TIA Portal V19

Technical slides

Release version 09.11.2023

SIEMENS

TIA Portal V19
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SIMATIC WinCC – Innovations

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- Support of named value data types within Software Units
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- Advanced Programming
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SINAMIC Startdrive – Innovations

- New drives: SINAMICS S200, S210 (New), G220, S120M
- Project-integrated Shared Device support
- Long-term Trace

TIA Portal Cloud & Cloud Connector

- Overview of new functions

SIMATIC Hardware

- S7-1500: Hardware Innovation for Compact CPUs 1511C and 1512C
- ET 200pro: Hardware Innovation for CPUs 1513pro and 1516pro
- S7-1500V: Virtual Controller CPU1517V-1 PN
- S7-1500 R/H: OPC UA/ Support for CP and IE/PB LINK HA
- S7-1500: technology module TM MFP
- ET 200SP Open Controller CPU 1515SP PC2: V30.0 / V30.1
- IO Devices shared by multiple IO Controllers in a joint Project
- S7-1200: CPU Firmware V4.7
- S7-1500: Hardware Innovation for CPU 1517F-3 PN/DP
- S7-1500 SW Controller V30.0 / V30.1 Linux OS

System functions

- Upgrading projects
- TIA Portal Openness
- TIA Portal Add-Ins
- TIA Portal Version Control Interface
- TIA Portal CAx: AutomationML
- TIA Portal User Management & Access Control (UMAC)
- TIA Portal Information System (Web View)
- TIA Portal High Resolution Monitor Support

SIMATIC Automation Xpansion

- TIAX library use-case improvements
- TIAX direct loading – Engineer HW-Config & TOs with TIA Portal / Program and load machine application to PLC with SIMATIC AX
- SIMATIC AX support in China

TIA Portal Options

- **SIMATIC STEP 7 Safety**
- **SIMATIC Safe Kinematics**
- **TIA Portal Multiuser**
- **SIMATIC Robot Library**
- **OPC UA**
- **SIMATIC S7-PLCSIM / S7-PLCSIM Advanced**
- **SIMATIC Target for Simulink**
- **TIA Portal Test Suite**
- **SIMATIC Visualization Architect (SiVArc)**
- **SIMATIC Energy Suite**
- **Central User Management (UMC)**
- **Modular Application Creator**
- **SIMATIC ProDiag / SysDiag**
- **TIA Portal Teamcenter Gateway**

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TIA Portal V19
SIMATIC WinCC Unified

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TIA Portal V19
SIMATIC WinCC Unified V19 – Innovations

Scalability
- New device versions for PC Runtime, Unified Comfort Panel and Unified Basic Panel
- Installation of Professional, Advanced and Unified Engineering on one PC in parallel

Efficent Engineering
- Resource Monitor: overview about configured objects in project
- MultiUser Engineering on screen level
- Simplified Alarm & Trend Controls
- Local search in scripts
- New object: Text Label and text box
- One.Click Simulation
- Engineering on 4K screens
- Diverse Screen Engineering improvements
- Visual Studio Code as development environment for JavaScript

Standardization
- Dynamic data connections for faceplates
- Automatic faceplate adaption / resizing
- Text lists as library type
- Global search in library types

Openness
- GraphQL - Access to online & logged tags & alarms

Connectivity
- Time synchronization between HMI → PLC
- System functions for inching

10001011
10010001
00010000

Analysis & Operations
System Diagnostics
- for Unified Basic Panels

Process Diagnostics
- for Unified Comfort Panels
- Criteria Analysis for PC & UCP

GUI Concepts / Personalized HMI
- Device specific start screen
  - with specific zoom level and
  - position of zoomed area
  - Automized logon with a default user
- Change user without screen change
- Configure Kiosk mode
- Configure online trend control via Drag and Drop at runtime

Unified Data Hub (limited sales release)
- Collect and archive production data centralized

Corporate Designer
- User defined styles in a new Style libraries with centralized color palette
- Free download in SIOS (after release)

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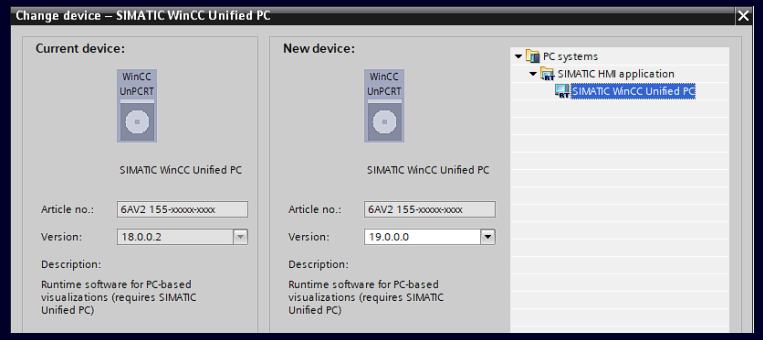
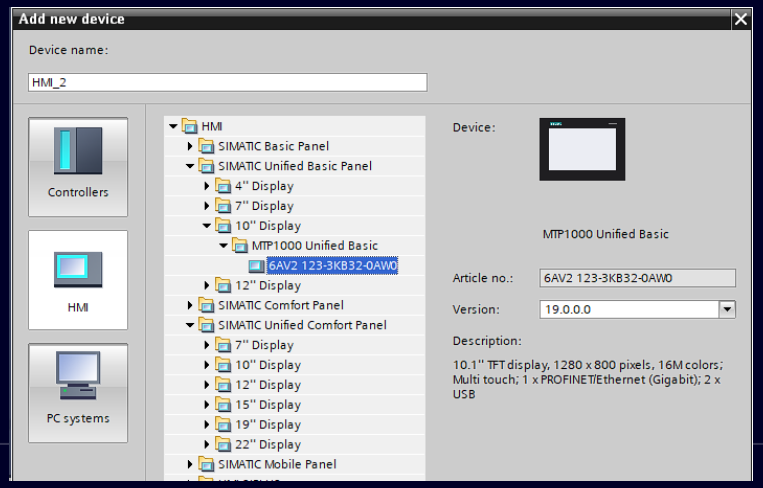
WinCC Unified V19 - Scalability
New devices

NEW

Unified Basic Panel	Unified Comfort Panel ✓	WinCC Unified PC ✓





New device version for
- ✓ **PC Runtime and**
- ✓ **Unified Comfort Panels**
- ✓ **Unified Basic Panels**

New features only available in the corresponding device version

- ➢ Upgrade the Unified devices
- ➢ Upgrade Faceplates in library (if necessary)

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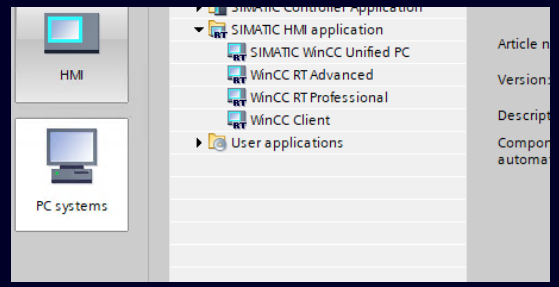
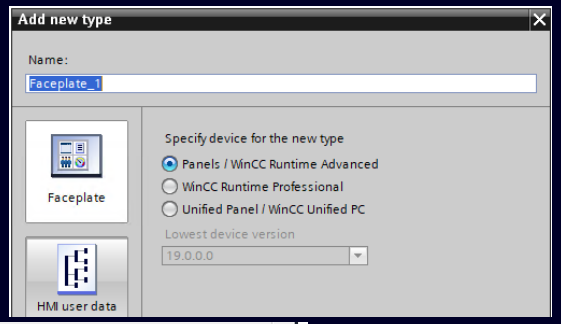
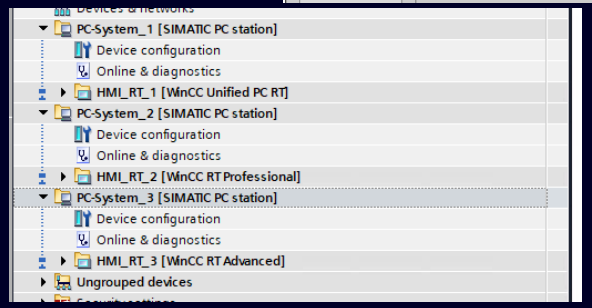
WinCC Unified V19 – Scalability
Engineering of WinCC editions on one PC

NEW

Unified Basic Panel ✓	WinCC Unified PC ✓
Unified Comfort Panel ✓	WinCC Professional ✓
	WinCC Advanced ✓







WinCC Unified, Professional and Advanced on one PC

- One DVD which contains setups for every WinCC ES reduces installation time
- Handle Unified RT, RT Advanced and RT Professional devices in one project increases engineering efficiency
- Install all Runtimes on one PC and operate them side by side without the need of using different PCs

Hint:
Runtimes have their own deliveries and are not part of the engineering DVD. This also applies to simulation

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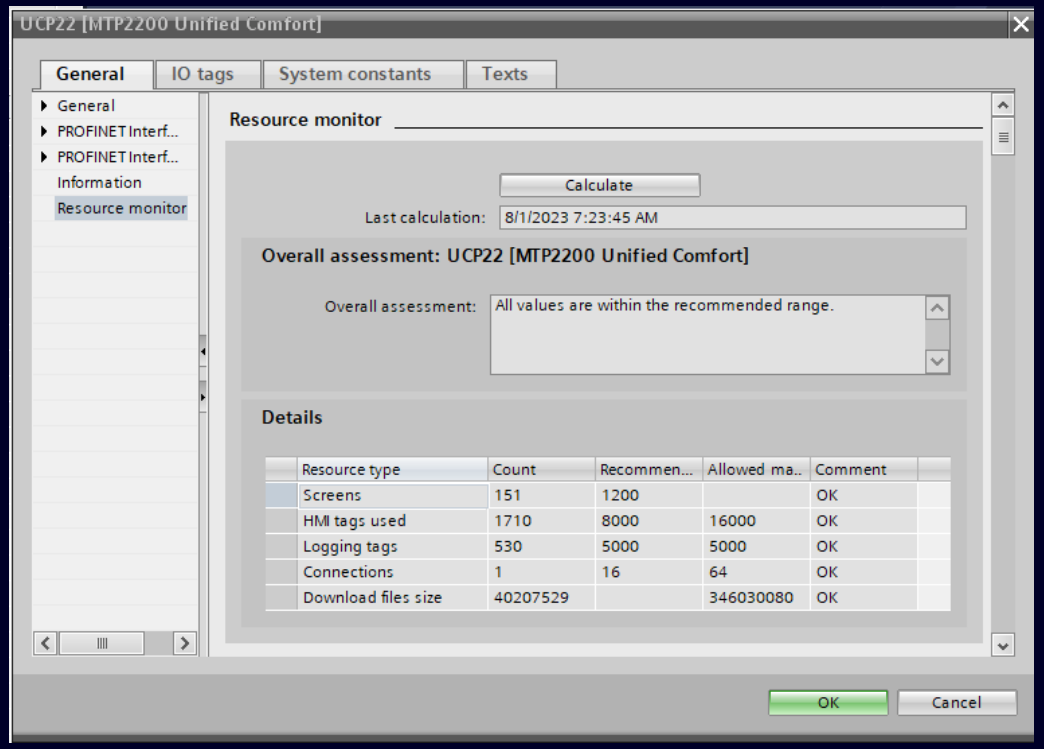
WinCC Unified V19 – Efficient Engineering
Resource Monitor - Overview about configured objects in project

NEW

Unified Basic Panel ✓ | Unified Comfort Panel ✓ | WinCC Unified PC ✓



Get an overview about the already configured objects on demand

- Device granular calculation
- Select the device and go to its properties
- Object counts are checked for their limits

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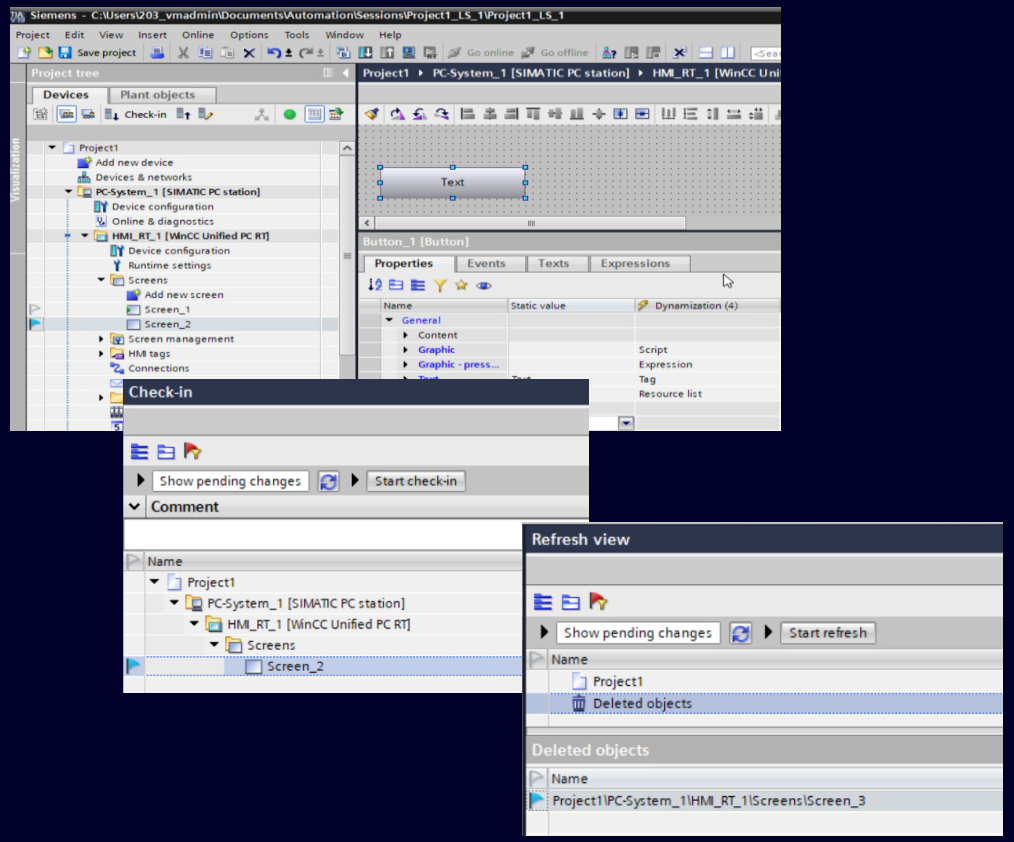
WinCC Unified V19 - Efficient Engineering
MultiUser Support for Unified Device Screens

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓



Reduced engineering time using MultiUser project collaboration for screens in Unified devices

- MultiUser Support for Screen:
  - Properties,
  - Events,
  - Dynamization (Tag, Expression, Resource list, Flashing),
  - Texts,
  - Script: InProgress
- Check-In of Marked screens to Server Project
- Refresh Local session from Server Project

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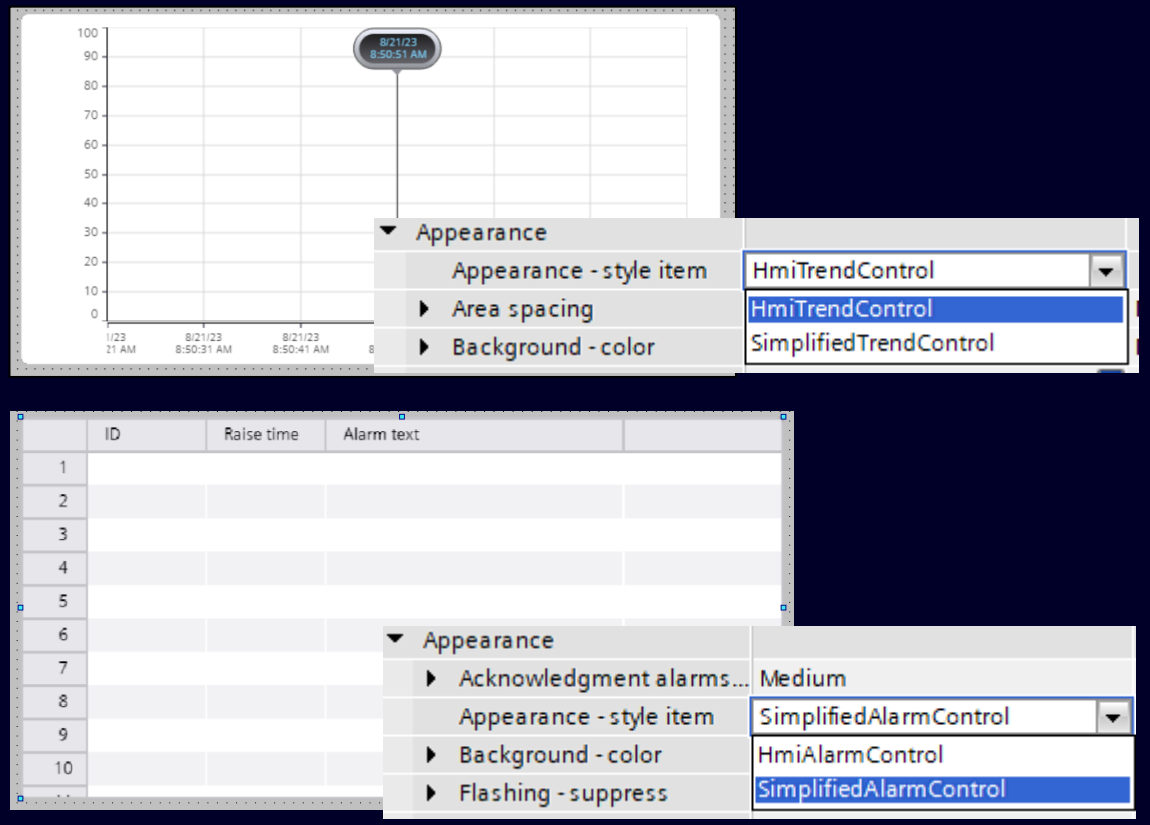
WinCC Unified V19 – Efficient Engineering
Simplified Alarm and Trend Controls

NEW

Unified Basic Panel ✓ | Unified Comfort Panel ✓ | WinCC Unified PC ✓



Simplified view for Alarm Control & Trend Control

- Introduced new style items for Alarm & Trend control which improves handling of screen space utilization.
- Especially useful and set as default for Unified Basic Panels .

