnostics
Events
Texts

swMainNavigation [Screen window]

Name	Static value	Dynamization (0)
General		
Screen	MainNavigation	None
Appearance		

5. Uncheck the check box for the window property "Visibility".

Figure 3-25


Properties
Info
Diagnostics
Events
Texts

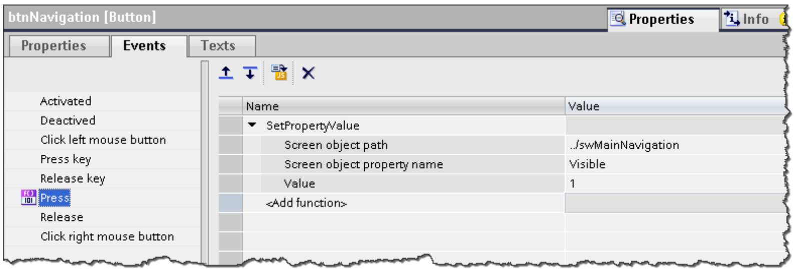
swMainNavigation [Screen window]

Name	Static value	Dynamization (0)
General		
Appearance		
Format		
Miscellaneous		
Connection status	None	
Icon		None
Label		
Name	swMainNavigation	
Screen name	MainNavigation	
Screen number	0	
Switch into window with tab	☐	
System	0	
Tab index	0	
Visibility	☐	None
Security		
Allow operator control	☑	None

Show screen window

You have three ways of making the screen window (with slide-in screen) appear:

1. Show screen window with system function (recommended)


Properties
Info
Events
Texts
Activated
Deactived
Click left mouse button
Press key
Release key
Press
Release
Click right mouse button

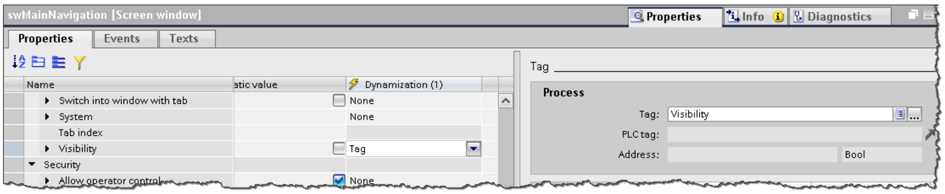
btnNavigation [Button]

Name	Value
SetPropertyValue	
Screen object path	../swMainNavigation
Screen object property name	Visible
Value	1
<Add function>	

2. Screen window with script (recommended)

```
Screen.FindItem('../swMainNavigation').Visible = true;
```

3. Screen window with tag (not recommended)



Name	atic value	Dynamization (1)
Switch into window with tab		☐ None
System		None
Tab index		
Visibility		☐ Tag
Security		
Allow operator control		☑ None

Tag

Process

Tag: Visibility
PLC tag:
Address: Bool

Hide screen window

In order to hide the screen window again, the "Visible" property is set back to "false" as soon as, for example, a button in the slide-in screen is pressed.

Note If you wish to show/hide the "screen window" using the system function as well as the script, the object path will be needed (here, in the example it is "../swMainNavigation").

A detailed description of the object path can be found in chapter 3.3.3.

3.4.4 Configuring "Global screens"

For all screens of an operator device you will define global elements, independently of the template being used.

Brief overview

The following table shows you the essential differences between the two systems. Detailed descriptions will follow under each of the headers in this chapter.

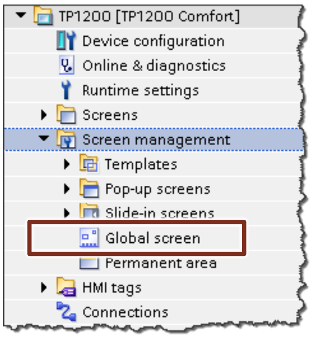
Table 3-12

Description	Comfort Panel	Unified Comfort Panel
Editor for configuration	"Global screen"	"Screens"
Configurable elements	"System diagnostics window" "Alarm window" "Alarm indicator"	All screen objects are available
Display sequence	Elements of the global screen are displayed before/in front of all other elements	Elements can be configured in the foreground using screen levels
Visibility	Configurable using control properties	Configurable using element property "Visibility"

Global screen in WinCC Comfort/Advanced

You can configure the global screen in the Editor of the same name in the "Screen management" folder.

Figure 3-26

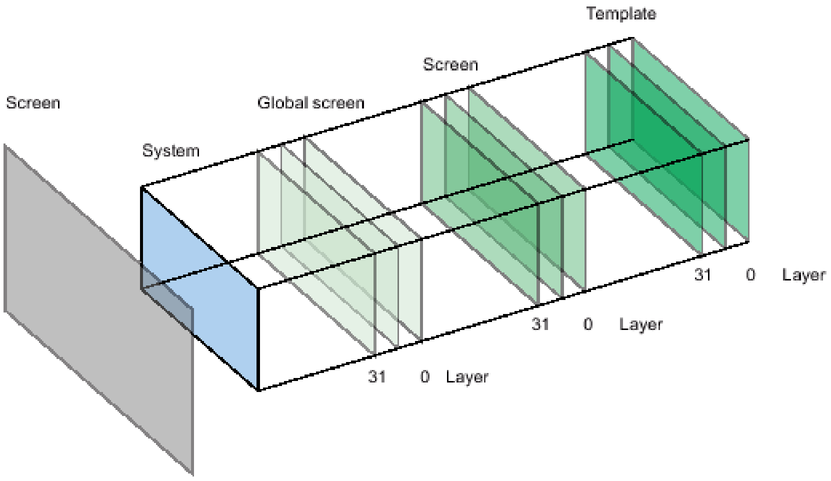


TP1200 [TP1200 Comfort]
Device configuration
Online & diagnostics
Runtime settings
Screens
Screen management
Templates
Pop-up screens
Slide-in screens
Global screen
Permanent area
HMI tags
Connections

Screen structure

Here, the content of the global screen is always in front of the content of the process screen and the configured templates.

Figure 3-27



Template
Screen
Screen
Global screen
System
31
0
Layer
31
0
Layer
31
0
Layer

Configurable screen objects

You can configure only the following three controls in the global screen:

- "System diagnostics window"
- "Alarm window"
- "Alarm indicator"

Visibility

You can use the properties of the control to determine when that control is displayed.

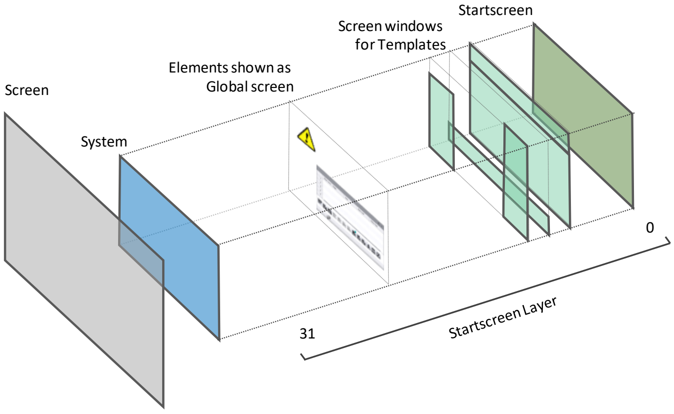
Global screen in WinCC Unified

In WinCC Unified, you will use screen levels in your Start screen to configure content that is independent of the templates being used.

Screen structure

In a screen structure with multiple windows, as described above in chapter 3.4.1, you can configure the screen objects in higher screen levels to be displayed in front of all other screen content.

Figure 3-28



Configurable screen objects

The Editor for configuring the "Global screen" content is the same one used to create process visualizations. In this manner, all screen objects are available to you.

Visibility

You can use the screen object property "Visibility" to determine when the screen objects will be shown/hidden. You accomplish this by setting/resetting the property once a condition is met (e.g. tag value =1).

3.4.5 Configuring the "Permanent area"

In the Permanent area you will configure objects that are visible in all screens.

Brief overview

The following table shows you the essential differences between the two systems. Detailed descriptions will follow under each of the headers in this chapter.

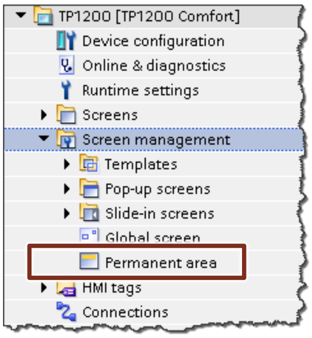
Table 3-13

Description	Comfort Panel	Unified Comfort Panel
Editor for configuration	"Permanent area"	"Screens"
Appearance on screen	Separate area in the screen	Screen window in the screen
Permanent area configurable/movable	Only configurable with respect to height	Freely configurable/movable
Screen objects can be shifted in the event of a change	Automatically	Automatically (adjust screen in screen window) or manually

Permanent area in WinCC Comfort/Advanced

In WinCC Comfort/Advanced, the Permanent area is configured in the Editor of the same name in the "Screen management" folder.