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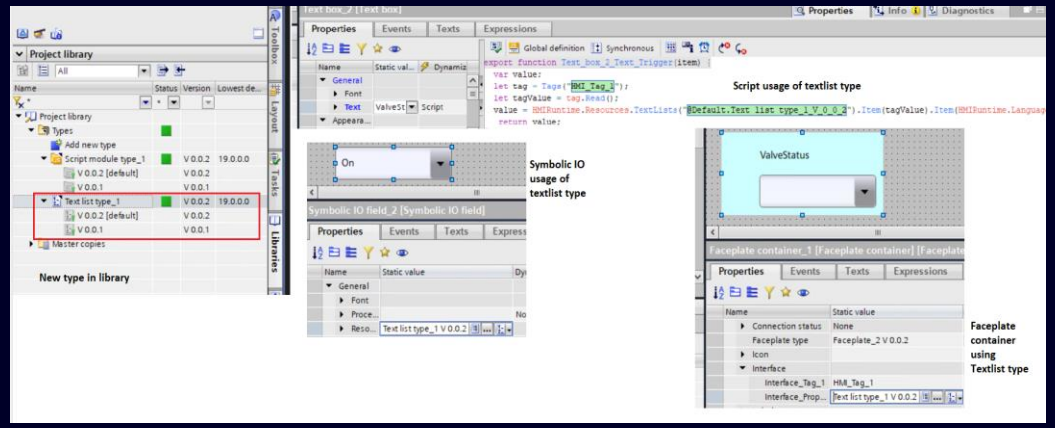
WinCC Unified V19 – Efficient Engineering
Improvements on Searching

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓



Global search for specific library types

- Unified Faceplate types and Script Module types can be found via the Global Search in TIA Portal, as well as the usage locations of PLC UDT types in Unified Faceplate types.

Local search in scripts

- Local scripts can be searched via "Search and Replace". This is possible in all local scripts, e.g. in the screen, in the faceplate or in script modules.

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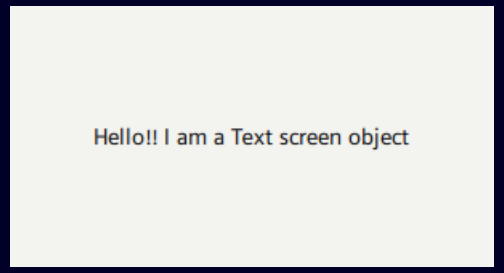
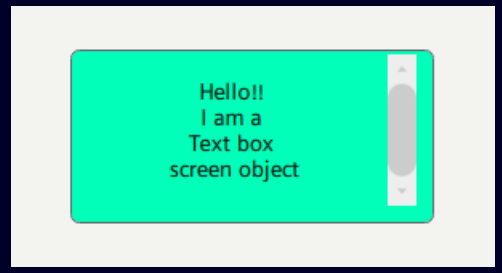
WinCC Unified V19 – Efficient Screen Engineering
More Improvements

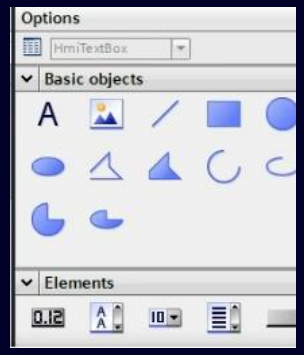
NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓

A Text







New screen object: “Text”

- simplified object to display texts (w/o border, scrollbar,…)
- supports multiple lines and multiple languages

Existing screen object “Text box” additionally supports:

- Wrapping
- Scroll bars
- Background Colour
- Border
- Spacing
- Text break
- Text trimming
- Connection quality
- Editable (in RT)
- Copy & Paste (in RT)

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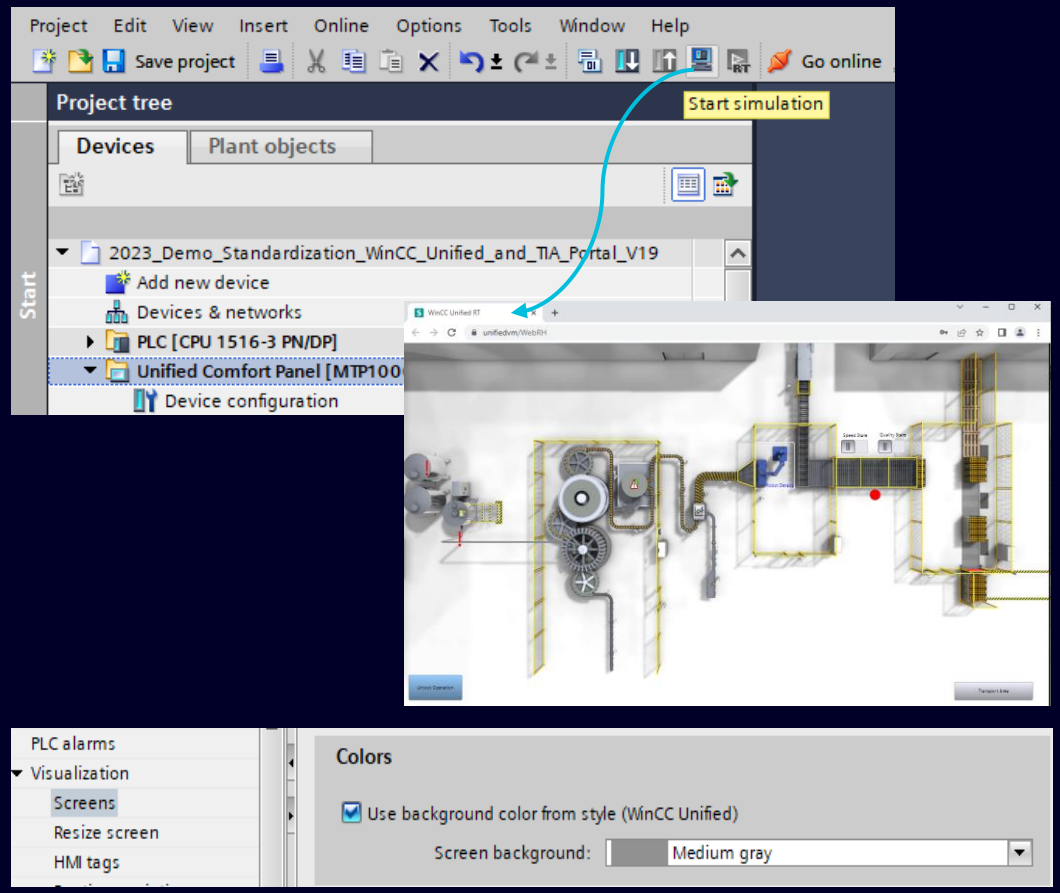
WinCC Unified V19 – Efficient Engineering
More Improvements

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓



HMI Simulation

- See the engineering results in an easy and fast way with simulation via just one click.
- Simulation starts automatically in web browser
- Saves engineering time.

Improved HMI Screen Configuration

- Configurable default background color of HMI screens
- Configure backround color dependend or independent from style and create specifically colored screens

Engineering in 4k screens

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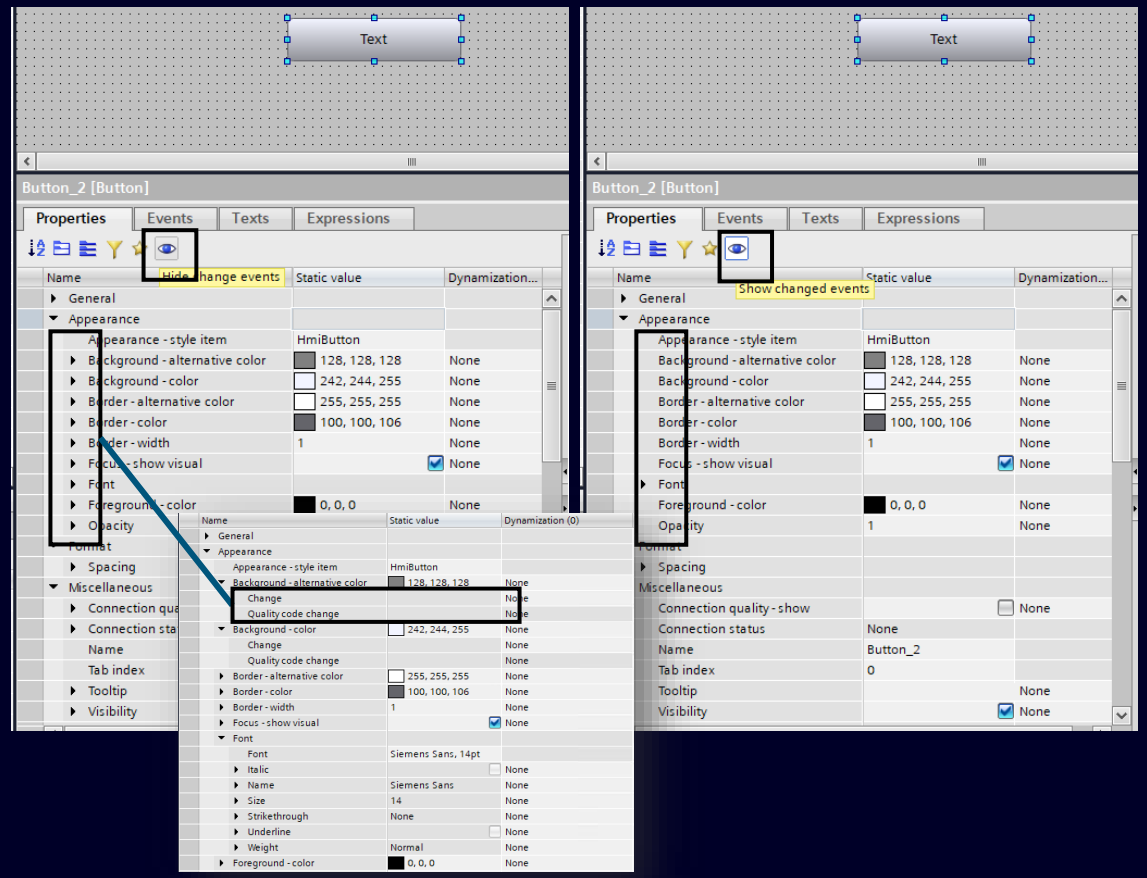
WinCC Unified V19 - Efficient Engineering
Screen item properties

NEW

Unified Basic Panel ✓ | Unified Comfort Panel ✓ | WinCC Unified PC ✓



With hide/show change events button user can concentrate just on the properties

- Simplifies the properties view and makes it easier to work

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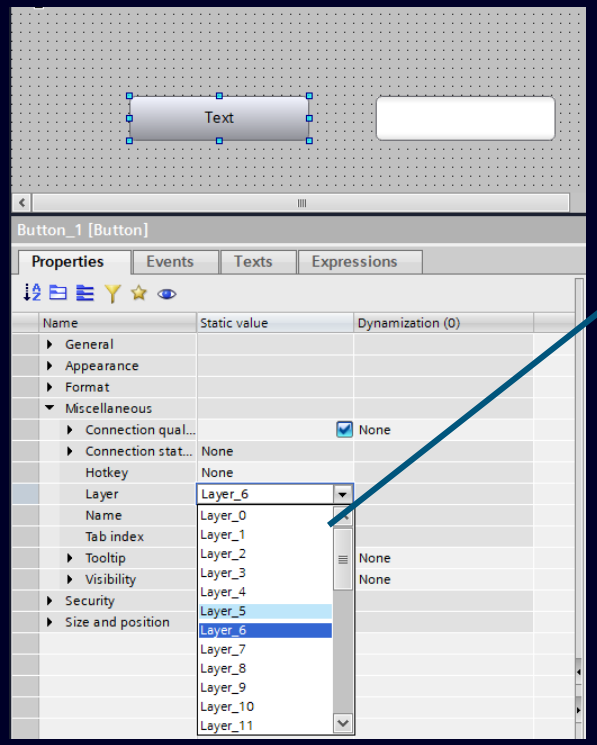
WinCC Unified V19 - Efficient Engineering
Set Layer property via the property editor grid

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓



The value is selectable via a dropdown list which contains all the layers

Layer property now appears under the Miscellaneous property list

Easier movement of screen items between layers directly from the property grid instead of drag and drop in the layer editor

- Set Layer property via the property editor grid

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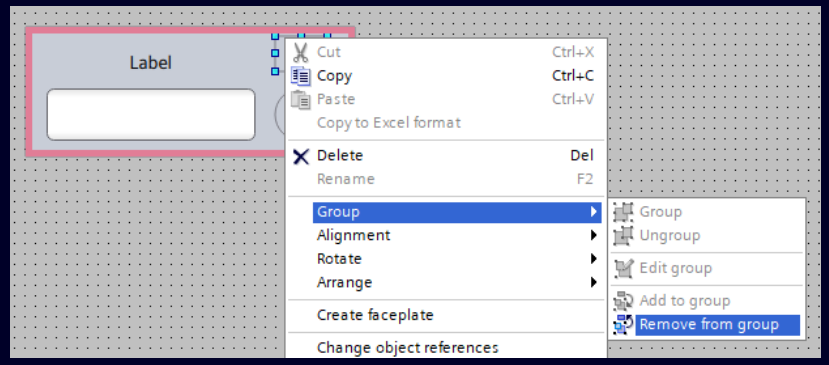
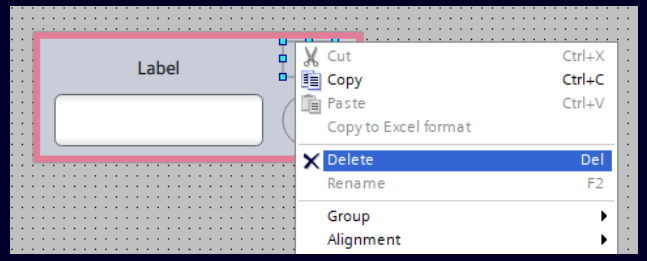
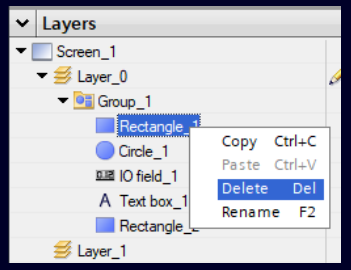
WinCC Unified V19 - Efficient Engineering
Handling of grouped objects

NEW

Unified Basic Panel	Unified Comfort Panel[1]	WinCC Unified PC[1]
✓	✓	✓







Remove or Delete screen items from a Group

- Use context menu to remove a marked object from a group without removing the object from the screen
- Remove an object from the group and delete it from the screen

1 As of V18 Update

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WinCC Unified V19 – Flexible Functional Extension
Individual Runtime behaviour without programming[1]

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓

Name	Wert
SetzePLCDatumUhrzeit	
Name Verbindung (optional)	HMI_Verbindung_1
<Funktion hinzufügen>	

Name	Wert
ZeigeAnmeldeDialog	
<Funktion hinzufüge...	

Adapt the Runtime behavior to your needs without programming by using new system functions

- Time synchronization HMI → PLC
- Change user without screen change

1 As of V18 Update

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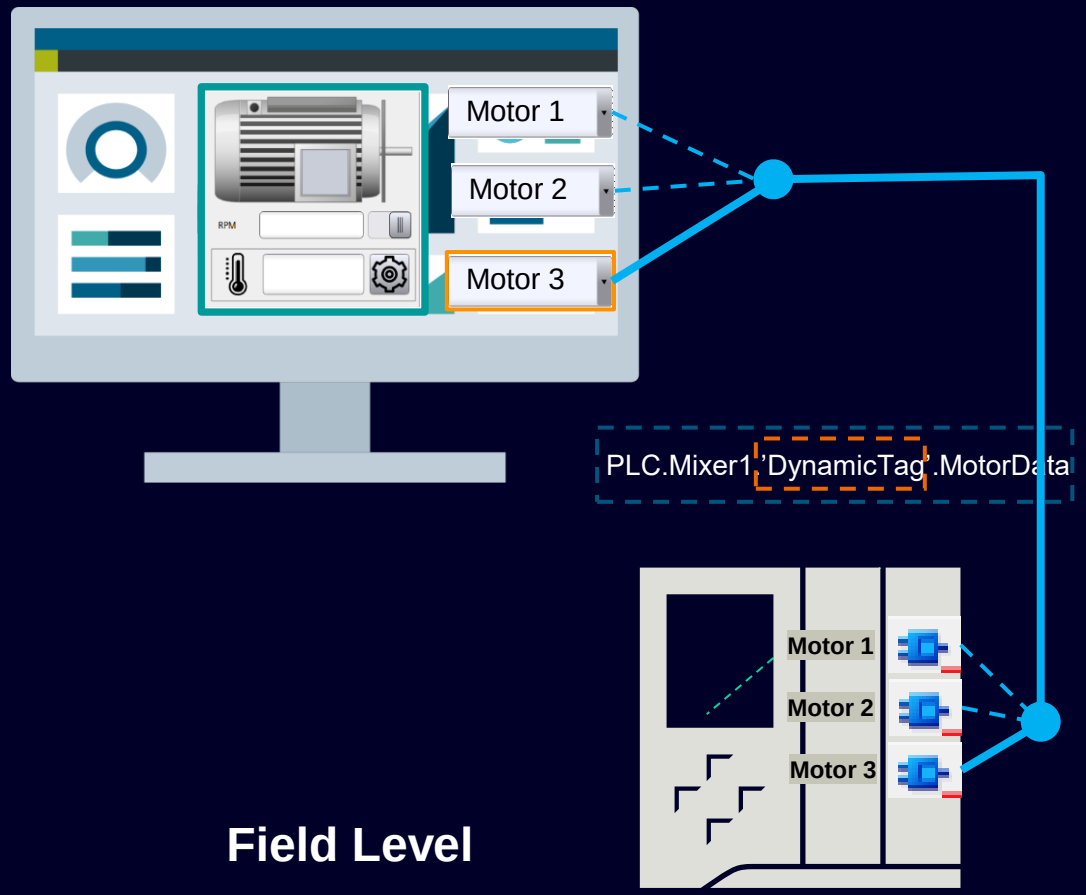
WinCC Unified V19 – Standardization
Dynamic data connections for faceplates - tag prefixes

NEW

Unified Basic Panel ✓ | Unified Comfort Panel ✓ | WinCC Unified PC ✓



Efficient Engineering, without Scripting

- Variable parameters at the faceplate interface enable dynamic data connections without scripting

Standardization of faceplates with different or dynamic data connections

- The tag parameters can be used to standardize faceplates and nested faceplates in an even more flexible or complex way.