Figure 3-29


TP1200 [TP1200 Comfort]
Device configuration
Online & diagnostics
Runtime settings
Screens
Screen management
Templates
Pop-up screens
Slide-in screens
Global screen
Permanent area
HMI tags
Connections

Once you set the height of the Permanent area to be greater than 0 pixels, all screens and templates on your operator device will be reduced by the height of the Permanent area.

Configurability

The position of the Permanent area and its width are not configurable.

If the size of the Permanent area changes, already configured screen objects are shifted by the height of the change.

Permanent area in WinCC Unified

If you likewise need a Permanent area in WinCC Unified, you can implement it with a "Screen window".

You can take this into account in the screen layout (see Figure 3-16). In this way, for example, "Title and status bar" can be seen as a Permanent area.

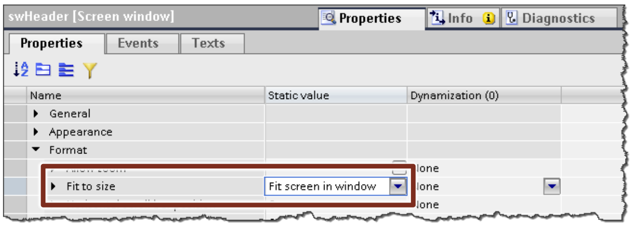
Configurability

You can configure the screen window freely with regard to height and width as well as its position in the screen.

There are 2 options when the size of the screen for Permanent area changes:

1. Screen automatically adjusts to the screen window using the property of the screen window

   Figure 3-30

   
   swHeader [Screen window]
Properties
Info
Diagnostics
Properties
Events
Texts
Name
Static value
Dynamization (0)
General
Appearance
Format

   Fit to size: Fit screen in window

2. Manually adjust the other screen contents to match the new size

3.5 "HMI tags"

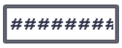
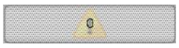
Using tags, process values from your automation system are operated on and visualized in your HMI device.

Note You can use the "Data2Unified" add-in to convert at least some of your existing configured tags to WinCC Unified (see chapter 5.2).

Scope of functions with WinCC Comfort/Advanced or Unified

The following table shows you the functionality of both systems in a direct comparison:

Table 3-14

Description	Comfort Panel	Unified Comfort Panel
Number of tags (internal and external) in the project	1024 (4" devices) 2048 (7"-12" devices) 4096 (15" devices and up)	8000
Number of elements per array	1000	1600
Number of local tags	500 (4" devices) 1000 (7"-12" devices) 2000 (15" devices and up)	8000
Number of structures	999	1000
Number of structure elements	400	1600
Number of tags per screen	400	600 (7"-12" devices) 800 (15" devices and up)
Appearance when connection in IO field is broken		
Multiplexing		
Address multiplexing	●	-
Index multiplexing	●	
Tag multiplexing	●	-
Indirect addressing (direct at the place of use)	-	●
Manner in which external tags are recorded		
"On demand"	●	
"Cyclic in operation"	●	
"Cyclic continuous"	●	-

3.5.1 Data types

Depending on whether you use internal tags (no process connection) or external tags (with process connection), you have access to different data types.

Internal tags

Table 3-15

<table>
<tr><th>Description</th><th>Comfort Panel</th><th>Unified Comfort Panel</th></tr>
<tr><td colspan="3">Binary numbers</td></tr>
<tr><td>Bool</td><td colspan="2">●</td></tr>
<tr><td>Byte</td><td>-</td><td>●</td></tr>
<tr><td>Word</td><td>-</td><td>●</td></tr>
<tr><td>DWord</td><td>-</td><td>●</td></tr>
<tr><td>LWord</td><td>-</td><td>●</td></tr>
<tr><td colspan="3">Times</td></tr>
<tr><td>DateTime</td><td colspan="2">●</td></tr>
<tr><td>LTime</td><td>-</td><td>●</td></tr>
<tr><td colspan="3">Integers</td></tr>
<tr><td>Int</td><td colspan="2">●</td></tr>
<tr><td>DInt</td><td colspan="2">●</td></tr>
<tr><td>LInt</td><td>-</td><td>●</td></tr>
<tr><td>SInt</td><td colspan="2">●</td></tr>
<tr><td>UInt</td><td colspan="2">●</td></tr>
<tr><td>UDInt</td><td colspan="2">●</td></tr>
<tr><td>ULint</td><td>-</td><td>●</td></tr>
<tr><td>USInt</td><td colspan="2">●</td></tr>
<tr><td colspan="3">Floating-point number</td></tr>
<tr><td>Real</td><td colspan="2">●</td></tr>
<tr><td>LReal</td><td colspan="2">●</td></tr>
<tr><td colspan="3">Character</td></tr>
<tr><td>WChar</td><td>-</td><td>●</td></tr>
<tr><td>WString</td><td colspan="2">●</td></tr>
<tr><td colspan="3">Data structure</td></tr>
<tr><td>Array</td><td colspan="2">●</td></tr>
<tr><td>UDT</td><td colspan="2">●</td></tr>
</table>

External tags

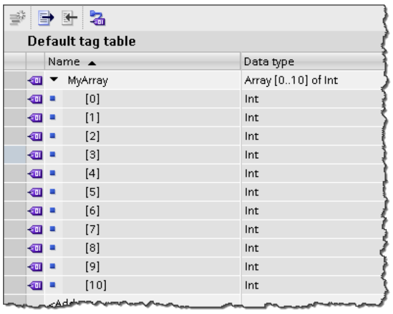
The data types for tags can vary depending on communication driver. For a detailed overview of which data types are supported by which communication driver, refer to the manual under:

- WinCC Comfort/Advanced V16: "Data types"
  https://support.industry.siemens.com/cs/ww/en/view/109773506/76838977163
- WinCC Unified V16: "Data types"
  https://support.industry.siemens.com/cs/ww/en/view/109773780/127571779339

3.5.2 Tag counting

The number of tags you will use in your project will be different due to the difference in how tags are counted with a Comfort Panel or a Unified Comfort Panel.

Table 3-16

Description	Comfort Panel	Unified Comfort Panel
General description	An array is counted as a tag, regardless of the number of array elements	Each array element and the array tag itself are counted as tags.
Example array		
Number of tags in the example array	1	12

Default tag table

Name	Data type
MyArray	Array [0..10] of Int
[0]	Int
[1]	Int
[2]	Int
[3]	Int
[4]	Int
[5]	Int
[6]	Int
[7]	Int
[8]	Int
[9]	Int
[10]	Int

3.5.3 Configuring events to tags

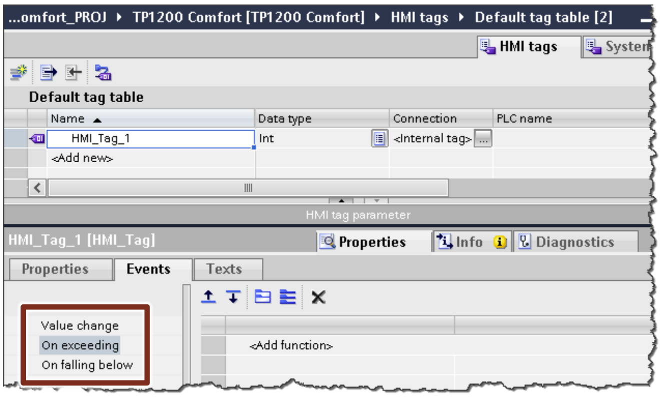
You can use the values of tags as the triggering event for an action in the runtime. To achieve this, you can configure "Events" that will be executed when the condition is met.

WinCC Comfort/Advanced

In WinCC Comfort/Advanced, each configured tag has the following three "Events":

- "Value change"
- "On exceeding"
- "On falling below"

Figure 3-31



...omfort_PROJ ▸ TP1200 Comfort [TP1200 Comfort] ▸ HMI tags ▸ Default tag table [2]

Default tag table

Name	Data type	Connection	PLC name
HMI_Tag_1	Int	<Internal tag>	
<Add new>			

HMI_Tag_1 [HMI_Tag]

HMI tags
System
HMI tag parameter
Properties
Info
Diagnostics
Properties
Events
Texts
Value change
On exceeding
On falling below
<Add function>

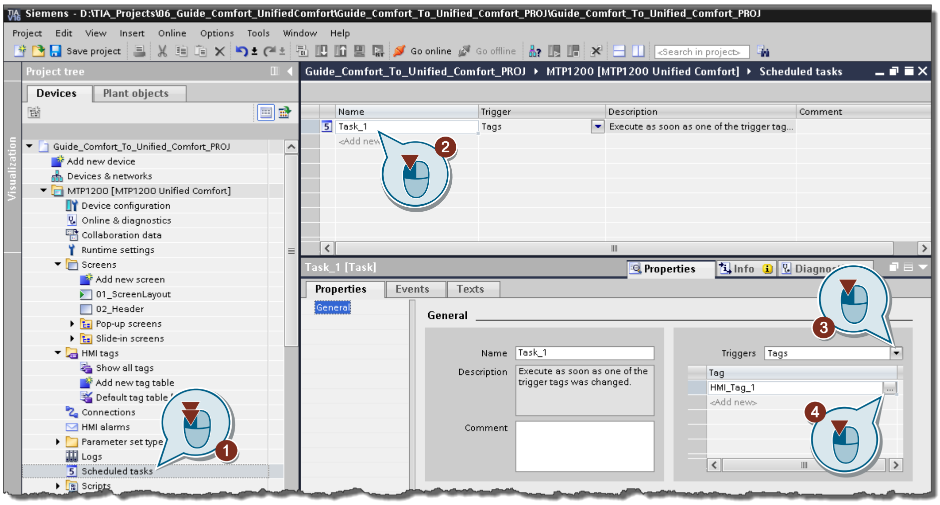
WinCC Unified

In WinCC Unified, you will configure "Events" for tags in the "Scheduled tasks".

To do this, proceed as follows:

1. **Adding task with trigger**
   - Open "Scheduled tasks" in the "Project tree" (1).
   - Add a new "Task" (2).
   - For trigger, select "Tags" (3).
   - Then select the tag which, when changed, will trigger the event (4).

Figure 3-32


Siemens - D:\TIA_Projects\06_Guide_Comfort_UnifiedComfort\Guide_Comfort_To_Unified_Comfort_PROJ\Guide_Comfort_To_Unified_Comfort_PROJ
Project tree
Devices
Plant objects
Guide_Comfort_To_Unified_Comfort_PROJ
Add new device
Devices & networks
MTP1200 [MTP1200 Unified Comfort]
Device configuration
Online & diagnostics
Collaboration data
Runtime settings
Screens
Add new screen
01_ScreenLayout
02_Header
Pop-up screens
Slide-in screens
HMI tags
Show all tags
Add new tag table
Default tag table
Connections
HMI alarms
Parameter set types
Logs
Scheduled tasks
Scripts
Guide_Comfort_To_Unified_Comfort_PROJ ▸ MTP1200 [MTP1200 Unified Comfort] ▸ Scheduled tasks
Task_1 [Task]
Properties
Info
Diagnostics
Events
Texts
General
1
2
3
4

Name	Trigger	Description	Comment
Task_1	Tags	Execute as soon as one of the trigger tag...	
<Add new>			

General

Name: Task_1

Description: Execute as soon as one of the trigger tags was changed.

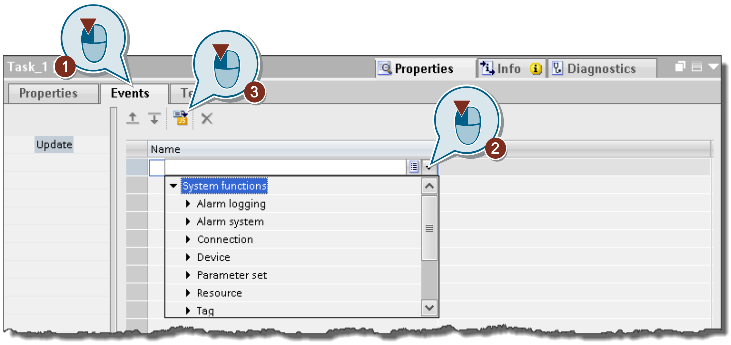
Comment:

Triggers: Tags

Tag
HMI_Tag_1
<Add new>

2. **Adding an event**
   - Then click "Events" (1).
   - Then, from the function bar, select the system function or global script that you want to execute (2).
   - Optionally, you can convert the function bar into a JavaScript editor and create individual local scripts in that manner (3).

Figure 3-33


Task_1
Properties
Info
Diagnostics
Properties
Events
Update
Name
System functions
Alarm logging
Alarm system
Connection
Device
Parameter set
Resource
Tag
1
2
3

Note

Once a value change occurs for the tags, the configured function will be run.

Note

On exceeding/falling below a limit

By default, only the function "On value change" is available. However, if you do wish to run a function that exceeds or falls below a limit, you must implement it applicatively using the local scripting (e.g. "*If... Then... Else*" logic).

3.6 "Connections" and connection driver

This chapter compares the connections and communication drivers for the Comfort Panel and United Comfort Panel.

Table 3-17

<table>
<tr><th>Description</th><th>Comfort Panel</th><th>Unified Comfort Panel</th></tr>
<tr><td colspan="3">Communication drivers</td></tr>
<tr><td>Allen-Bradley DF1</td><td>●</td><td rowspan="8">●
(via CSP*)1)</td></tr>
<tr><td>Allen-Bradley EtherNet/IP</td><td>●</td></tr>
<tr><td>LOGO!</td><td>●</td></tr>
<tr><td>Mitsubishi FX</td><td>●</td></tr>
<tr><td>Mitsubishi MC TCP/IP</td><td>●</td></tr>
<tr><td>Modicon Modbus RTU</td><td>●</td></tr>
<tr><td>Modicon Modbus TCP/IP</td><td>●</td></tr>
<tr><td>Omron Host Link</td><td>●</td></tr>
<tr><td>OPC UA</td><td>●</td><td>-</td></tr>
<tr><td>SIMATIC HMI HTTP</td><td>●</td><td>-</td></tr>
<tr><td>SIMATIC S7 200</td><td>●</td><td>-</td></tr>
<tr><td>SIMATIC S7 300/400</td><td colspan="2">●</td></tr>
<tr><td>SIMATIC S7 1200</td><td colspan="2">●</td></tr>
<tr><td>SIMATIC S7 1500</td><td colspan="2">●</td></tr>
<tr><td>SIMOTION</td><td>●</td><td>-</td></tr>
<tr><td colspan="3">Connections (max.)</td></tr>
<tr><td>S7 connections</td><td>8</td><td>16</td></tr>
</table>

Note

1) CSP (Channel Support Packages) for WinCC Unified will be delivered in stages and can be downloaded at the following link:

https://support.industry.siemens.com/cs/ww/en/view/109779920

Note

You can find more information on connections and configuration options in the corresponding manual under:

WinCC Comfort/Advanced V16: "Connections: Communication via connections"
https://support.industry.siemens.com/cs/ww/en/view/109773506/130169596811

WinCC Unified V16: "Connections"
https://support.industry.siemens.com/cs/ww/en/view/109773780/101996673675

CAUTION

The SIMATIC HMI Unified Comfort Panel, compared to the SIMATIC HMI Comfort Panel, requires more connection resources in conjunction with S7 controllers.

If you want to convert your Comfort Panel project to Unified Comfort and you are using smaller S7 controllers (such as the 1511), some limitations may occur.

3.6.1 Range pointers

Use a range pointer to access a data range in the controller. During communication, the controller and operator device interact to read to and write from these data ranges. By processing stored data, the controller and operator device mutually trigger defined actions.

Range pointers are required, for example, in the case of the following data:

- Recipes
- Job mailboxes
- Sign-of-life monitoring

Table 3-18

Description	Comfort Panel	Unified Comfort Panel
Screen number	●	-
Data record	●	-
Date/time	●	● (can be implemented applicatively if needed)
PLC date/time	●	● (can be implemented applicatively if needed)
Global range pointers		
Coordination	●	● (can be implemented applicatively if needed)
Project ID	●	● (can be implemented applicatively if needed)
Job mailbox		
Set time of day	●	● (can be implemented applicatively if needed)
Adjust the date	●	
Logging on users	●	-
User logoff	●	-
Transfer date/time to controller	●	● (can be implemented applicatively if needed)
Update tags	●	-
Delete alarm buffer	●	-
Screen selection	●	● (can be implemented applicatively if needed)
Read data record from controller	●	● (System function "LoadAndWriteParameterSet")
Write data record to controller	●	● (System function "LoadAndWriteParameterSet")

Note

Further information on range pointers can be found in the system manual "WinCC Engineering V16 - Communication" under

WinCC Comfort/Advanced V16: "Data exchange via range pointer"
https://support.industry.siemens.com/cs/ww/en/view/109773787/77423085835

3.6.2 Time synchronization

In order to have the same time throughout the system, you will use time synchronization to synchronize the time of the various components in the system.