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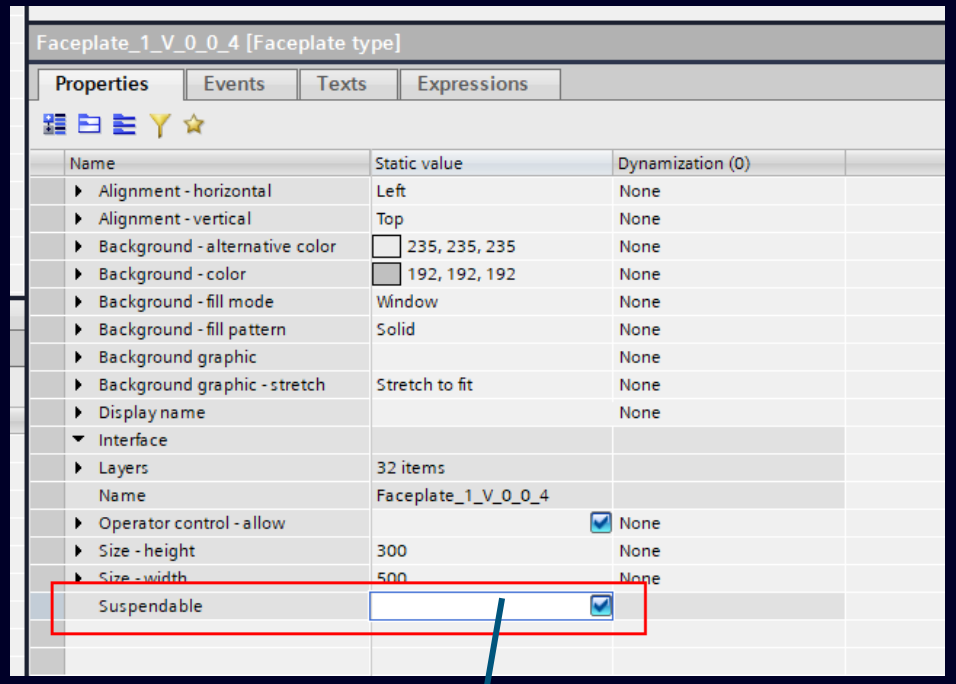
WinCC Unified V19 – Standardization
Performance improvements for screens with many faceplates

NEW

Unified Basic Panel ✓ | Unified Comfort Panel ✓ | WinCC Unified PC ✓



Faceplate type can be marked as suspendable.

Performance improvements for screens with many faceplates

- Then cyclic scripts or scripts triggered by tag changes are not executed when the faceplate is not visible.

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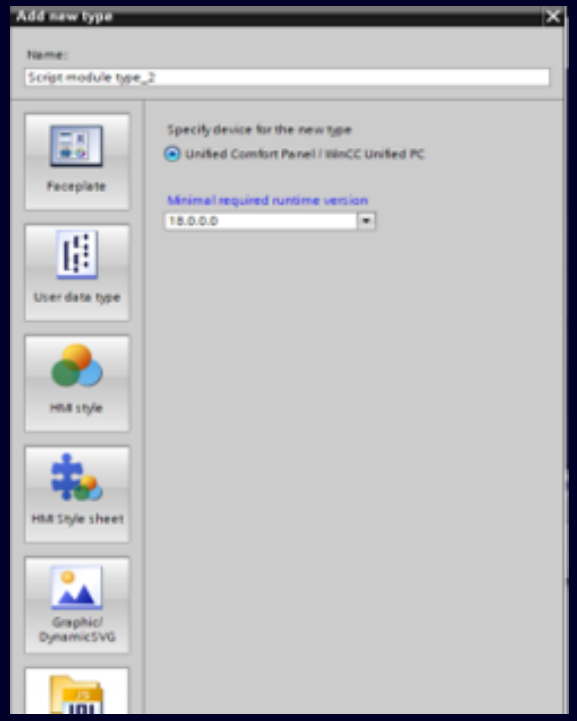
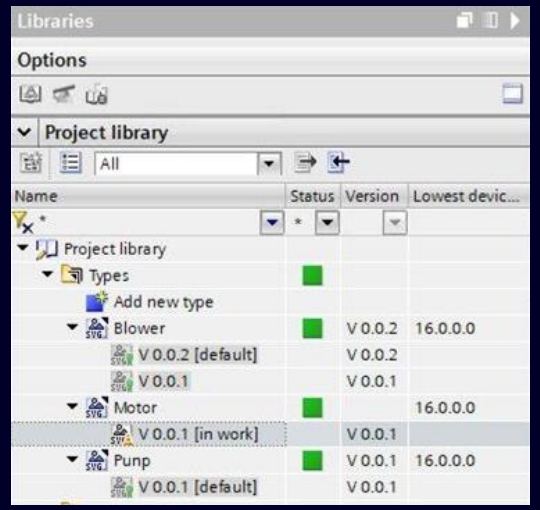
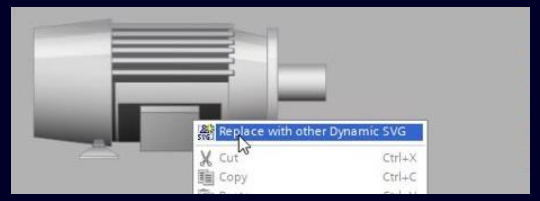
WinCC Unified V19 – Standardization
Library Handling and versioning

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓







Create individual library templates (master copies) with dynamic process connection

Easy reuse, central change and faster commissioning
by using the library

Central handling of HMI objects

- User data types
- Faceplates
- Graphics/Dynamic SVGs
- Script modules
- Text lists[1] NEW

V0.0.2 [in work]
V0.0.1 [default]

- **Managed workflow**
  to clearly indication pre-versions or not-yet released updates

1 As of V19

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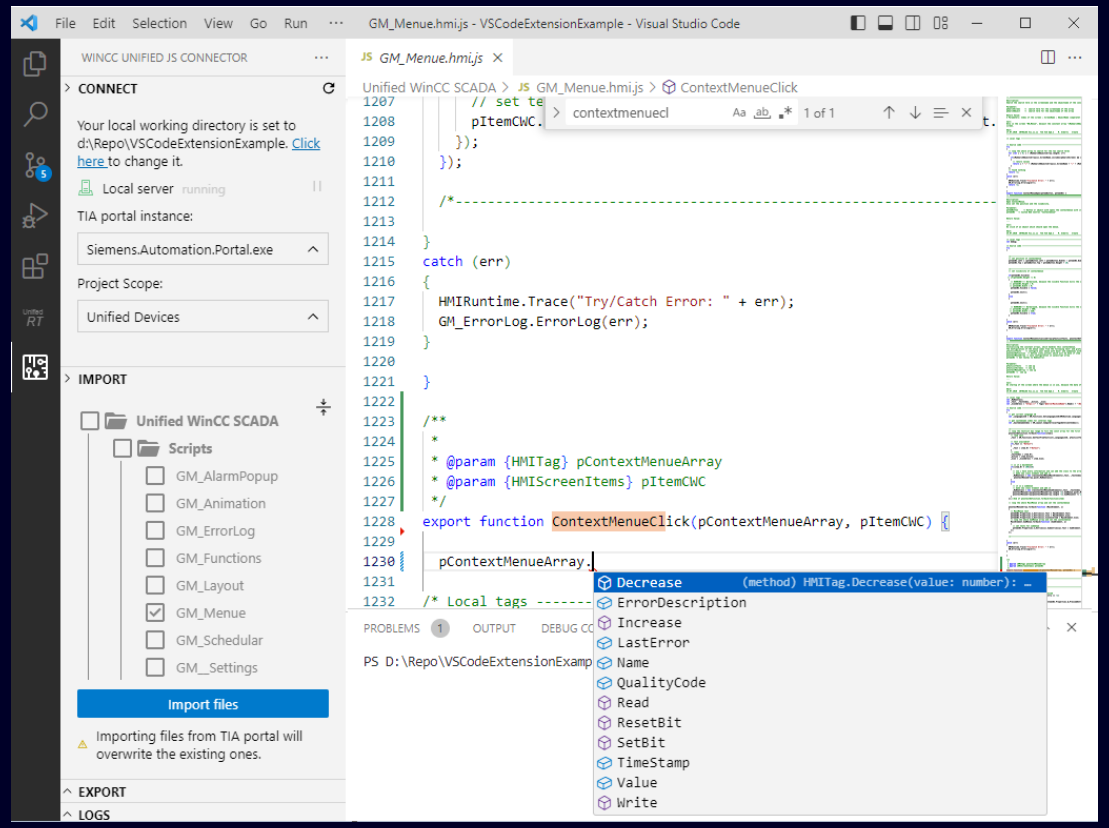
WinCC Unified V19 – Openness
Scripting Efficiency – Scripting with Visual Studio Code

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓



Use Visual Studio Code as development environment
Benefit from a powerful, modern development environment for WinCC Unified Java scripts

Fast data exchange between Unified ES and VS Code
Select the files you want to work with and exchange JS files between TIA Portal and VS Code via a single button click

Unified Style Guide and Snippets
Automatically set up of Unified JavaScript Style Guide and snippet support enables the usage of known functionality in VS Code

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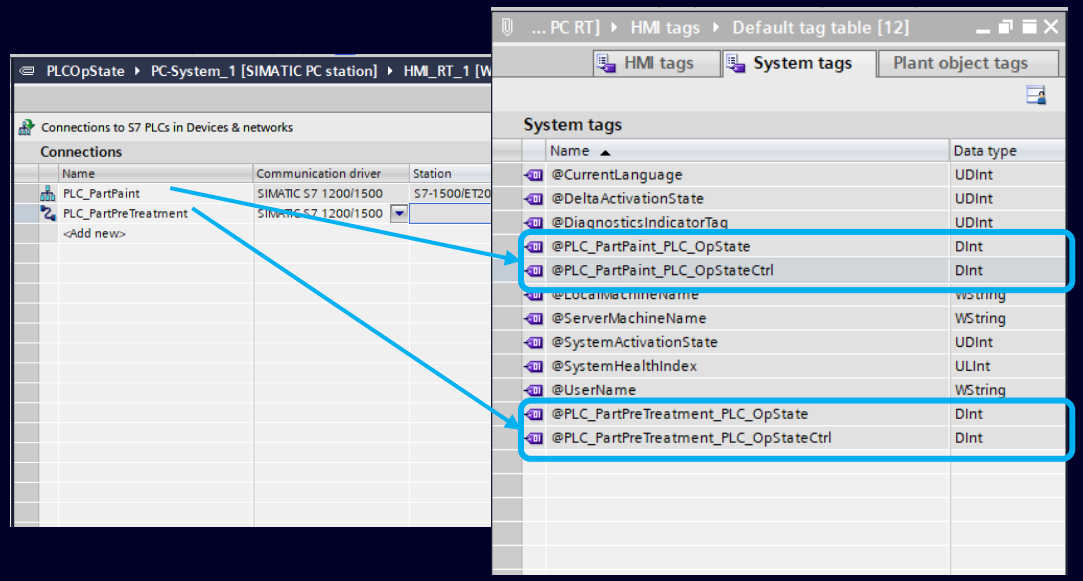
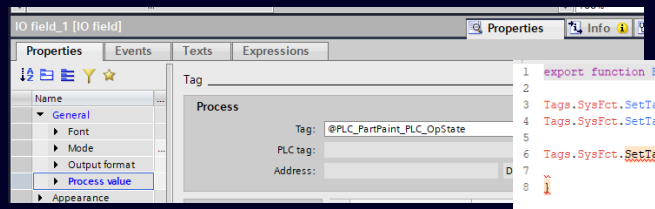
WinCC Unified V19 – Communication with S7plus
Operating state of S7-1200 & S7-1500 PLCs

NEW

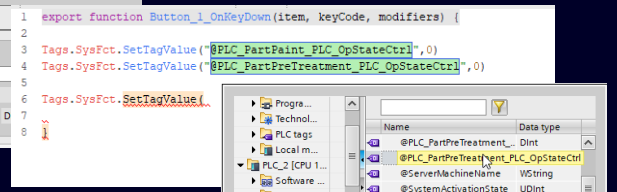
Unified Basic Panel NEW ✓	Unified Comfort Panel[1] ✓	WinCC Unified PC[1] ✓

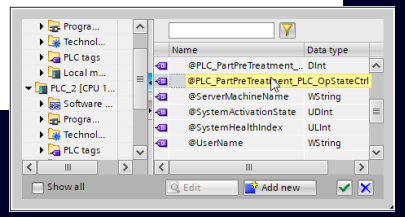




Object Dynamization

Scripting Access





Operating state of S7-1200/S7-1500 PLCs

User can read or set the operating state of S7plus-PLCs using system tags in Unified HMI

- For each S7plus connection (integrated or non-integrated) system tags are created:
  - PLCOpState
  - PLCOpState_Ctrl
- These tags can be used
  - for dynamization in screens and
  - for access via scripting

1 As of V18 Update

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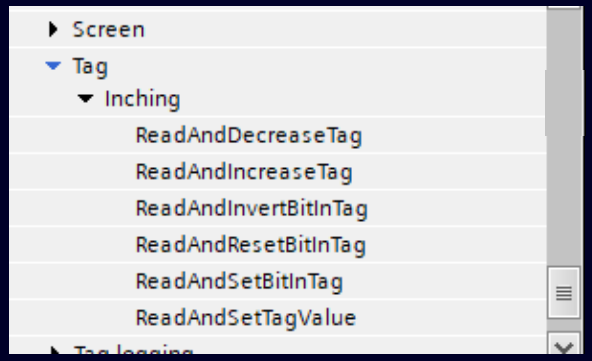
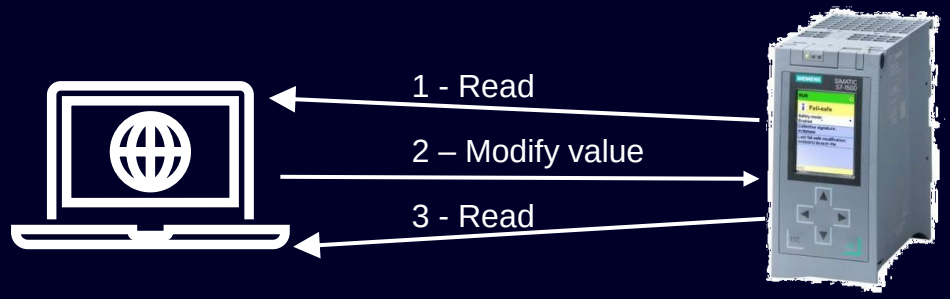
WinCC Unified V19 – Inching
Accurate writing of tags to PLC[1]

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓





Accurate tag communication HMI/PLC

Optimized system functions for inching use cases

- New system functions are optimized for inching operations.
- Synchronization of tag value between HMI and PLC before and after the write operations
- Slower than their counterparts, but it is recommended to use them in special scenarios:
  - Fast execution of the system functions (Inching), especially in long acquisition cycles
  - Tag value is changed from HMI and PLC side
  - Tag limits on PLC side