Table 3-19

Description	Comfort Panel	Unified Comfort Panel
Time synchronization via integrated connection	●	-
"Date/time" range pointer	●	● (can be implemented applicatively)
"PLC date/time" range pointer	●	● (can be implemented applicatively)
NTP server	●	

3.7 "HMI alarms"

Alarms indicate events, operating states or faults which appear or continue to obtain in your system.

Note You can use the "Data2Unified" add-in to convert your existing configured alarms to WinCC Unified (see chapter 5.2).

Scope of functions with WinCC Comfort/Advanced or Unified

Table 3-20

Description	Comfort Panel	Unified Comfort Panel
Number of discrete alarms	2000 (4" devices) 4000 (7"-12" devices) 6000 (15" devices and up)	9 000
Number of analog alarms	50 (4" devices) 200 (7" devices and up)	300
Number of alarm classes	32	32
Length of an alarm in characters	80	512
Number of process values per alarm	8	10
Number of queued alarm events	64 (4" devices) 500 (7" devices and up)	750

Note Additional information how to work with alarms and configure them may be found in the corresponding manual:

WinCC Comfort/Advanced V16: "Working with alarms"
https://support.industry.siemens.com/cs/ww/en/view/109773506/36119224587

WinCC Unified V16: "Configuring alarms"
https://support.industry.siemens.com/cs/ww/en/view/109773780/129402167819

3.7.1 Discrete/analog alarms

Table 3-21

Description	Comfort Panel	Unified Comfort Panel
General information (applies to discrete and analog alarms)		
Events based on alarms	●	● (via Task scheduler)
Alarms can be acknowledged with tag	●	-
Loop-in alarm	●	-
Alarm text configurable	●	● (incl. 9 additional texts)
Alarm context "Origin" and "Range" configurable	-	●
Priority is configurable	-	●

Description	Comfort Panel	Unified Comfort Panel
Discrete alarms		
"Discrete alarms" are configurable	●	
Data types for trigger tags	Counter, (U) Int, Word, Array [..] of (U) Int	Bool, Byte, Word, DWord, LWord
Evaluation of edge type	-	●
Analog alarms		
"Analog alarms" are configurable	●	
Data types for trigger tags	Byte, Char, Counter, (L)Real, (U)SInt, (U)Int, (U)DInt, (U)LInt, (D) Word	(L)Real, (U)SInt, (U)Int, (U)DInt, (U)LInt
Dynamic limits (tags for analog alarms)	●	-

3.7.2 Controller and system alarms

Table 3-22

Description	Comfort Panel	Unified Comfort Panel
"Controller alarms" can be imported	●	● (via Runtime settings → Alarms)
"System events" can be imported	●	● (in project texts, category "HMI Runtime")

3.7.3 Alarm classes and alarm groups

Table 3-23

Description	Comfort Panel	Unified Comfort Panel
"Alarm groups" are configurable	●	-
Alarm classes		
"Alarm classes" are configurable	●	
Acknowledgment of alarm classes (state machine)		
"Alarm without acknowledgement"	●	
"Alarm with Acknowledgment"	●	
"Alarm with optional Acknowledgement"	-	●
"Alarm with Acknowledgement and Confirmation"	-	●
"Alarm without outgoing status and Acknowledgement"	-	●
"Alarm without outgoing status without Acknowledgement"	-	●

Description	Comfort Panel	Unified Comfort Panel
Email address is configurable	●	-
Display name is configurable	●	-
Status texts are configurable	●	● (via Runtime settings → Alarms)
Background color of any alarm class can be edited	●	
Text color of any alarm class can be edited	-	●
Number of system alarm classes	6	16

3.8 "Recipes"

Recipes, or parameter sets, collect data that belong together, such as machine parameterizations or production data.

Scope of functions with WinCC Comfort/Advanced or Unified

Table 3-24

Description	Comfort Panel	Unified Comfort Panel
Designations		
Category	Recipe	Parameter set type
Data record	Recipe data record	Parameter set
Data record element	Recipe element	Parameter
Performance data		
Number of recipes or parameter set types (WinCC Unified)	100 (4" devices) 300 (7"-12" devices) 500 (15" devices and up)	750
Number of elements per recipe[1] or parameter set type element (WinCC Unified)	200 (4" devices) 1000 (7"-12" devices) 2000 (15" devices and up)	1000
Number of data records per recipe or number of parameter sets (WinCC Unified)	200 (4" devices) 500 (7"-12" devices) 1000 (15" devices and up)	2 000
Reserved memory for data records in the internal Flash	512 kB (4" devices) 2 MB (7"-12" devices) 4 MB (15" devices and up)	12 MB [2]
Synchronization types		
Coordinated transmission of data records	● (Range pointer "Controller job")	● (Control tag "Parameter set ID" and "Job ID")
Compare recipe tags	●	-
Manual transfer of individual modified values (teach-in mode)	●	-

[1] When using arrays, each array element counts as a recipe element

[2] Expansion with memory card in X51 slot or USB drive at the X61 or X62 interface

System functions for recipes/parameter sets

Table 3-25

Description	Comfort Panel	Unified Comfort Panel
Importing and exporting data records		
"ExportDataRecord"	●	● "ExportParameterSets"
"ExportDataRecordWithChecksum"	●	
"ImportDataRecord"	●	● "ImportParameterSets"
"ImportDataRecordWithChecksum"	●	
Read and write data record		
"GetDataRecordFromPLC"	●	● "ReadAndWriteParameterSet"
"GetDataRecordName"	●	-
"GetDataRecordTagsFromPLC"	●	-
"SetDataRecordToPLC"	●	● "LoadAndWriteParameterSet"
"SetDataRecordTagsToPLC"	●	-
Delete data record		
"ClearDataRecord"	●	● via control tag [3]
"ClearDataRecordMemory"	●	-
Other		
"LoadDataRecord"	●	-
"SetRecipeTags"	●	-
"SaveDataRecord"	●	-

[3] For further information, see "Transferring and deleting parameter sets automatically"
https://support.industry.siemens.com/cs/ww/en/view/109773780/114317562635

Note

You can find more information on the recipes or parameter sets in the corresponding manual under:

WinCC Comfort/Advanced V16: "Working with Recipes"
https://support.industry.siemens.com/cs/ww/en/view/109773506/124403306763

WinCC Unified V16: "Configuring parameter sets"
https://support.industry.siemens.com/cs/ww/en/view/109773780/129549093387

3.9 "Historical data"

In WinCC, logs serve to archive process data for the HMI runtime.

A tag log is used to archive process data from an industrial plant.

The purpose of an alarm log is to archive alarms that occur in the process being observed.

Scope of functions with WinCC Comfort/Advanced or Unified

Table 3-26

Description	Comfort Panel	Unified Comfort Panel
Performance data		
Number of logs	10 (4" devices) 50 (7" devices and up)	50
Number of tags that can be archived per log	100 (4" devices) 2048 (7" devices and up)	5000
Number of entries per log (including all log segments)	10000 (4" devices) 20000 (7"-12" devices) 50000 (15" devices and up)	500000
Number of log segments	400	
Tag and alarm log (general)		
Save format	CSV file with ANSI character set RDB file, TXT file	SQLite
Save location	Memory card USB storage device Network drive	Memory card USB storage device
Logs can be shown on operator device	Trend view (tag log) Alarm display (alarm log)	
Logs can be displayed in user-defined form	-	● (via JavaScript)
Logs can be analyzed on PC	CSV	SQLite Browser, CSV (after converting from SQLite)
Configuration of save location	Editor "Archive"	Runtime settings
Archiving can be turned on centrally	-	● (via Runtime settings)
Archiving method can be changed (cyclic log, segm. cyclic log, etc.)	●	-
Tag log		
Configuration area to add tags to tag log	Editor "Tag archives" → "Archive tags"	-
	Editor "HMI Tags"→ "Archive tags"	
Compress log contents	-	Smoothing, compression
Acquisition mode		
Cyclic	●	

Description	Comfort Panel	Unified Comfort Panel
On demand	●	
On change	●	
System function	●	
Via limit values	●	
Via reference tags (tag trigger)	-	●
Smoothing	-	●

Note Additional information how to work with logs and configure them may be found in the corresponding manual:

WinCC Comfort/Advanced V16: "Working with archives"
https://support.industry.siemens.com/cs/ww/en/view/109773506/128393311627

WinCC Unified V16: "Archiving data"
https://support.industry.siemens.com/cs/ww/en/view/109773780/129585230475

System functions/snippets for logs

Table 3-27

Description	Comfort Panel	Unified Comfort Panel
"ArchiveLogFile"	●	●
"LogTag"	●	● "WriteManualValue"
"CopyLog"	●	-
"ClearLog"	●	● "ClearAlarmLog", "ClearTagLog"
"OpenAllLogs"	●	-
"CloseAllLogs"	●	-
"StartLogging"	●	-
"StartNextLog"	●	-
"StopLogging"	●	-
JavaScript snippets		
"Read log" (alarm or tag log)	-	●
"Export alarm log as CSV" "Export tag log as CSV"	-	●
"Add Comment to log tag"	-	●
"Correct logged tag values"	-	●

3.10 Scripts and system functions

System functions are all the default functions supplied with WinCC.

If the default functions are not sufficient for your purposes, you can extend the function with your own scripts.

Scope of functions with WinCC Comfort/Advanced or Unified

Table 3-28

Description	Comfort Panel	Unified Comfort Panel
Script language	VBScript	JavaScript
Number of scripts	50 (4" devices) 100 (7"-12" devices) 200 (15" devices and up)	600
Number of functions per function list	16	25
Global scripting	●	
Local script configurable in the Task planner	-	●
Local script configurable with regard to object properties	-	●
Local script configurable with regard to events	-	●
System functions available	●	
Debugging	●	
Debugging programs	Script Debugger[1]	Trace Forwarder[2], or Chrome Debugger [3] (for panel simulation)

[1] Additional information: https://support.industry.siemens.com/cs/ww/en/view/109773506/111974378379

[2] Further information: https://support.industry.siemens.com/cs/ww/en/view/109777593 (available starting 07/2020)

[3] Further information: https://support.industry.siemens.com/cs/ww/en/view/109779192

Note

For additional information on configuring and using JavaScript with SIMATIC WinCC Unified, please refer to the application example "SIMATIC WinCC Unified - Tips and Tricks for Scripting (JavaScript)" (expected to be available starting 08/2020):

https://support.industry.siemens.com/cs/ww/en/view/109758536

Note

You can find more information on scripts and system functions in the corresponding manual under:

WinCC Comfort/Advanced V16: "Working with system functions and runtime scripting"
https://support.industry.siemens.com/cs/ww/en/view/109773506/129466672395

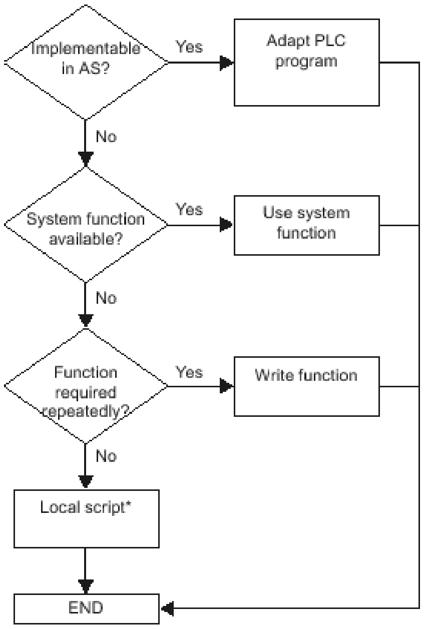
WinCC Unified V16: "Programming scripts"
https://support.industry.siemens.com/cs/ww/en/view/109773780/129575606027

WinCC Unified V16: "Using system functions"
https://support.industry.siemens.com/cs/ww/en/view/109773780/129295711883

3.10.1 System function or script? (A decision-making aid)

The chart below is a decision-making tool to help you determine when to use a system function, global script function (function), or a local script.

Figure 3-34


Implementable in AS?
Yes
Adapt PLC program
No
System function available?
Yes
Use system function
No
Function required repeatedly?
Yes
Write function
No
Local script*
END

3.10.2 Demanding a tag value for system functions in WinCC Unified

In order for the following five system functions to be run, they need a currently valid tag value.

- "InvertBitInTag"
- "SetBitInTag"
- "ResetBitInTag"
- "IncreaseTag"
- "DecreaseTag"

Internal tags with valid tag value

For internal tags, either

- a starting value must be configured, or
- the current value must have been written by an object, e.g. a script or an I/O field, or
- the current value must have been generated by tag retentive memory.

External tags with valid tag value

For external tags, the following conditions must be met:

- The connection to the PLC must be established;
- the acquisition mode of the tags is "Cyclic in operation";
- the tag is used by an object, e.g. an I/O field.

Note

For an overview of which system functions are available in which device, please refer to the corresponding manual under:

WinCC Comfort/Advanced V16: "System functions for Comfort Panels"
https://support.industry.siemens.com/cs/ww/en/view/109773506/121290626059

WinCC Unified V16: "System functions"
https://support.industry.siemens.com/cs/ww/en/view/109773780/128957667851

3.11 "Scheduled tasks"

In Scheduled tasks you will configure the tasks that will be run cyclically or only when a certain condition obtains. Each task has a trigger and an action.

Scope of functions with WinCC Comfort/Advanced or Unified

Table 3-29

<table>
<tr><th>Description</th><th>Comfort Panel</th><th>Unified Comfort Panel</th></tr>
<tr><td>Number of tasks time-triggered</td><td>10 (4" devices)
48 (7" devices and up)</td><td rowspan="2">70
(Tasks either time- or event-triggered)</td></tr>
<tr><td>Number of tasks event-triggered</td><td>Not relevant for system limit</td></tr>
<tr><td colspan="3">Cyclic triggers</td></tr>
<tr><td>100 milliseconds</td><td>-</td><td>●</td></tr>
<tr><td>250 milliseconds</td><td>-</td><td>●</td></tr>
<tr><td>500 milliseconds</td><td>-</td><td>●</td></tr>
<tr><td>1 second</td><td>-</td><td>●</td></tr>
<tr><td>2 seconds</td><td>-</td><td>●</td></tr>
<tr><td>5 seconds</td><td>-</td><td>●</td></tr>
<tr><td>10 seconds</td><td>-</td><td>●</td></tr>
<tr><td>1 minute</td><td>●</td><td>-</td></tr>
<tr><td>1 hour</td><td>●</td><td>-</td></tr>
<tr><td>Daily</td><td colspan="2">●</td></tr>
<tr><td>Weekly</td><td colspan="2">●</td></tr>
<tr><td>Monthly</td><td colspan="2">●</td></tr>
<tr><td>Annually</td><td colspan="2">●</td></tr>
<tr><td>User-defined cycles</td><td colspan="2">●</td></tr>
<tr><td colspan="3">Acyclic triggers</td></tr>
<tr><td>Disabled</td><td>●</td><td></td></tr>
<tr><td>Once</td><td>●</td><td></td></tr>
<tr><td>Tags</td><td>-</td><td>●</td></tr>
<tr><td>Alarms</td><td>-</td><td>●</td></tr>
<tr><td>Alarm buffer overflow</td><td>●</td><td>-</td></tr>
<tr><td>Runtime stop</td><td>●</td><td>-</td></tr>
<tr><td>Screen change</td><td>●</td><td>-
(application-based)</td></tr>
<tr><td>User change</td><td>●</td><td>-</td></tr>
<tr><td>When a dialog is changed</td><td>●</td><td>-</td></tr>
</table>

Description	Comfort Panel	Unified Comfort Panel
When a dialog is closed	●	-
Configurable events		
System functions	●	
Global script functions	●	
Local script functions	-	●

Note

For further information on Scheduled tasks, please refer to the corresponding manual under:

WinCC Comfort/Advanced V16: "Planning tasks"
https://support.industry.siemens.com/cs/ww/en/view/109773506/128401695627

WinCC Unified V16: "Planning tasks"
https://support.industry.siemens.com/cs/ww/en/view/109773780/128661638027

3.12 "Cycles"

The following table shows you the differences within the cycles between the two systems.