1 As of V18 Update

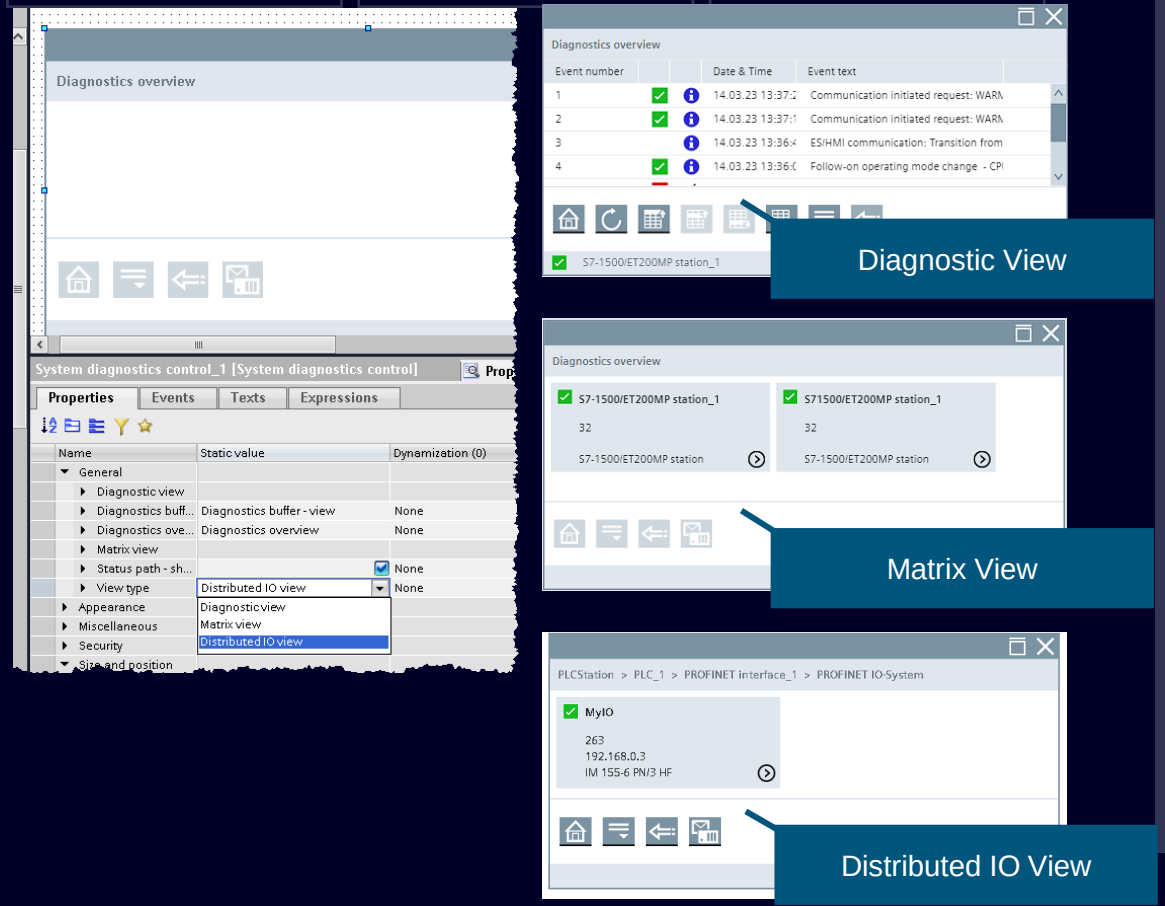
SIEMENS

WinCC Unified V19 – Diagnostics

System Diagnostics - Smart and easy monitoring of the shopfloor level

NEW

Unified Basic Panel	Unified Comfort Panel[1]	WinCC Unified PC[1]
✓	✓	✓



System Diagnostics

Smart and easy monitoring of the shopfloor level

Get clear indication of system components
Generic and automatic configured

System Diagnostic control

- Diagnostics View
- Matrix View
- Distributed IO View
  shows the distributed devices of the Profinet IO system

Notes:

- Distributed IO view works if only **one PLC with one Profinet IO system** is configured
- Otherwise, the RT jumps to the Diagnostic overview

1 Unified Comfort Panel and PC RT as of V18 Updates

SIEMENS

WinCC Unified V19 – Diagnostics

Process Diagnose - Comprehensive fault monitoring of production process[1]

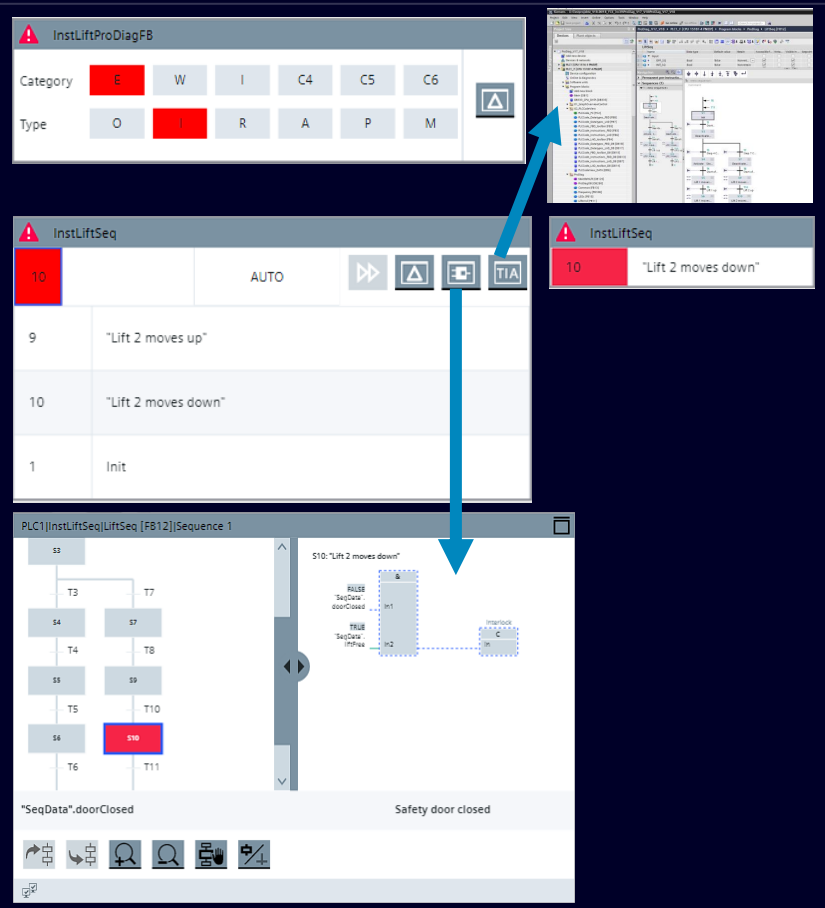
NEW

Unified Basic Panel	Unified Comfort Panel	WinCC Unified PC
✗	✓	✓

Diagnose Overview Control

GRAPH Overview Control

PLC Code Viewer



Process Diagnostics
Comprehensive fault monitoring of production process

Predefined generic views

- Diagnose Overview Control
  Show status of a PDiag supervision Block indicator including category and type
- S7-GRAPH Overview controls:
  overview over the current steps
- PLC Code Viewer for S7-GRAPH:
  Displaying Graph, LAD and FBD blocks

Scripting

- Jump into from GRAPH Overview Control to the PLC Code Viewer or into TIA Portal
- Open Alarm Control from Overview Control or Graph Overview control
- System functions to operate PLC Code Viewer

Style support for Overview controls

1 Unified Comfort Panel and PC RT as of V18 Updates

SIEMENS

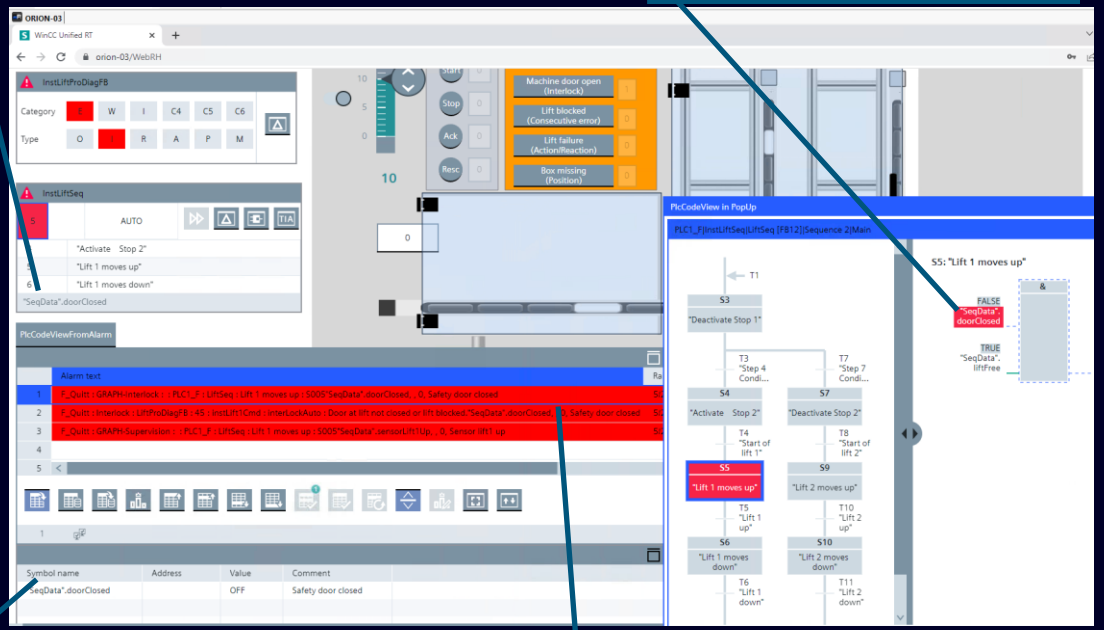
WinCC Unified V19 – Diagnostics
Process Diagnostics – Criteria Analysis[1]

NEW

Unified Basic Panel	Unified Comfort Panel	WinCC Unified PC
✗	✓	✓

1st faulty operand in GRAPH Overview

Faulty operands highlighting in PLC Code View



All faulty operands in new Criteria Analysis Control (Alarm Control Companion)

Criteria Analysis Alarm text extension

Comprehensive fault monitoring of production process

Criteria Analysis

- Criteria Analysis in GRAPH Overview, PLC Code View
- new Criteria Analysis Control
- Criteria Analysis Alarm text extension.

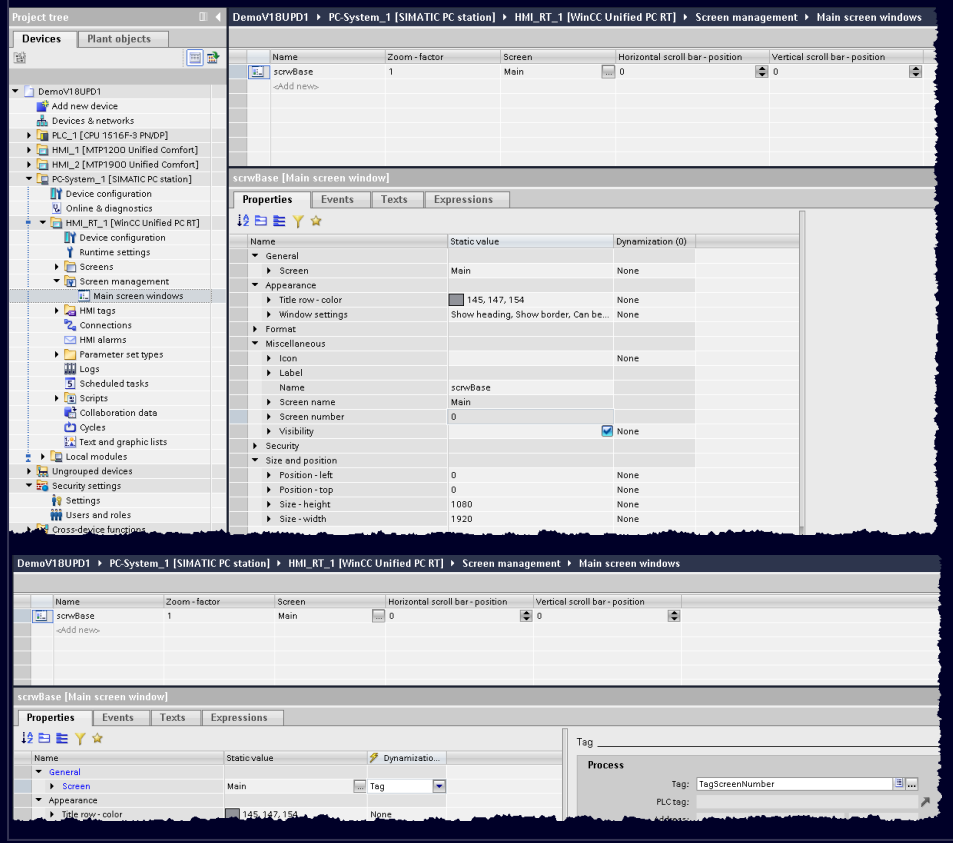
1 Unified Comfort Panel and PC RT as of V18 Updates

SIEMENS

WinCC Unified V19 – User Interface
Screen Improvements – Configurable main screen window[1]

NEW

Unified Basic Panel ✓ | Unified Comfort Panel ✓ | WinCC Unified PC ✓



A main screen window (root windows) can be configured

Zoom&Scroll for top-level screen window, define …
- a zoom factor at screen change,
- position and visibility of scroll bars and
- the scroll behavior of the top-level screen window

React on property changes of Main screen window like:
- Zoom factor
- Scroll positions
- Size of browser window changes

Dynamize the base screen via PLC tag
- trigger the screen change via number

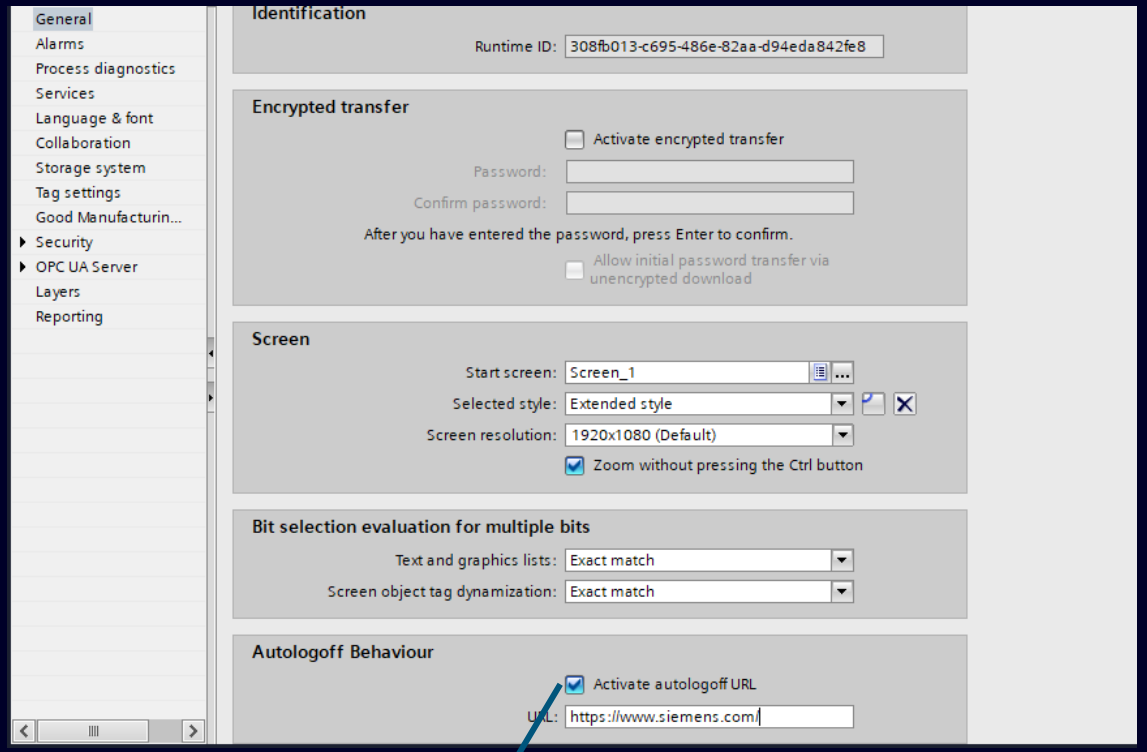
1 Unified Comfort Panel and PC RT as of V18 Updates

SIEMENS

WinCC Unified V19 – User Interface
Redirect to customer configured URL after automatic logout

NEW

Unified Basic Panel ✗	Unified Comfort Panel ✗	WinCC Unified PC ✓



Autologoff URL can be configured in Runtime settings

Configured URL after automatic logout in case customer want

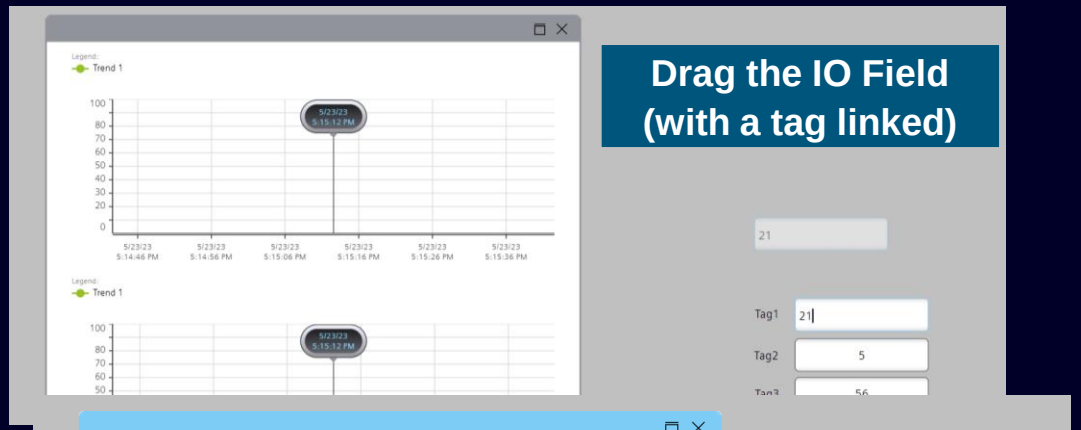
- To redirect to his corporate page
- To have specific landing page
- To reduce connections to Runtime server after automatic logout

SIEMENS

WinCC Unified V19 – User Interface
Configure the Trend Control at Runtime (DnD online tags)

NEW

Unified Basic Panel ✗	Unified Comfort Panel ✗	WinCC Unified PC ✓



Add new trends in the trend control in the runtime

simply by dragging and dropping an IO Field to the trend control.