Table 3-30

<table>
<tr><th>Description</th><th>Comfort Panel</th><th>Unified Comfort Panel</th></tr>
<tr><td colspan="3">Cycle units</td></tr>
<tr><td>Milliseconds</td><td colspan="2">●</td></tr>
<tr><td>Seconds</td><td colspan="2">●</td></tr>
<tr><td>Minutes</td><td colspan="2">●</td></tr>
<tr><td>Hours</td><td colspan="2">●</td></tr>
<tr><td>Days</td><td>-</td><td>●</td></tr>
<tr><td colspan="3">Value ranges</td></tr>
<tr><td>Milliseconds</td><td>100…65,535,000</td><td>100…2,073,600,000</td></tr>
<tr><td>Seconds</td><td>1…65,535</td><td>1…3,888,000</td></tr>
<tr><td>Minutes</td><td>1…1,092</td><td>1…64,800</td></tr>
<tr><td>Hours</td><td>1…18</td><td>1…1,080</td></tr>
<tr><td>Days</td><td>-</td><td>1…45</td></tr>
<tr><td colspan="3">Predefined standard cycles</td></tr>
<tr><td>100 ms</td><td colspan="2">●</td></tr>
<tr><td>250 ms</td><td>●</td><td>-</td></tr>
<tr><td>500 ms</td><td colspan="2">●</td></tr>
<tr><td>1 s</td><td colspan="2">●</td></tr>
<tr><td>2 s</td><td colspan="2">●</td></tr>
<tr><td>5 s</td><td colspan="2">●</td></tr>
<tr><td>10 s</td><td colspan="2">●</td></tr>
<tr><td>1 min</td><td>●</td><td>-</td></tr>
<tr><td>5 min</td><td>●</td><td>-</td></tr>
<tr><td>10 min</td><td>●</td><td>-</td></tr>
<tr><td>1 h</td><td>●</td><td>-</td></tr>
<tr><td colspan="3">Places used</td></tr>
<tr><td>Acquisition cycle, external tags</td><td colspan="2">●</td></tr>
<tr><td>Archiving cycle, tags</td><td colspan="2">●</td></tr>
<tr><td>Trigger(s) for Task planner</td><td>-</td><td>●</td></tr>
</table>

Note

You can find more information on cycles in the corresponding manual under:

WinCC Comfort/Advanced V16: "Working with cycles"
https://support.industry.siemens.com/cs/ww/en/view/109773506/108442538507

WinCC Unified V16: "Configuring cycles"
https://support.industry.siemens.com/cs/ww/en/view/109773780/129566837771

3.13 "Text and graphic lists"

The tables below show you the differences in text and graphic lists in WinCC Comfort/Advanced and WinCC Unified.

Note

> Additional information and restrictions on the screen objects can be found in the respective manuals under:
>
> WinCC Comfort/Advanced V16: "Working with text list and graphic lists"
> https://support.industry.siemens.com/cs/ww/en/view/109773506/65694994827
>
> WinCC Unified V16: "Configuring text lists and graphic lists"
> https://support.industry.siemens.com/cs/ww/en/view/109773780/129413942027

Text lists

Table 3-31

Description	Comfort Panel	Unified Comfort Panel
Performance limits		
Number of text lists	300 (4" devices) 500 (7" devices and up)	750
Number of entries per text list	30 (4" devices) 500 (7" devices and up)	750
Number of text elements	2500 (4" devices) 40000 (7" devices and up)	60 000
Places used in screen objects		
"Symbolic I/O field"	●	
"Text box"	-	●
"Button"	●	
"List box"	-	●
"Radio button"	-	●
"Check box"	-	●
Faceplates	-	●
Using objects in text lists		
Use "parameter fields" in text lists	●	-
Use "dynamic parameters (text list)" within a text list	●	-
Use "Control tags" in text lists	●	-

Graphic lists

Table 3-32

Description	Comfort Panel	Unified Comfort Panel
Performance limits		
Number of graphic lists	300 (4" devices) 500 (7" devices and up)	750

Description	Comfort Panel	Unified Comfort Panel
Number of entries per graphic list	30 (4" devices) 500 (7" devices and up)	750
Number of graphic objects	1000 (4" devices) 4000 (7" devices and up)	6 000
Places used in screen objects		
"Symbolic I/O field"	-	●
"Graphic I/O field"	●	-
"Graphic view"	-	●
"List box"	-	●
"Button"	●	
"Radio button"	-	●
"Check box"	-	●

3.14 "User management"

The TIA Portal offers user management for projects. This makes it possible, for example, to protect a project from unintended or unauthorized changes.

Scope of functions with WinCC Comfort/Advanced or Unified

Table 3-33

Description	Comfort Panel	Unified Comfort Panel
Number of user groups	50	-
Number of permissions or roles	32	50
Number of predefined function rights		20
Number of users	50	200
User administration modes		
Local user administration	●	
Central user administration	● (via SIMATIC Logon)	-
User authentication via...		
...user name and password	●	
...password only	●	-
…RFID	●	-

Note

Additional information how to work and configure with user administration may be found in the corresponding manual under:

WinCC Comfort/Advanced V16: "Configuring user administration"
https://support.industry.siemens.com/cs/ww/en/view/109773506/128476918027

WinCC Unified V16: "Configuring user administration"
https://support.industry.siemens.com/cs/ww/en/view/109773780/129323781515

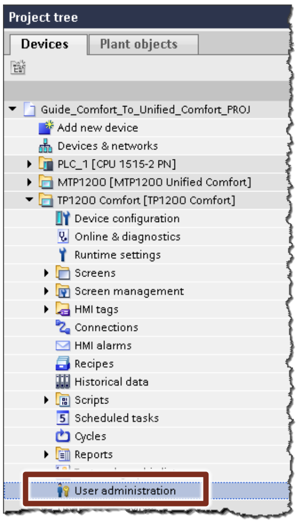
3.14.1 User administration in the Engineering stage

You can assign different users and permissions to each operator device.

WinCC Comfort/Advanced

In WinCC Comfort/Advanced, you configure the users in the respective operator device under "User administration".

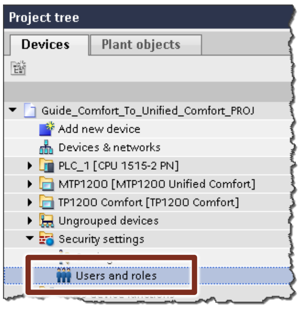
Figure 3-35


Project tree
Devices
Plant objects
Guide_Comfort_To_Unified_Comfort_PROJ
Add new device
Devices & networks
PLC_1 [CPU 1515-2 PN]
MTP1200 [MTP1200 Unified Comfort]
TP1200 Comfort [TP1200 Comfort]
Device configuration
Online & diagnostics
Runtime settings
Screens
Screen management
HMI tags
Connections
HMI alarms
Recipes
Historical data
Scripts
Scheduled tasks
Cycles
Reports
User administration

WinCC Unified

In WinCC Unified, or with the Unified Comfort Panels, users are created in the Project tree under "Security settings > Users and roles".

Figure 3-36


Project tree
Devices
Plant objects
Guide_Comfort_To_Unified_Comfort_PROJ
Add new device
Devices & networks
PLC_1 [CPU 1515-2 PN]
MTP1200 [MTP1200 Unified Comfort]
TP1200 Comfort [TP1200 Comfort]
Ungrouped devices
Security settings
Users and roles

3.14.2 Logging users in an out within the runtime

The user must log on to the runtime and authenticate himself/herself so that he/she may only perform the actions that he/she is authorized for.

WinCC Comfort/Advanced

In WinCC Comfort/Advanced, you had access to the following system functions in connection with the Comfort Panel and associated user logon/logoff:

- "Logon"
- "ShowLogonDialog"
- "Logoff"

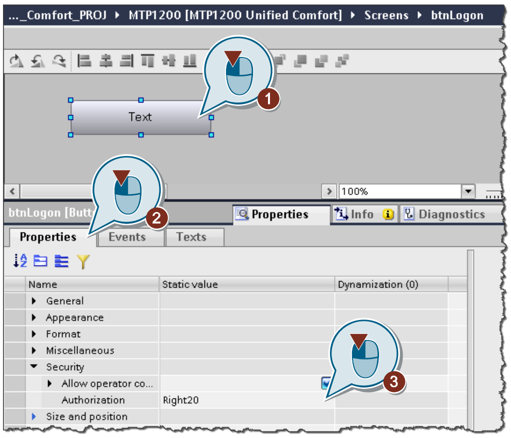
WinCC Unified

Logging on users

Proceed as follows to log yourself on to the runtime in the Unified Comfort Panel.