- Drag an IO field with the mouse
- Drop the IO field into a Trend Control Area
- The tag is trended in the control

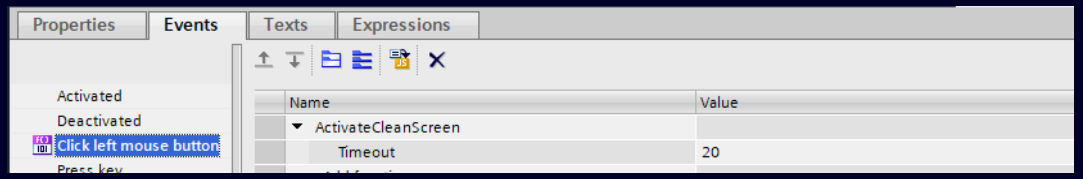
Hints:
- Working for online tags
- Trend Area has not to be pre-configured for the tag
- Remove tag from trend control via functions of trend control
- Trend is not persistent / available in trend control after screen change

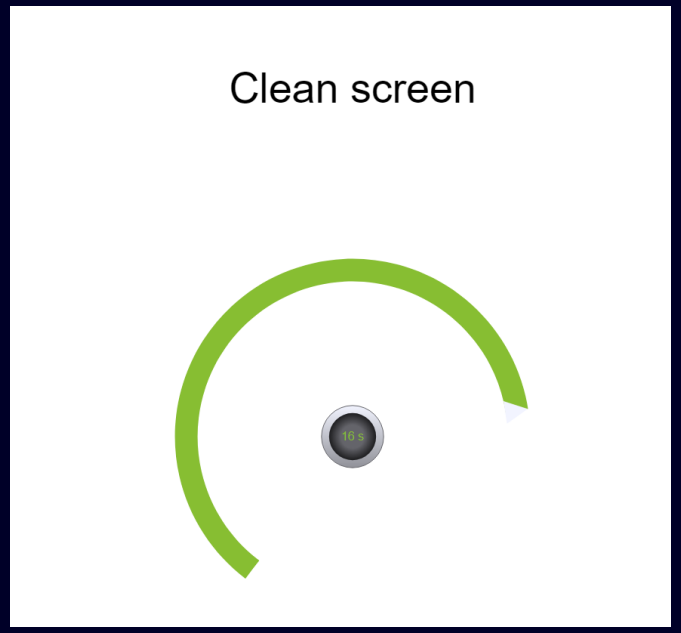
SIEMENS

WinCC Unified V19 – User Interface
New system function - ActivateCleanScreen[1]

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓





Blocks the touch input during the cleaning of the screen

- A new system function is implemented to enable the monitor screen being cleaned
- A full screen overlay is displayed to avoid unintended operation
- On UCP touch is blocked which avoids that toolbar at the buttom shows up

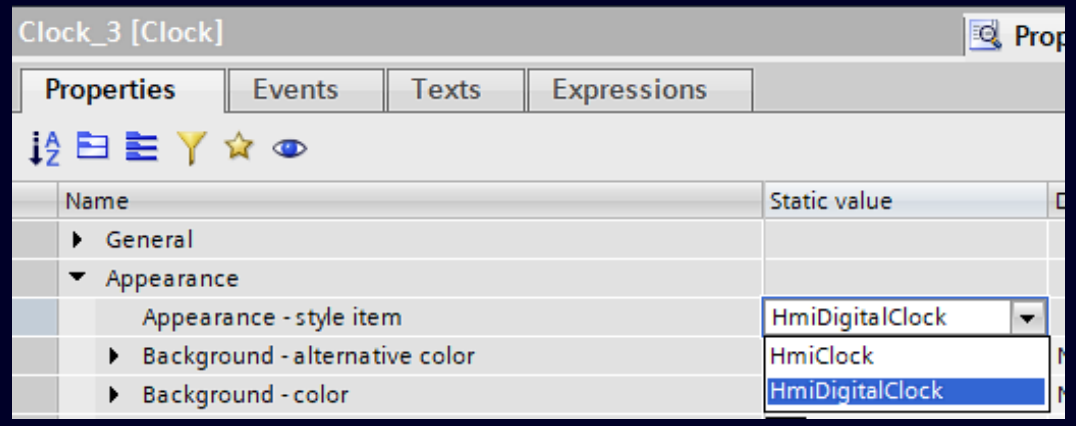
1 As of V18 Update 2

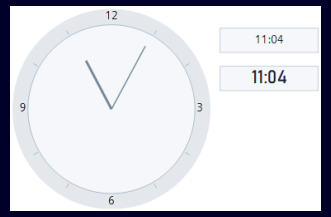
SIEMENS

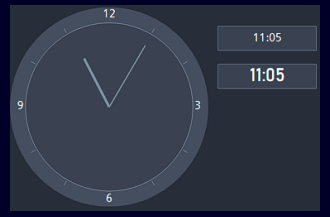
WinCC Unified V19 – User Interface
Clock available in analogue and digital display

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓







Clock available in analogue and digital display

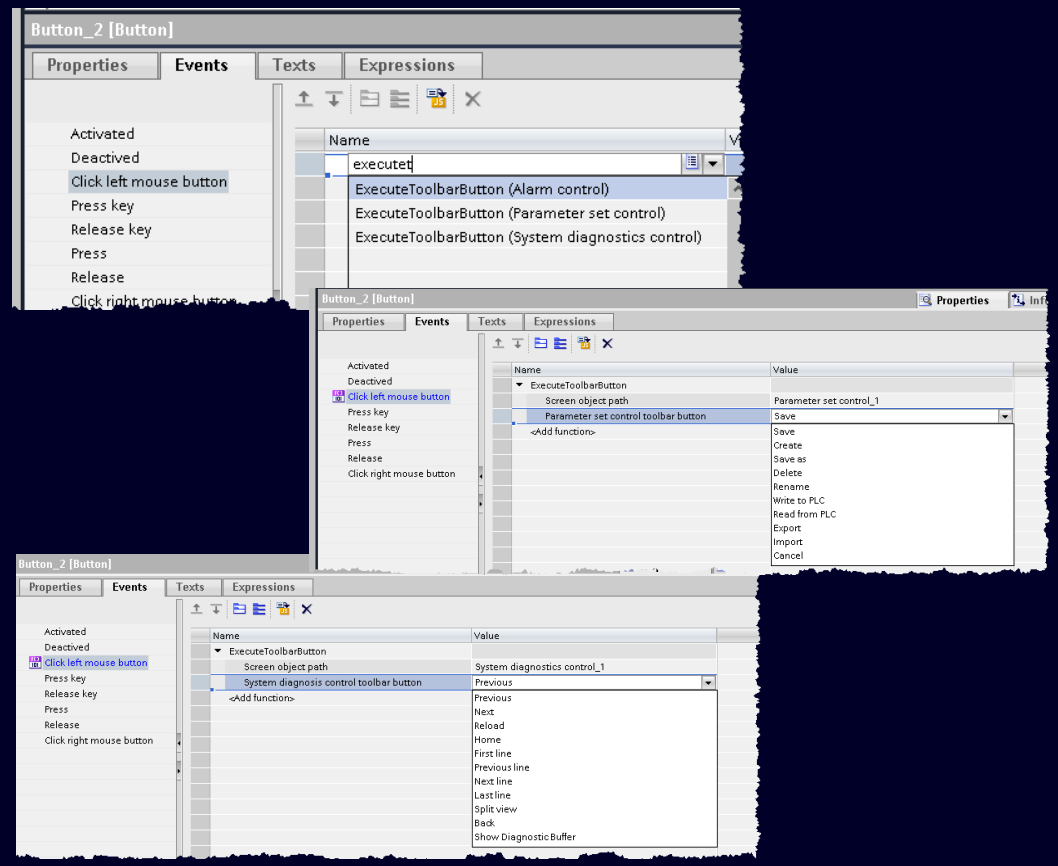
- Dial can be set to analog display

SIEMENS

WinCC Unified V19 – User Interface
Screen Improvements - System functions “to ExecuteToolBarButton”

NEW

Unified Basic Panel	Unified Comfort Panel[1]	WinCC Unified PC[1]
✓	✓	✓



Create own screens and execute control functions via “own buttons”

Trigger toolbar functions via external buttons

Alarm control
- Single Acknowledgement
- Group Acknowledgement

Parameter Control
- Save, Create, Save As
- Delete, Rename
- Write to PLC, Read from PLC
- Export, Import, Cancel

System diagnostics control
- Previous, Next, Reload, Home,
- First line, Previous line, Next line, Last line
- Split view, Back, Show diagnostics buffer

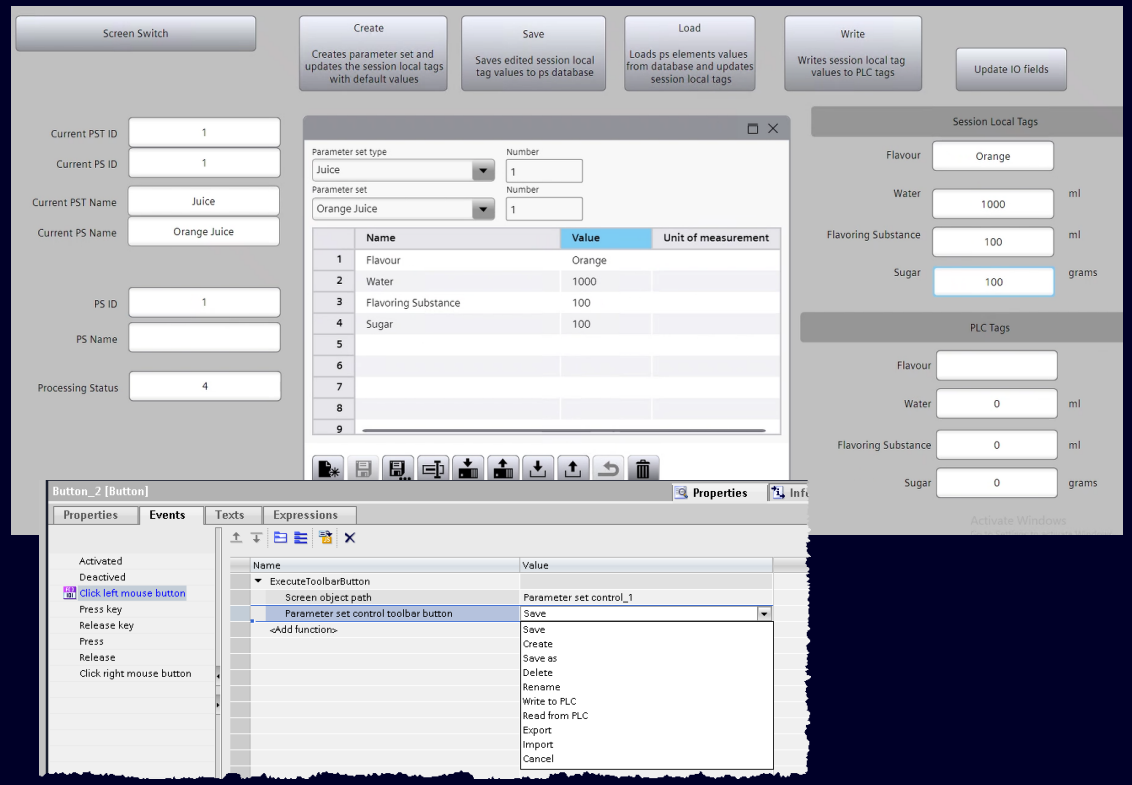
1 As of V18 Update 1

SIEMENS

WinCC Unified V19 – Parameter Control
Create your own recipe screen[1]

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓



Customized recipe screen upon user workflow

Access to PaCo control toolbar via system functions

- Trigger toolbar Parameter Control functions via external buttons
  - Save, Create, Save As
  - Delete, Rename
  - Write to PLC, Read from PLC
  - Export, Import, Cancel

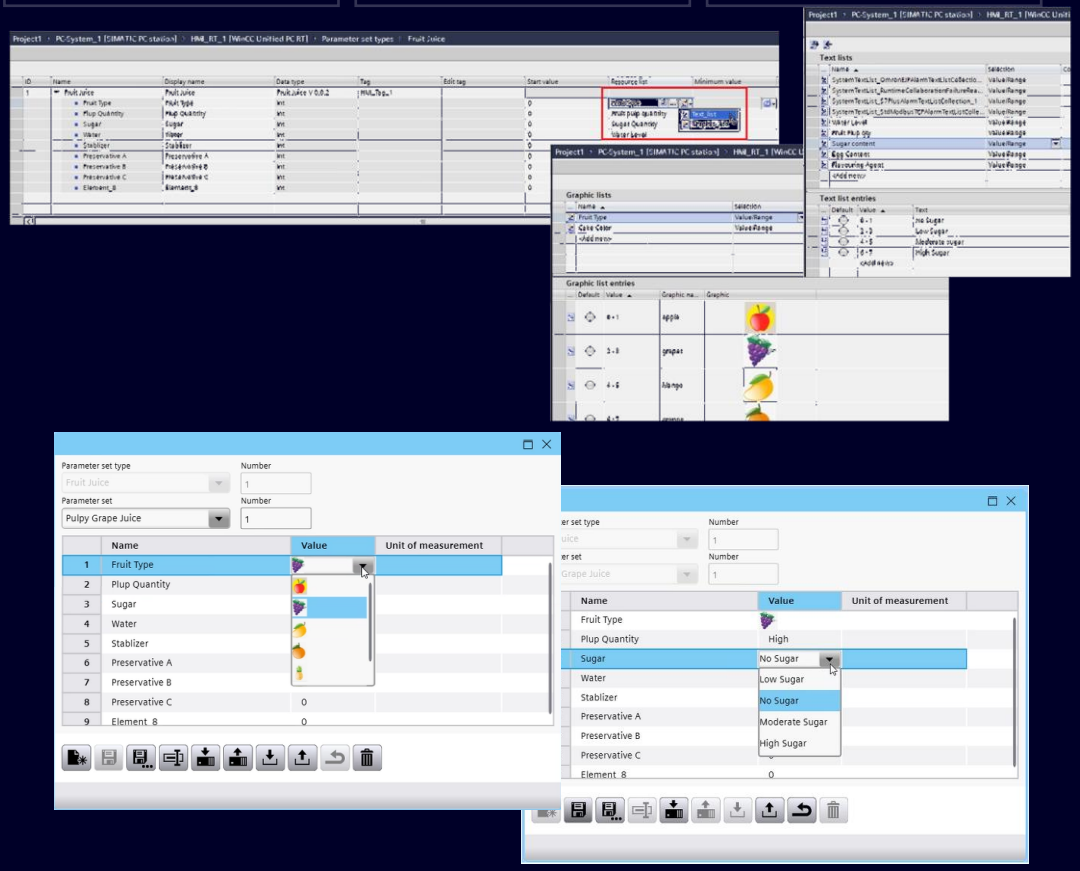
1 As of V18 Update 1

SIEMENS

WinCC Unified V19 – Parameter Control
Handle enumeration types for parameters

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓



Handle enumeration types for parameters

Use of text and graphic lists in parameter set types

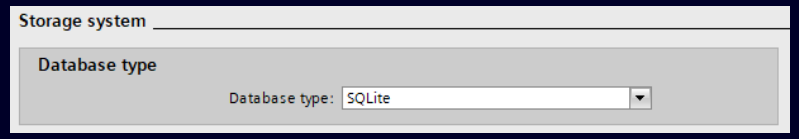
- Configuring enumeration types (text or graphic based) for parameters
- User able to select parameter values based on Text or Graphic representation

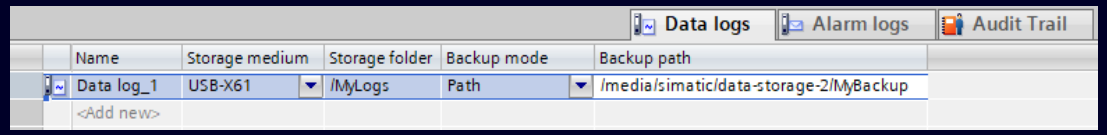
SIEMENS

WinCC Unified V19 – File-based Logging
Automatic segment backup also for SQLite logging [1]

NEW

Unified Basic Panel ✓ | Unified Comfort Panel ✓ | WinCC Unified PC ✓





Automatic segment backup also for SQLite logging

- Automatic segment backup for SQLite on Unified PC and Unified Panels
- For both Unified Comfort and Basic Panel
- For all logs incl. Data log, Alarm log, Audit trail log
- Note: Segment restore from backup still to be added on Unified Panels
- Partial replacement for former use cases of "CopyLog" systemfunction

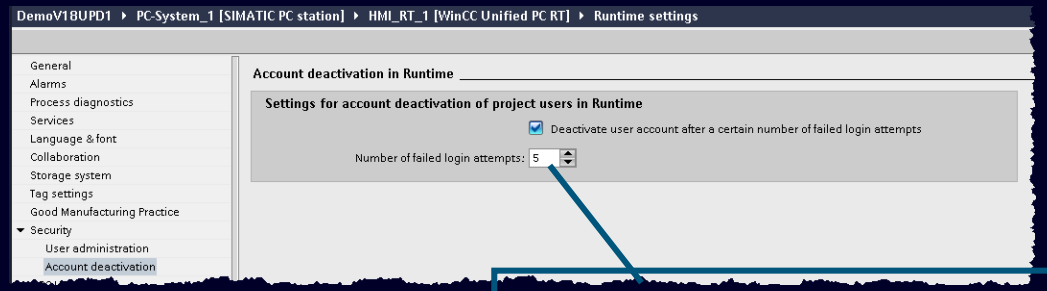
1 As of V18 Update 1

SIEMENS

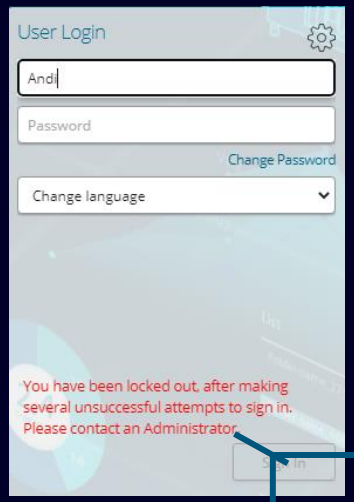
WinCC Unified V19 – User authentification
Handling of maximum login errors [1]