1. Add a "Button" to the screen.
2. Open the "Properties" of the button.
3. Then, in the property "Security > Authorization", assign a permission to the button that has not yet been used (i.e. which is not yet assigned to any user).

Figure 3-37


..._Comfort_PROJ ▸ MTP1200 [MTP1200 Unified Comfort] ▸ Screens ▸ btnLogon
Text
100%
btnLogon [Butt
Properties
Info
Diagnostics
Properties
Events
Texts
Name
Static value
Dynamization (0)
General
Appearance
Format
Miscellaneous
Security
Allow operator co...
Size and position
1
2
3

Authorization Right20

If you press the button in the runtime, the logon dialog will then appear and you can log on with the user name and password.

Logging off users

You can again use the system function "Logoff" to log off users in the runtime.

4 Simulating an HMI device and transferring data

Using the simulator, you will test the behavior of your configuration on the configuration PC. In this manner, you can detect logical configuration errors early on, before production begins.

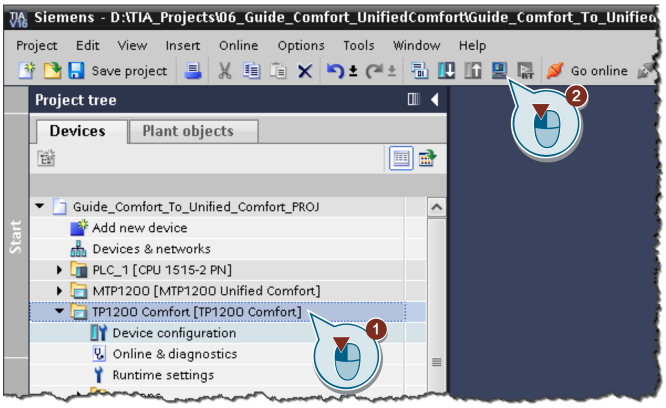
4.1 Simulating an HMI device

WinCC Comfort/Advanced

Proceed as follows to simulate your Comfort Panel under WinCC Comfort/Advanced:

1. Select your Comfort Panel in the Project tree (1).
2. Then click "Start simulation" in the function bar.

Figure 4-1

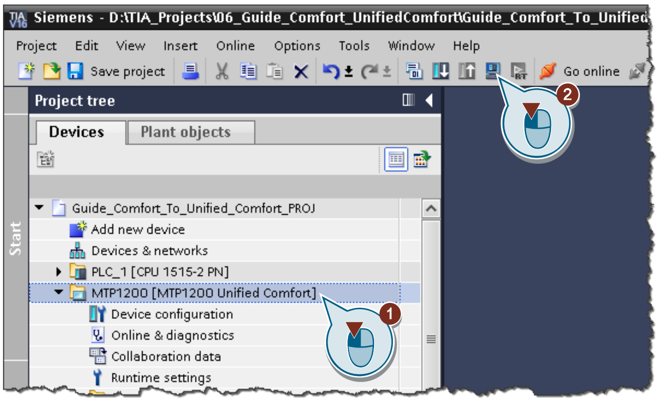

Siemens - D:\TIA_Projects\06_Guide_Comfort_UnifiedComfort\Guide_Comfort_To_Unified
Project
Edit
View
Insert
Online
Options
Tools
Window
Help
Save project
Go online
2
Project tree
Devices
Plant objects
Start
Guide_Comfort_To_Unified_Comfort_PROJ
Add new device
Devices & networks
PLC_1 [CPU 1515-2 PN]
MTP1200 [MTP1200 Unified Comfort]
TP1200 Comfort [TP1200 Comfort]
Device configuration
Online & diagnostics
Runtime settings
1

The simulation starts in the foreground.

WinCC Unified

Carry out the following steps to simulate your Unified Comfort Panel in WinCC Unified:

1. Select your Unified Comfort Panel in the Project tree (1).
2. Then click "Start simulation" in the function bar.


Siemens - D:\TIA_Projects\06_Guide_Comfort_UnifiedComfort\Guide_Comfort_To_Unified
Project
Edit
View
Insert
Online
Options
Tools
Window
Help
Save project
Go online
2
Project tree
Devices
Plant objects
Start
Guide_Comfort_To_Unified_Comfort_PROJ
Add new device
Devices & networks
PLC_1 [CPU 1515-2 PN]
MTP1200 [MTP1200 Unified Comfort]
Device configuration
Online & diagnostics
Collaboration data
Runtime settings
1

3. Open the Google Chrome browser.

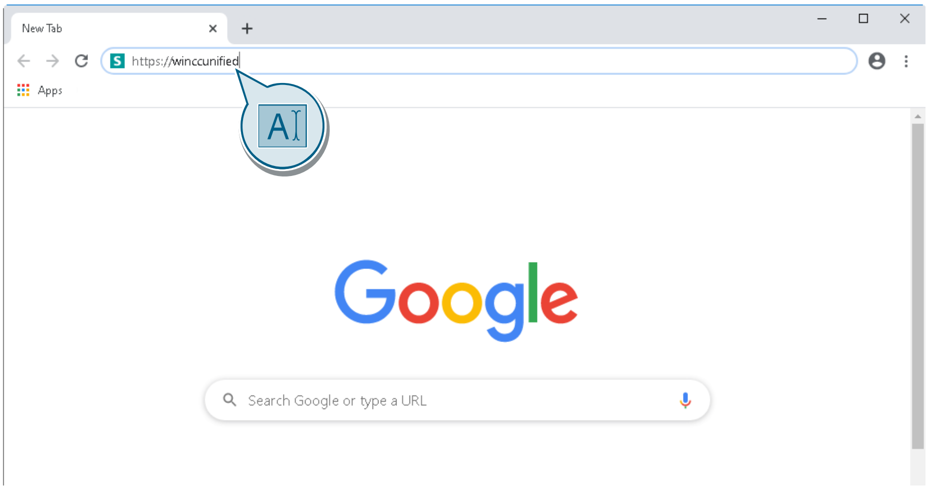
Google
Chrome

Note

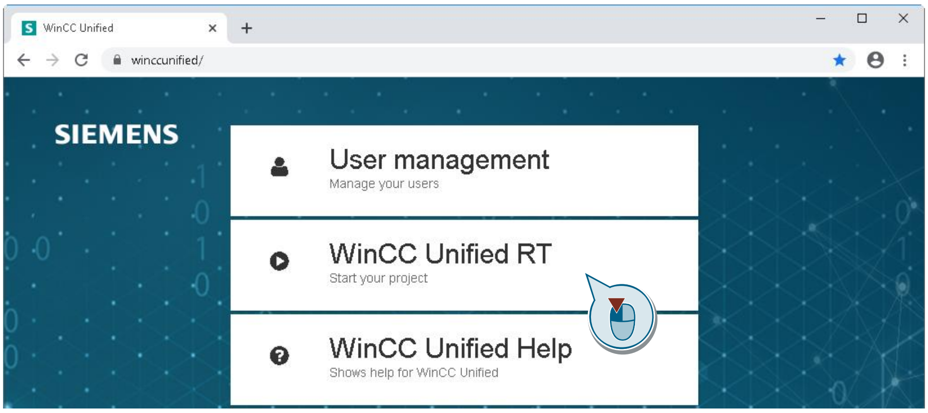
Additional information on which browser you can use can be found in the FAQ "Which browser can you use for SIMATIC WinCC Unified?"

https://support.industry.siemens.com/cs/ww/en/view/109757952

4. In the address bar, enter "https://[computer name]", in this case "https://winccunified".


New Tab
https://winccunified
Apps
Google
Search Google or type a URL

5. Click on "WinCC Unified SCADA RT" to open the project.

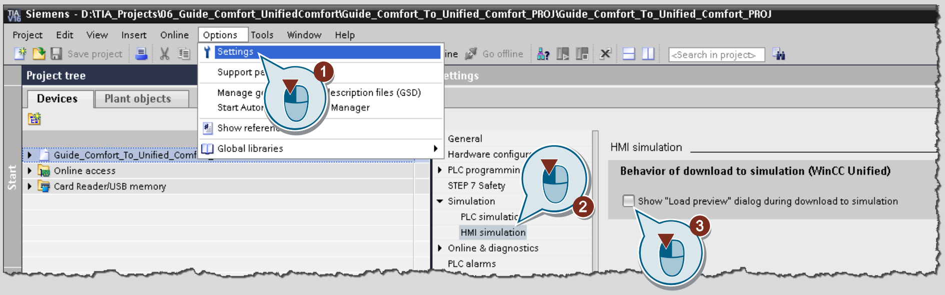

WinCC Unified
winccunified/
SIEMENS
User management
Manage your users
WinCC Unified RT
Start your project
WinCC Unified Help
Shows help for WinCC Unified

6. Enter the runtime user's "User Name" and "Password" and click "Sign in".
7. The simulation of the HMI device starts.

Note

The browser can also be started automatically as soon as you start the simulation. To do this, you must make the following settings:

1. Open the "Settings" in TIA Portal.
2. Under "Simulation", click "HMI simulation" in the navigation area.
3. Uncheck the check box "Show "Load preview" dialog during download to simulation".