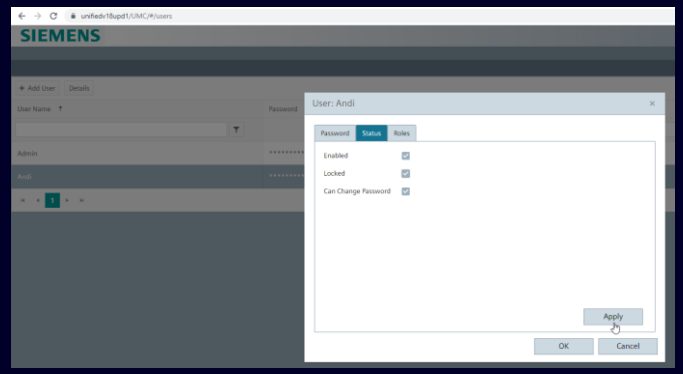
NEW

Unified Basic Panel ✓ | Unified Comfort Panel ✓ | WinCC Unified PC ✓



Number of failed login attempts





User is locked

Define number of incorrect login attempts in ES in order to secure the system for unauthorized access

Account deactivation can be activated in Runtime settings for local user management

- In the runtime settings, you can specify whether and after how many failed login attempts a user is blocked.
- Deactivate user account after a certain number of failed login attempts for local user management
- Unlocking the user by the UMC administrator

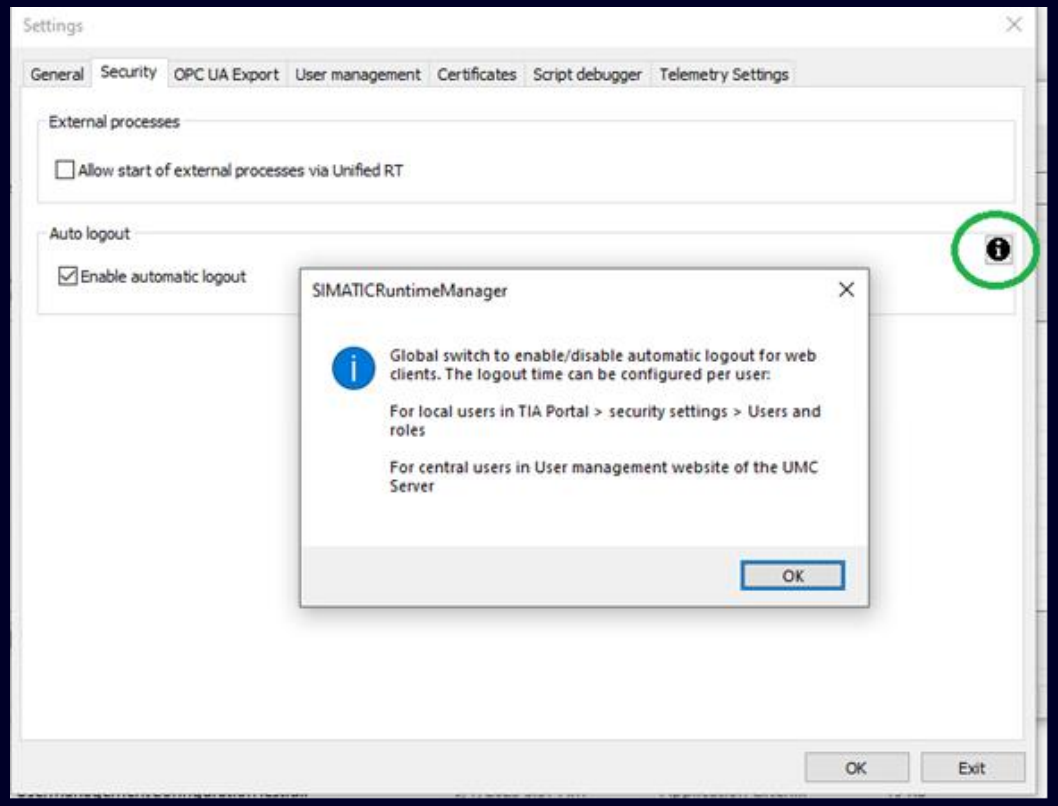
1 As of V18 Update 1

SIEMENS

WinCC Unified V19 – User authentification
Autologoff

NEW

Unified Basic Panel	Unified Comfort Panel	WinCC Unified PC



Autologoff

Autologoff functionality for web clients for Unified PC

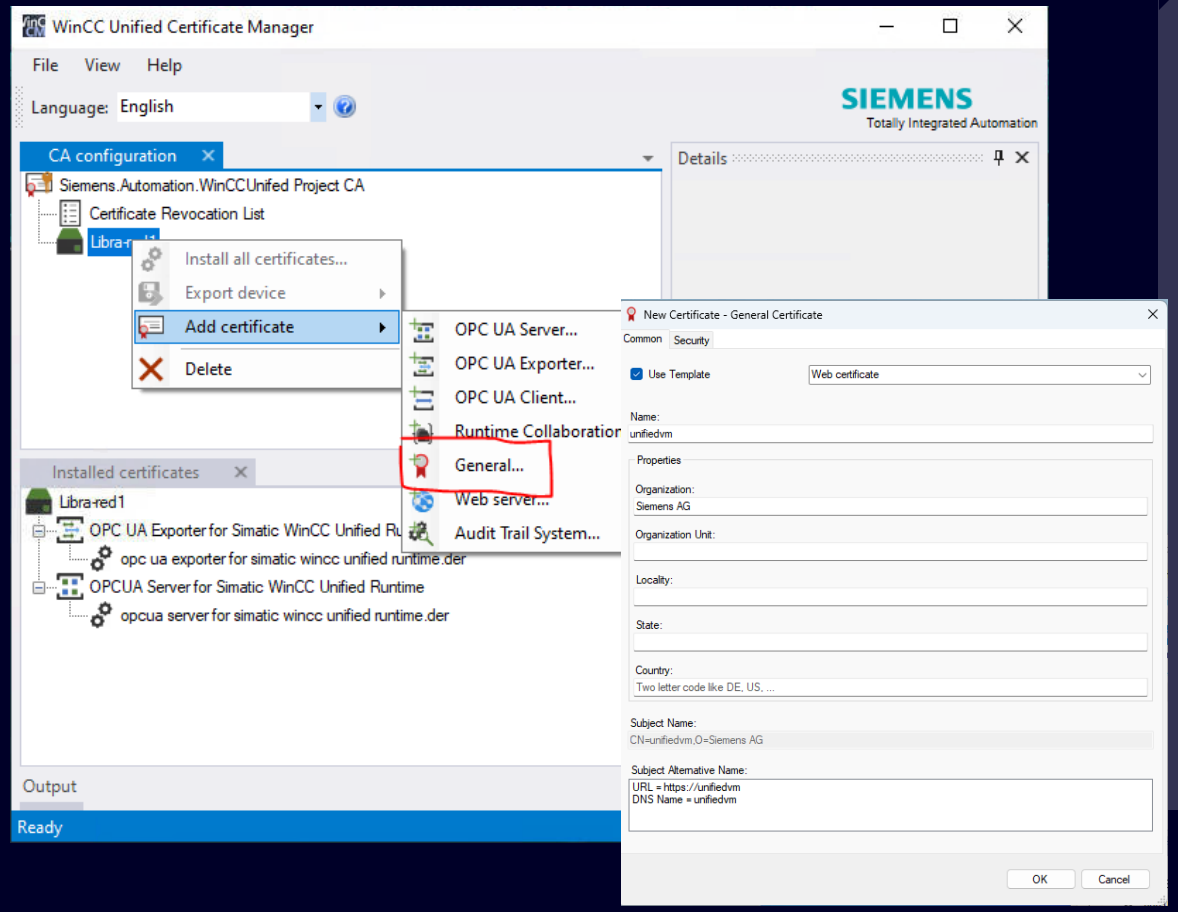
- User is automatically logged off after the configured inactivity timeout
- Functionality must be enabled in RT manager to keep the compatibility to previous versions
- Timeouts can be configured per user either in TIA Portal (local users) or in User management website (central users)

SIEMENS

WinCC Unified V19 –
Certificate manager

NEW

Unified Basic Panel	Unified Comfort Panel	WinCC Unified PC
✗	✗	✓



General certificate

Create a general certficate for customer applications via Certificate manager

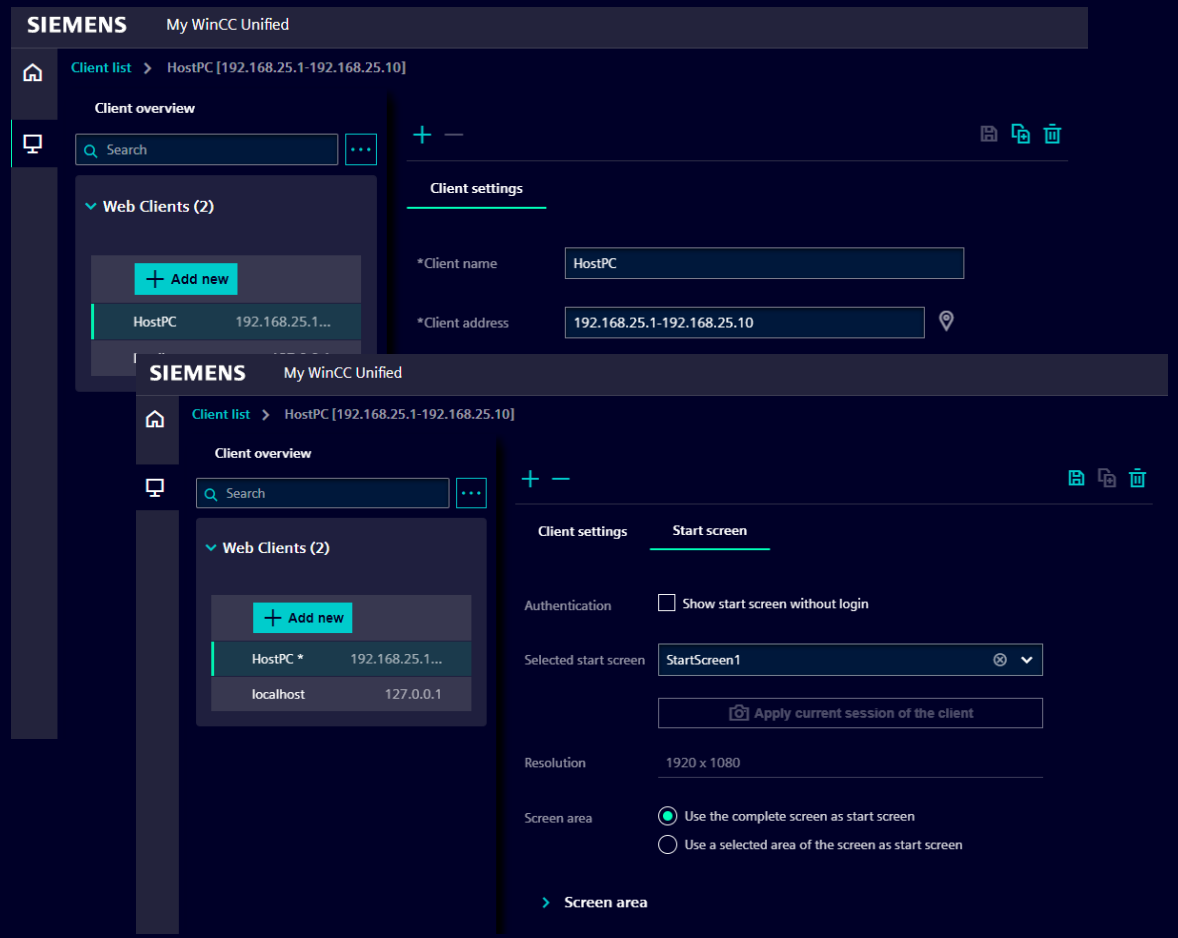
- Certificate content can be chosen by end user
- Certificate can be exported
- Template for web certificate

SIEMENS

WinCC Unified V19 – Personalized HMI
Define device specific start screen

NEW

Unified Basic Panel	Unified Comfort Panel	WinCC Unified PC



Define a device specific startup of the user interface

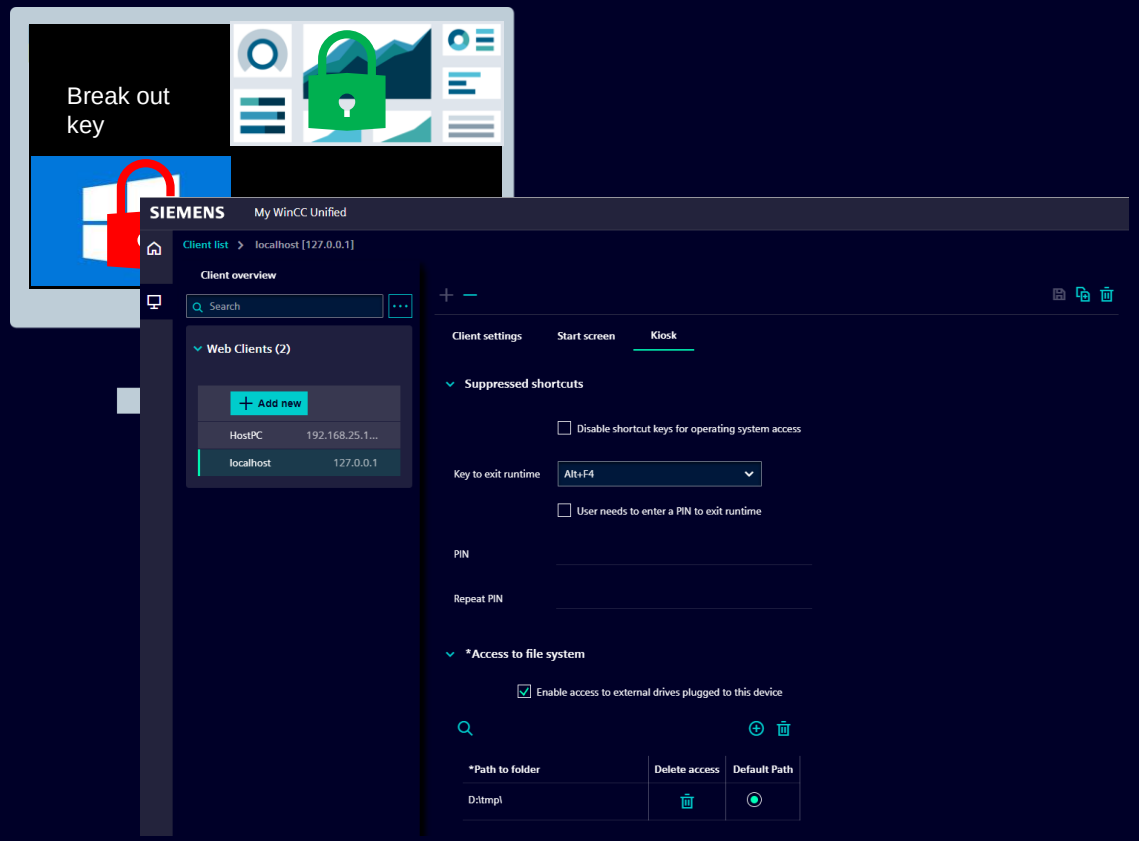
- Define the device specific start screen (defined via IP address or via IP address band)
- Define the device specific zoom level and position of zoomed area
- Automized login with a default user

SIEMENS

WinCC Unified V19 – Personalized HMI
Configure a kiosk mode for web clients

NEW

Unified Basic Panel	Unified Comfort Panel	WinCC Unified PC



WinCC Unified Kiosk Mode

Automatic opening of the UI in a full screen mode without access to the operating system

- Setup windows kiosk mode using a “lock down” App
- For Local & remote web clients
- No dependencies to Windows user
- Enclosed for operator to operating system
- Block Keyboard commandos
- Configurable „Break out“ key

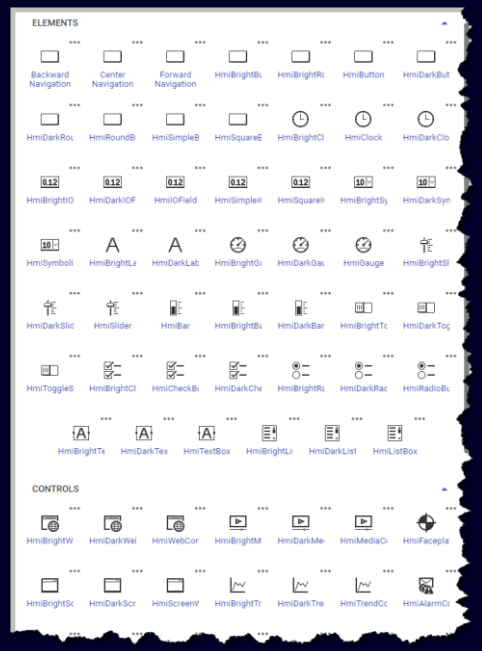
SIEMENS

WinCC Unified V19 – Corporate Design

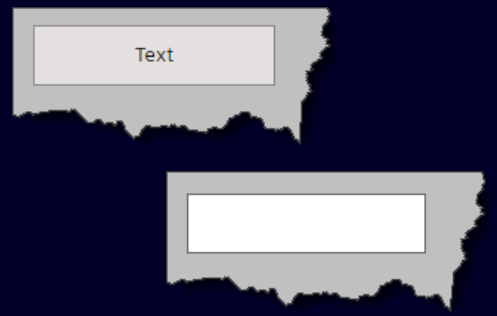
Your tool to create your distinctive UI – Fast and easy

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓



New style library
with plenty of choices



Examples having sharp corners
and without color gradient

New Style Libraries

- Corporate Designer offers a new style library
- Elements and Controls are available in characteristic and frequently asked designs (e.g. curved corners).

User Defined Styles

- Create your user defined styles based on the style library, import it in your project and assign it to your WinCC Unified device.

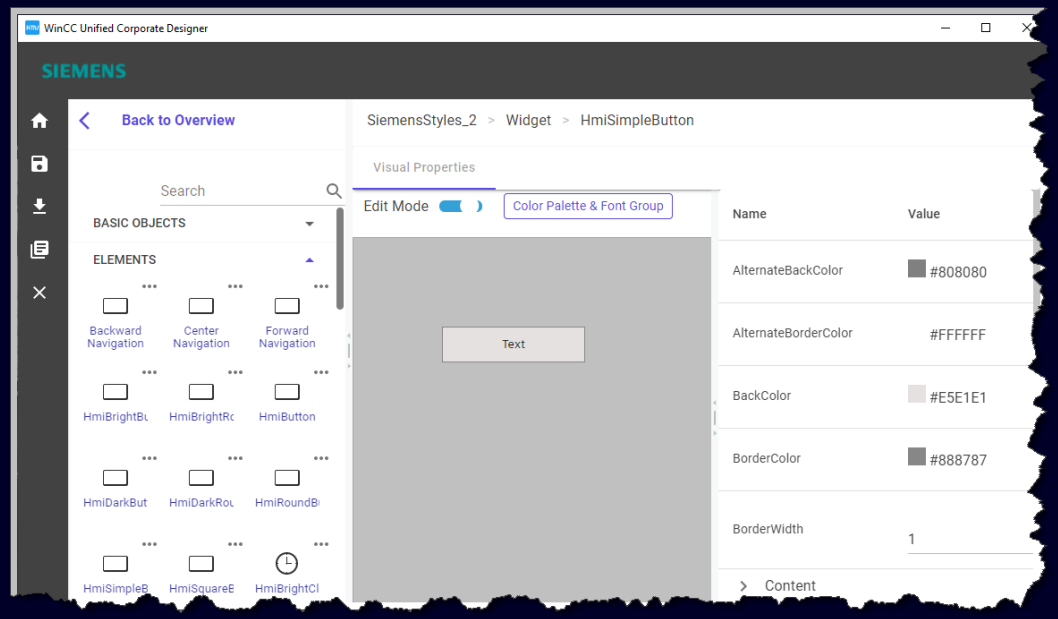
- Free download in SIOS

SIEMENS

WinCC Unified V19 – Corporate Design
Your gate to coworking with UX-designers

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓



Self-contained

- The WinCC Unified Corporate Designer is independent from TIA Portal installation.

Centralized

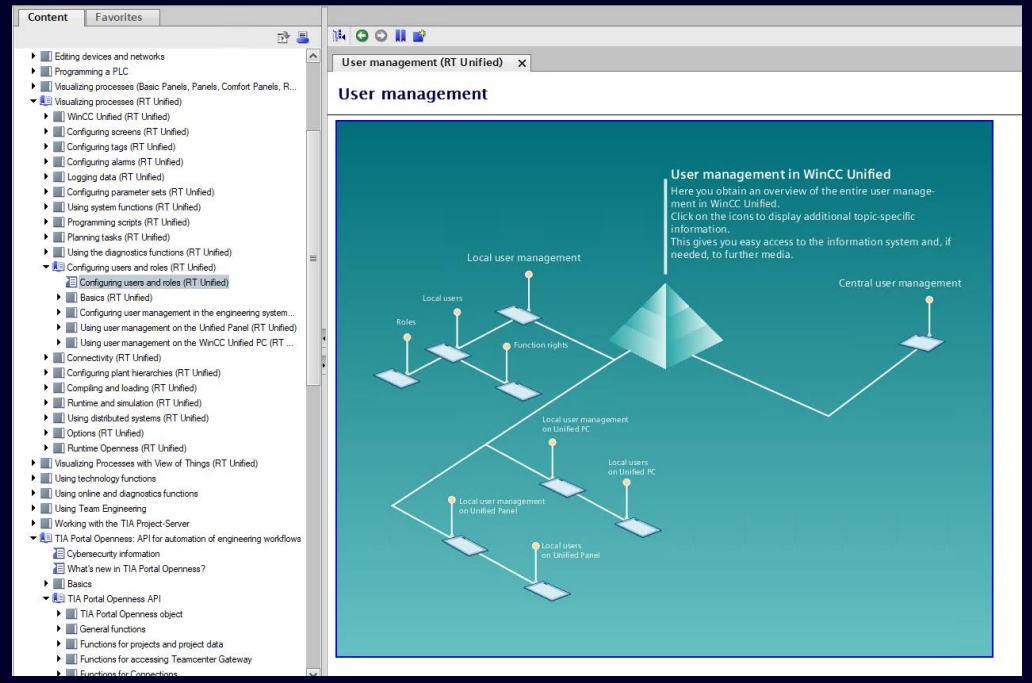
- Create, export, import and maintain your user defined styles centrally based on your library.
- Concurrently work on your engineering project in TIA Portal.

SIEMENS

WinCC Unified V19 – Documentation
Graphical access to information

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓



Graphical access

- Access relevant information with only a few clicks
- Don‘t waste time with reading and searching

Access relevant information

- in TIA information system
- In SIEMENS Online Industry Support
- Videos
- Additional information

Available for the chapters with information about

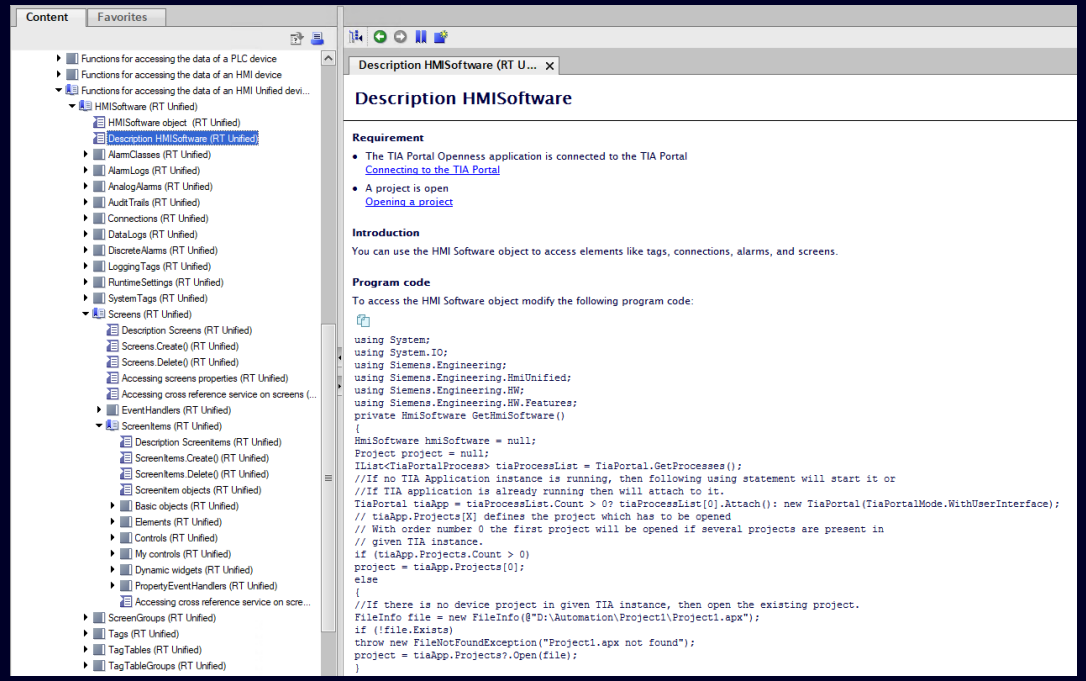
- User management
- Handling of certificates

SIEMENS

WinCC Unified V19 – Documentation
TIA Portal Openness for Unified devices

NEW

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓



Object-oriented approach

- Structure of documentation strictly according to the object model
- Easy access to objects and methods

Code snippets

- One code snippet which allows to work directly with Unified objects without need to read or copy snippets from other parts of Openness documentation
- Code snippets as complete function call
- Code snippets tested and compilable without errors

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WinCC Unified V19
Highlights PI options – Performance Insight & Calendar

Unified Basic Panel	Unified Comfort Panel	WinCC Unified PC
✗	✗	✓

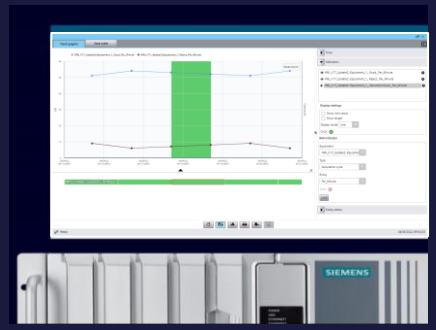
Shifts
supporting of calendar shifts in PFI

Shifts
improved handling of shift offsets

Switching commands
improved notification on failure

Audit support
of calendar switching commands

GANTT chart
Improvements of handling and display



SIMATIC WinCC Unified V19
PI Options: Performance Insight & Calendar

Reporting
of reason groups and reasons

Dashboard control
UX improvements

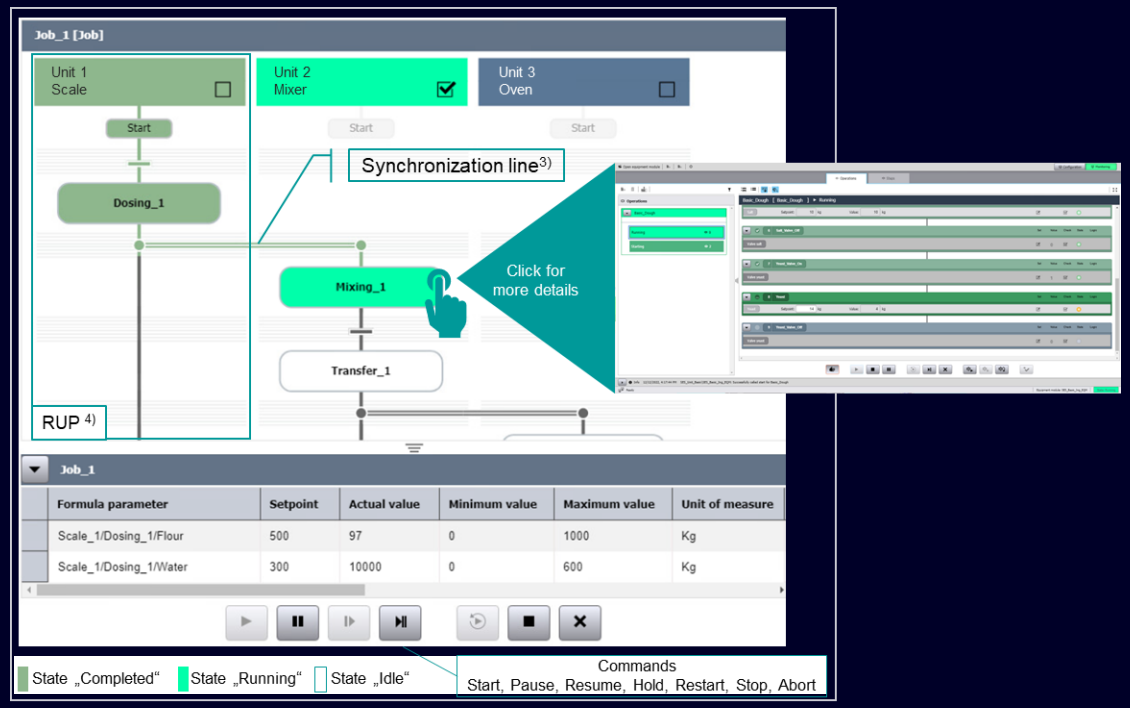
Misc Controls
improved displaying of names

Audit support
of miscellaneous values

SIEMENS

WinCC Unified V19 – Plant Intelligence Options
Sequence and Line Coordination

Unified Basic Panel	Unified Comfort Panel	WinCC Unified PC
✕	✕	✓



- **Simple Engineering** through mapping of the plant model according to ISA-88
- **Individual user program** for process automation as Sequence (SES unit) or PLC code (LCS unit)
- **Efficient Recipe management**[1)] for the creation and administration of procedures and recipes
- **Handling of parameters** as material
- **Transparent monitoring** of planned and ongoing production processes
- **Archiving** of production data for transparency and traceability
- **Excel based reporting** for documentation of the production data
- **Integration into Audit** for operation execution

[1)] One unit (RUP) without synchronization when using WinCC Unified Sequence alone
WinCC Unified Line Coordination offers up to 50 units
[2)] As of V18
[3)] Synchronization = Interface between 2 or more units which are dependent on each other
[4)] RUP = Recipe Unit Procedure

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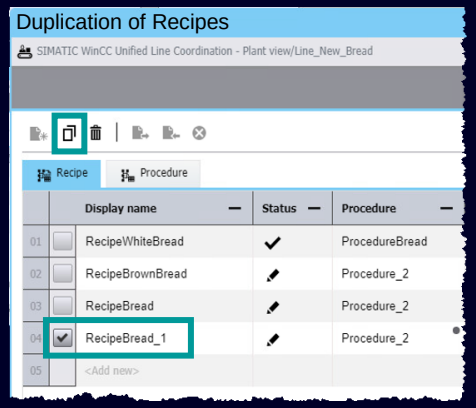
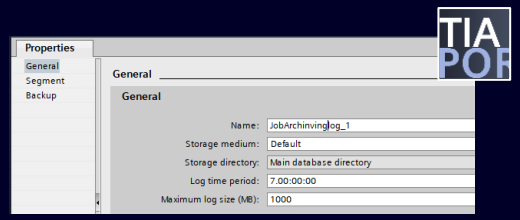
WinCC Unified V19 – Plant Intelligence Options
Sequence and Line Coordination

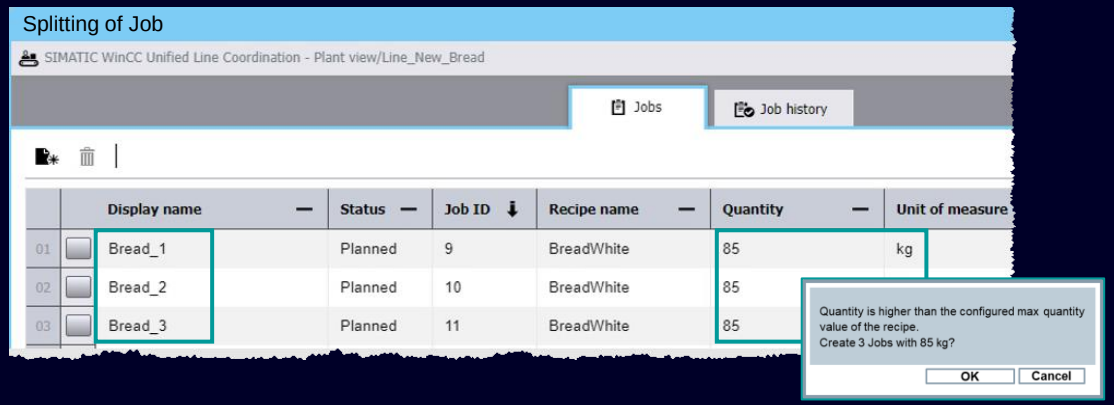
Unified Basic Panel ✕	Unified Comfort Panel ✕	WinCC Unified PC ✓

Duplication of Recipes





Splitting of Job



Efficient authoring workflow of recipes
- Faster creation of recipes by duplication of existing ones

Efficient Job Management
- Splitting of Job in several jobs automatically depending on desired quantity to be produced (> defined max. quantity)

Reliable Job Management
- Configurable data log of Job archiving data for access to long term historical production data
  (Settings and segmentation as known from Logging)

SIEMENS

TIA Portal V19
SIMATIC WinCC – Innovations

SIMATIC WinCC Unified – Innovations

- New device versions for Unified PC RT, Unified Comfort Panel and Unified Basic Panel
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- Multiuser Engineering on screen level
- Standardization: extensions for faceplates and libraries
- Visual Studio Code as development environment for JavaScript
- Automatic login and auto-logoff on remote clients for PC RT
- Client device specific start screen for PC RT
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- Corporate Designer to create styles

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- WinCC Professional: Faceplates for WebUX, REST API

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SIMATIC Motion Control – Innovations

- SIMATIC Motion Interpreter
- Torque precontrol
- Monitoring Measuring Input
- New Axis Control Panel
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- Advanced Programming
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SINAMIC Startdrive – Innovations

- New drives: SINAMICS S200, S210 (New), G220, S120M
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TIA Portal Cloud & Cloud Connector

- Overview of new functions

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- S7-1500: Hardware Innovation for Compact CPUs 1511C and 1512C
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WinCC Innovations V19
Highlights WinCC RT Advanced

No new RT Advanced version

Ensured Compatibility of WinCC Advanced
- Newest update of stable V17 version of RT Advanced available
- No new licenses necessary for WinCC RT Advanced V17 necessary

Engineerable within TIA Portal V19
- WinCC RT Advanced can be engineered with TIA V19

Support of Operating Systems with V19
- Windows 11 Professional
- Windows 11 Enterprise
- Windows Server 2022

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WinCC Innovations V19
WinCC RT Professional - news

WinCC Professional ES

- Parallel installation of WinCC Unified ES and WinCC Professional ES on one PC
- Simulate WinCC RT Professional and WinCC Unified PC RT in parallel
- It is mandatory to install the simulation of WinCC RT Professional separately

WebUX

- Support of faceplates

Communication

- REST API interface
  (passive interface to read and write tags)
- Tag granular OPC read and write Protection for Tags
- Security improvement:
  OPC XML Client & Server removed

WinCC RT Professional startup behavior

- Disable operating system access on startup (splash screen)

New Design

- Added new designs (standard objects)
  - Retro
  - Ocean

Browser Control

- RT Browser control with 2 modes:
  - IE-Engine (for compatibility)
  - Chromium-Engine (for modern HMTL5 web content)

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TIA Portal V19
SIMATIC STEP 7 – Innovations