Siemens - D:\TIA_Projects\06_Guide_Comfort_UnifiedComfort\Guide_Comfort_To_Unified_Comfort_PROJ\Guide_Comfort_To_Unified_Comfort_PROJ
Project
Edit
View
Insert
Online
Options
Tools
Window
Help
Settings
Support pa
Manage g
Start Autor
escription files (GSD)
Manager
Show referen
Global libraries
Save project
Go offline
<Search in project>
Project tree
Devices
Plant objects
Guide_Comfort_To_Unified_Comf
Online access
Card Reader/USB memory
Start
ettings
General
Hardware configur
PLC programmin
STEP 7 Safety
Simulation
PLC simulatic
HMI simulation
Online & diagnostics
PLC alarms
HMI simulation
Behavior of download to simulation (WinCC Unified)
1
2
3

☐ Show "Load preview" dialog during download to simulation

Restrictions in the simulation

When using the simulation, as opposed to the Unified Comfort Panel runtime, there are differences with respect to the following screen objects:

- Trend view:
  - Display additional curve areas
  - Display the legend
- Alarm view:
  - Usable buttons in the icon bar
  - Filter options
- Faceplates:
  - Scaling for the JavaScript method "OpenFaceplateInPopup"
  - Arrangement of the faceplate containers for the JavaScript method "OpenFaceplateInPopup"
- Screen window:
  - "Adjust size" property
  - Transparency settings for the displayed screen
  - Scaling for the system function "OpenScreenInPopup"
- I/O field: Default view for data type Word and DWord
- Parameter set view: Default view for data type Word
- Browser:
  - S7 web server view
  - PDF file viewing

Note

Additional information on the limitations can be found in the application example "Image downloads for HMI operator devices" under chapter "1.2 Unified Comfort Panels image and readmes" in "Unified_Comfort_Panels_Readme.zip".

https://support.industry.siemens.com/cs/ww/en/view/109746530

4.2 Downloading data to the HMI device

There are various options with the Comfort Panels or Unified Comfort Panels for transmitting data (e.g. configuration) to the operator device.

Table 4-1

<table>
<tr><th>Description</th><th>Comfort Panel</th><th>Unified Comfort Panel</th></tr>
<tr><td colspan="3">Online transfer</td></tr>
<tr><td>MPI/PROFIBUS DP</td><td>●</td><td>-</td></tr>
<tr><td>PROFINET</td><td colspan="2">●</td></tr>
<tr><td>Ethernet</td><td colspan="2">●</td></tr>
<tr><td colspan="3">Offline transfer</td></tr>
<tr><td>USB Type Mini B</td><td>●</td><td>-</td></tr>
<tr><td>USB</td><td>●</td><td>-</td></tr>
<tr><td>SD</td><td>●</td><td>-</td></tr>
</table>

Note

Which type of data transmission (e.g. updating the operating system, downloading a project) is supported by which channels can be referenced in the respective operating manual under:

Comfort Panel: "Data transmission options"
https://support.industry.siemens.com/cs/ww/en/view/49313233/100221275915

Unified Comfort Panel: "Transferring data"
https://support.industry.siemens.com/cs/ww/en/view/109779283/133075980555

Note

Additional information on offline transfers can be found in the application example "How with the TIA Portal do you transfer your project to your operator panel via a storage medium (USB stick, for example)?"

https://support.industry.siemens.com/cs/ww/en/view/109740696

5 Useful information

5.1 SIMATIC HMI Option+ vs. WinCC Unified und Unified Comfort Panel

SIMATIC HMI Option+ is an application for the SIMATIC HMI Comfort Panel which will grant you additional functions.

The following functions of SIMATIC HMI Option+ are contained by default in SIMATIC WinCC Unified and/or SIMATIC HMI Unified Comfort Panel:

- Display device- ad software-specific system information

  System function

  - "ShowSoftwareVersion"
- Read/write network parameters from the runtime

  System function

  - "GetIPV4Adress" / "SetIPV4Adress"
  - "GetNetworkInterfaceState" / "SetNetworkInterfaceState"
  - "GetDHCPState" / "SetDHCPState"
- Enable/disable interfaces

  Control Panel

  - "Hardware Interfaces"

Note Further information about "SIMATIC HMI Option+" can be found in the application example of the same name at the link:

https://support.industry.siemens.com/cs/ww/en/view/109754400

5.2 Data2Unified add-in

The "Data2Unified" add-in offers you the ability to convert your configuration contents into a WinCC Unified configuration so that you do not have to recreate the contents of your previous configurations from scratch.

You can find additional information in the download "Data2Unified Add-in":

https://support.industry.siemens.com/cs/ww/en/view/109770510

6 Appendix

6.1 Service and support

Industry Online Support

Do you have any questions or need assistance?

Siemens Industry Online Support offers round the clock access to our entire service and support know-how and portfolio.

The Industry Online Support is the central address for information about our products, solutions and services.

Product information, manuals, downloads, FAQs, application examples and videos – all information is accessible with just a few mouse clicks:
support.industry.siemens.com

Technical Support

The Technical Support of Siemens Industry provides you fast and competent support regarding all technical queries with numerous tailor-made offers – ranging from basic support to individual support contracts. Please send queries to Technical Support via Web form:
www.siemens.com/industry/supportrequest

SITRAIN – Training for Industry

We support you with our globally available training courses for industry with practical experience, innovative learning methods and a concept that's tailored to the customer's specific needs.

For more information on our offered trainings and courses, as well as their locations and dates, refer to our web page:
www.siemens.com/sitrain

Service offer

Our range of services includes the following:

- Plant data services
- Spare parts services
- Repair services
- On-site and maintenance services
- Retrofitting and modernization services
- Service programs and contracts

You can find detailed information on our range of services in the service catalog web page:
support.industry.siemens.com/cs/sc

Industry Online Support app

You will receive optimum support wherever you are with the "Siemens Industry Online Support" app. The app is available for Apple iOS, Android and Windows Phone:
support.industry.siemens.com/cs/ww/en/sc/2067

6.2 Links and literature

Table 6-1

No.	Subject
\1\	Siemens Industry Online Support https://support.industry.siemens.com
\2\	Link to the article page of the application example https://support.industry.siemens.com/cs/ww/en/view/109768002
\3\	Getting Started - SIMATIC HMI Unified Comfort Panels https://new.siemens.com/global/en/products/automation/simatic-hmi/wincc-unified/hardware/getting-started-ucp.html
\4\	System manual - SIMATIC STEP 7 Basic/Professional V16 and SIMATIC WinCC V16 https://support.industry.siemens.com/cs/ww/en/view/109773506
\5\	System manual - SIMATIC WinCC Engineering V16 - Runtime Unified https://support.industry.siemens.com/cs/ww/en/view/109773780
\6\	Operating instructions - SIMATIC HMI HMI devices Comfort Panels https://support.industry.siemens.com/cs/ww/en/view/49313233
\7\	Operating instructions - SIMATIC HMI HMI devices Unified Comfort Panels https://support.industry.siemens.com/cs/ww/en/view/109773257
\8\	Communication Service Packages (CSP) for WinCC Unified in TIA Portal https://support.industry.siemens.com/cs/ww/en/view/109779920
\9\	Demo project for SIMATIC WinCC Unified and SIMATIC HMI Unified Comfort Panels https://support.industry.siemens.com/cs/ww/en/view/109776633
\10\	System manual - SIMATIC WinCC Engineering V16 - Communication https://support.industry.siemens.com/cs/ww/en/view/109773787
\11\	Image downloads for HMI operator panels https://support.industry.siemens.com/cs/ww/en/view/109746530
\12\	Product information - SIMATIC HMI Unified Comfort Panels Important notes on your device https://support.industry.siemens.com/cs/ww/en/view/109779283/133075980555
\13\	Download – Data2Unified add-in https://support.industry.siemens.com/cs/ww/en/view/109770510

6.3 Change documentation

Table 6-2

Version	Date	Change
V1.0	07/2020	First edition