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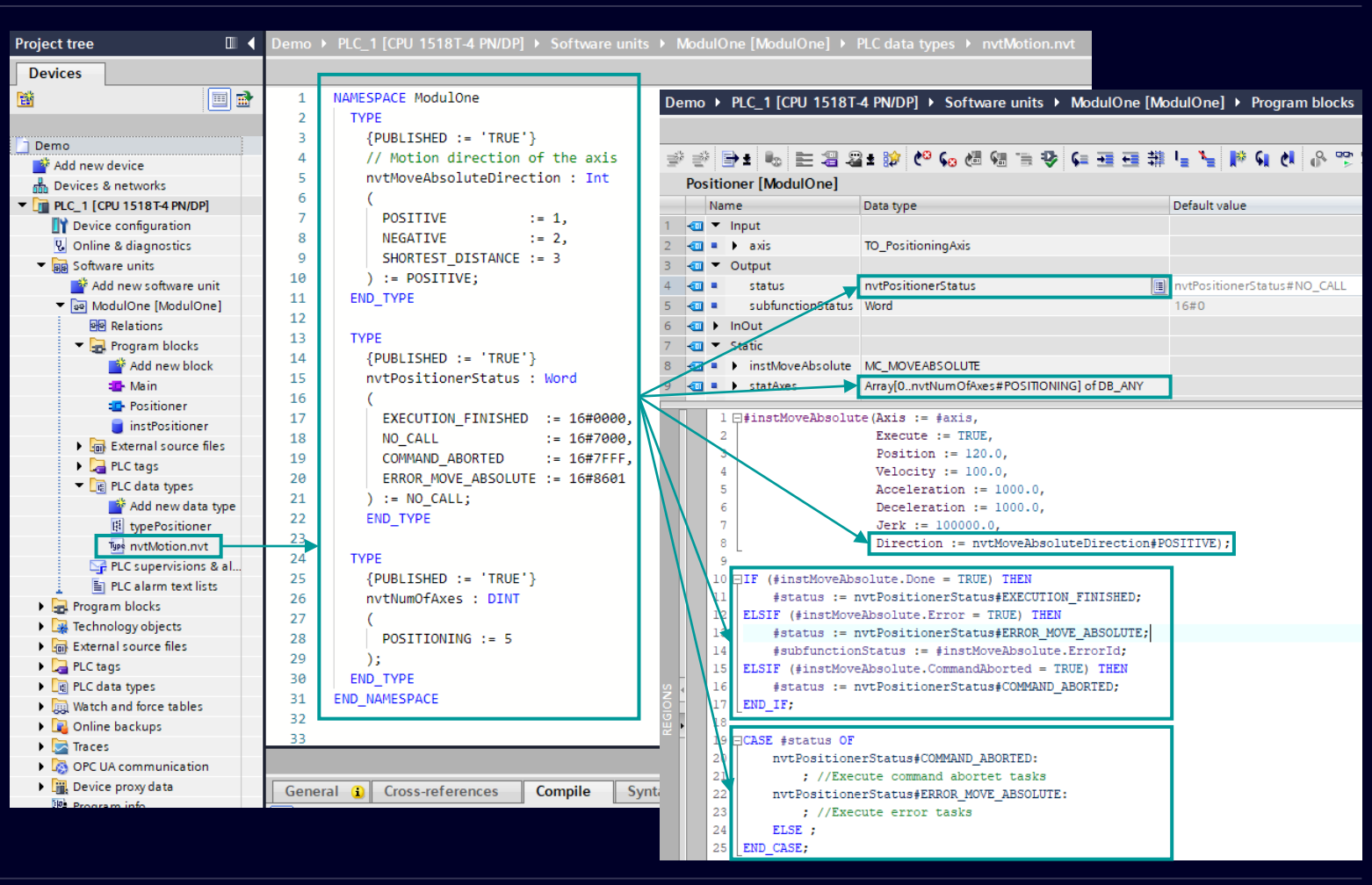
STEP 7 – Innovations
Named value data types within Software Units



Data types with named values based on IEC 61131-3

Within software units, user can create now data types with named values (NVTs). It is a data type that is defined by a set of named, constant values of a certain elementary data type (Byte, Word, Int, ...). Variables of the data type named value can also accept values that are not defined in the NVT.

Benefits

- **Readability and Maintainability -** Meaningful names to constants make the code more intuitive and self-explanatory
- **Applicable on existing code base -** Existing library blocks don´t need to be adapted, as NVTs with a corresponding elementary data type can be used as a block parameter
- **Avoiding hardcoded numbers -** Makes programming less error-prone
- **Autocompletion for NVTs -** Reduces the chances of typographical errors
- **Refactoring and Extensibility -** New options or states can be easily added without affecting existing functionality

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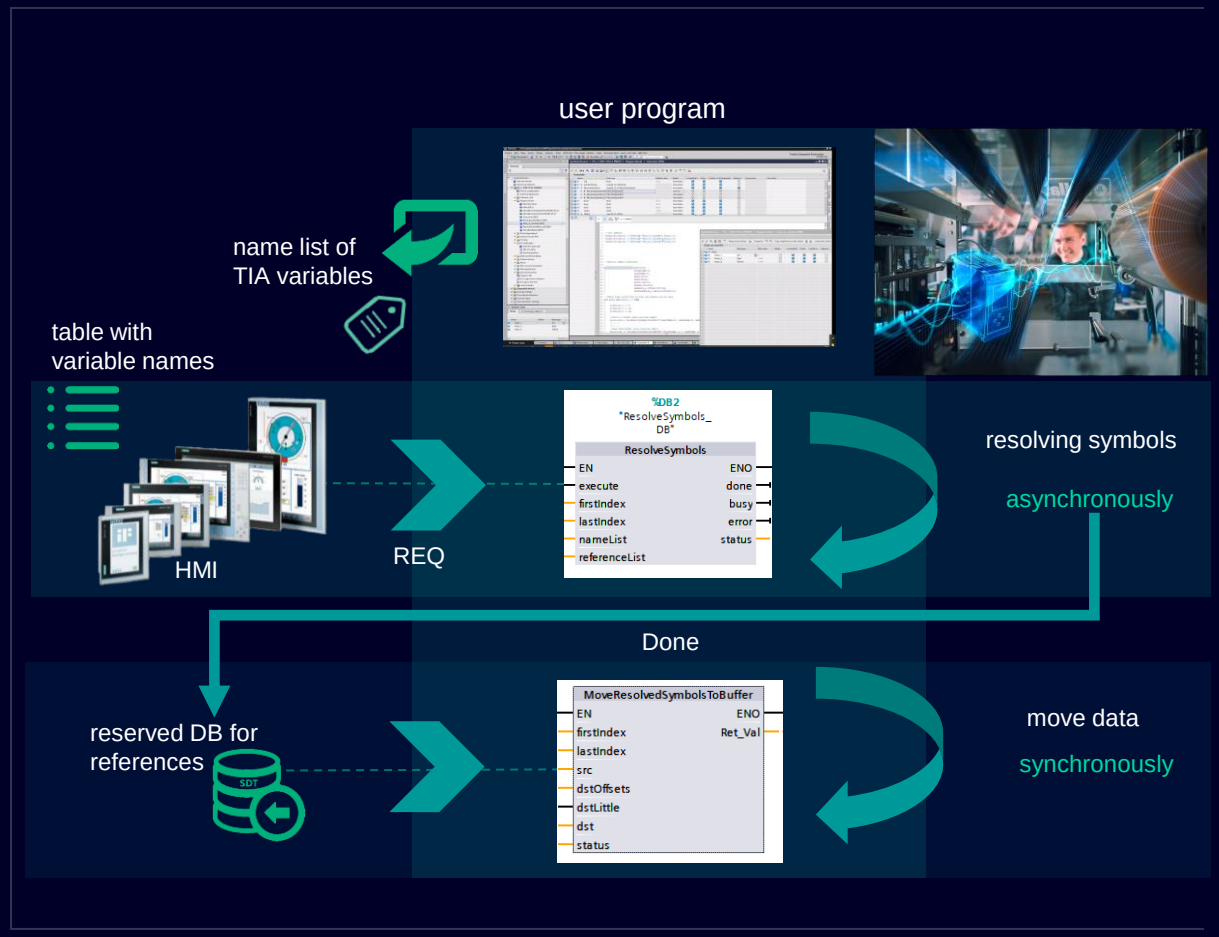
STEP 7 – Innovations
Symbolic Access @ Runtime – Support of structs and data types



SymbolicAccess@Runtime

- Tag names (string variables) can be resolved into the corresponding memory addresses at runtime and thus used for reading / writing data
- **V19:** Support of additional data types like (W)Strings, Arrays, UDTs, Array of UDTs, …

Benefits

- Reading / writing of certain tags by providing their symbol name from an external device (e.g. HMI) as a string
- Migration of ANY-Pointer use cases to symbolic programming
- Possibility to trace any data from a S7-1500 PLC on a 3rd party device

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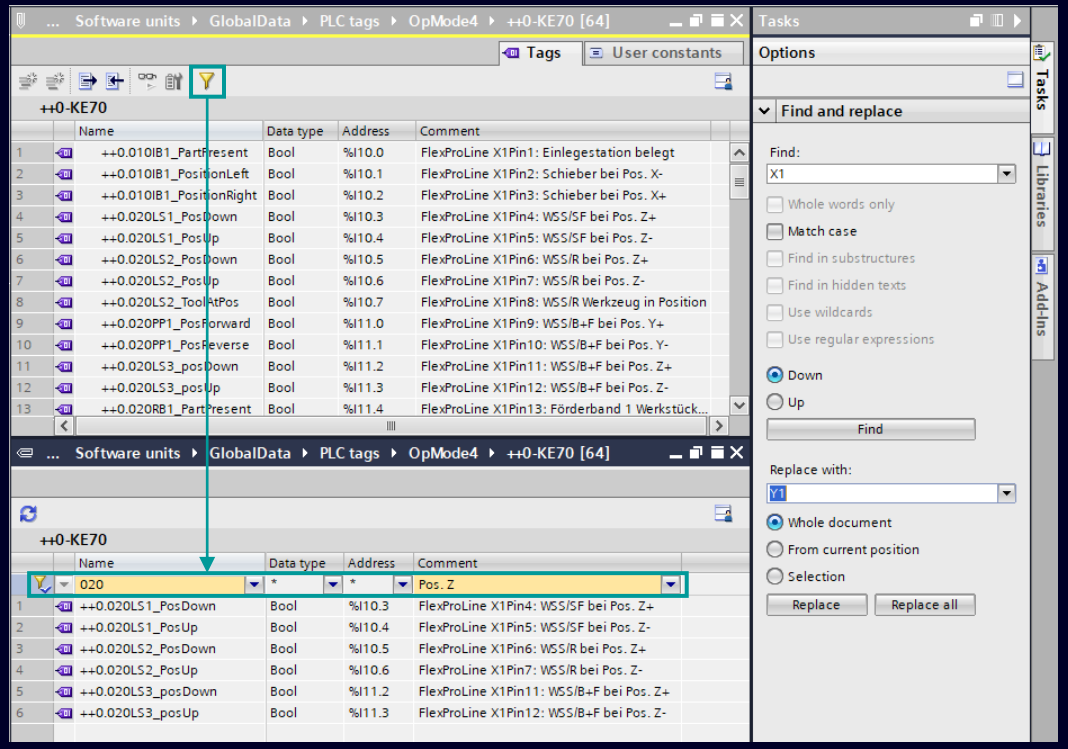
STEP 7 – Innovations
General Improvements

PLC tag tables –

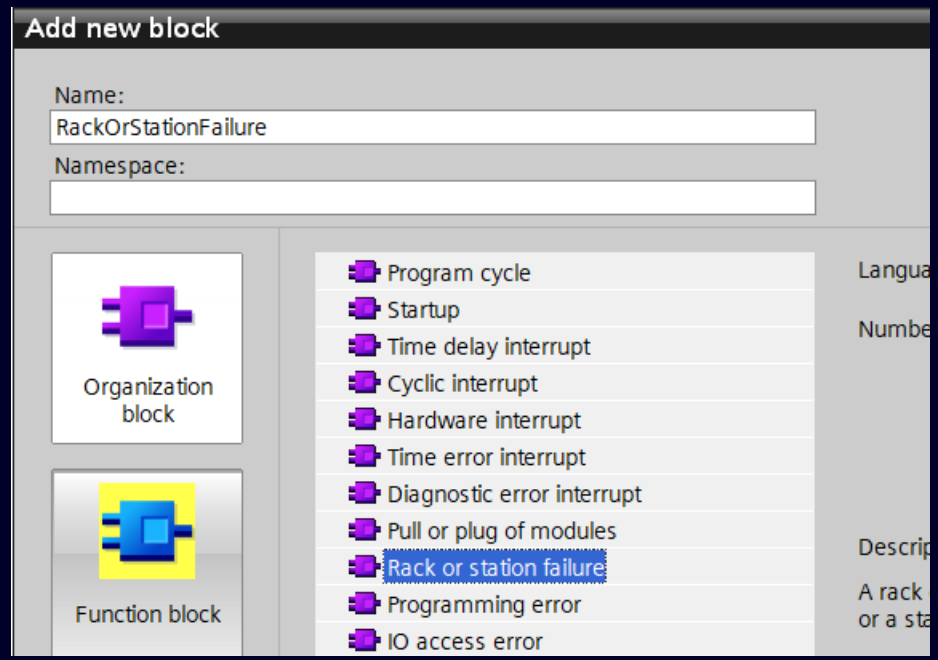
New filter view with column filter

PLC tag tables now offer a filter view. This view offers a column filter to add filter criteria. These filters particularly support the user when searching for and replacing entries.



Standard conformity for default names for OBs

- Default names for Organization blocks contain only IEC 61131 compliant characters (no spaces or dash anymore)
- Easier usage of OBs in conjunction with Namespaces



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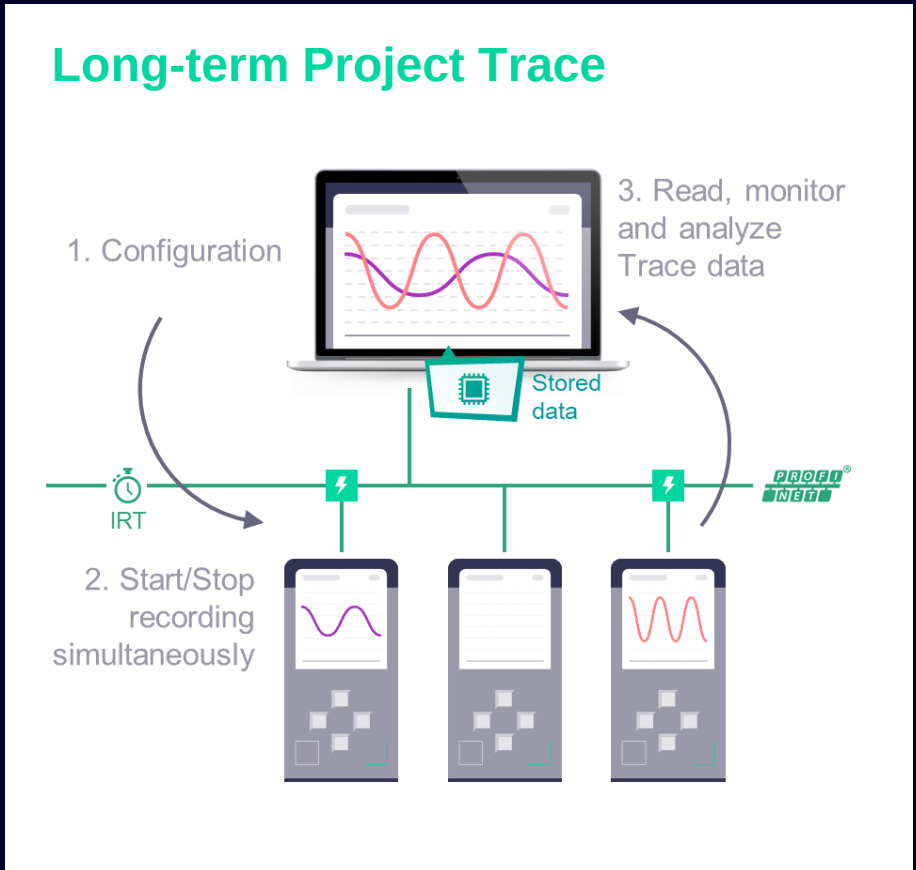
STEP 7 – Innovations
Long-term Trace



Long-term Trace for better analyzing sporadic errors or optimize machinery parameterization

- Recording of up to 64 [1] different signals [2] in “csv”-files for a long time (days, weeks, months ….)
- Motion-Cycle-synchronous (e.g. MC-Servo) recording ensures qualified analyzes of the signals
- The recorded “csv”-files can be exported and analyzed via third party tools also

New in V19:

- Also available now for R/H-CPUs
- Now Live-Monitoring while recording
- Now Longterm Project Trace at projects with up to 5 PLCs
- Now Combined Measurements for Longterm traces available to be able to compare values from different measurements

1 with FW V3.0
2 Supported: Bool, Byte, INT, DINT, LINT, USINT, UINT, UDINT, ULINT, WORD, DWORD, LWord, REAL, LREAL, Date, Time, LTime, Time Of Day, Long Time Of Day, Long Date Time
Not supported: whole Arrays/Structs/UDTs, Date_And_Time, Date_And_LTime, Char, WChar, String, S5Count, S5Time...

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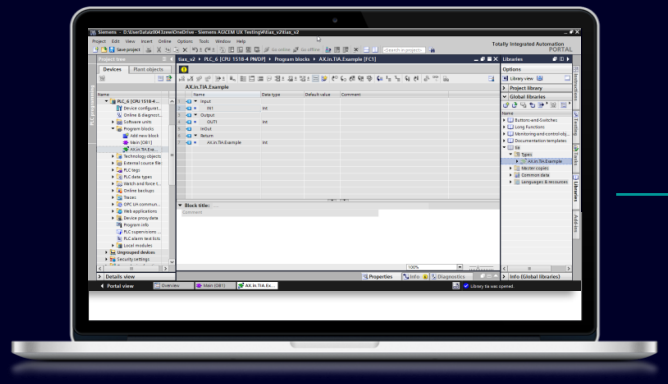
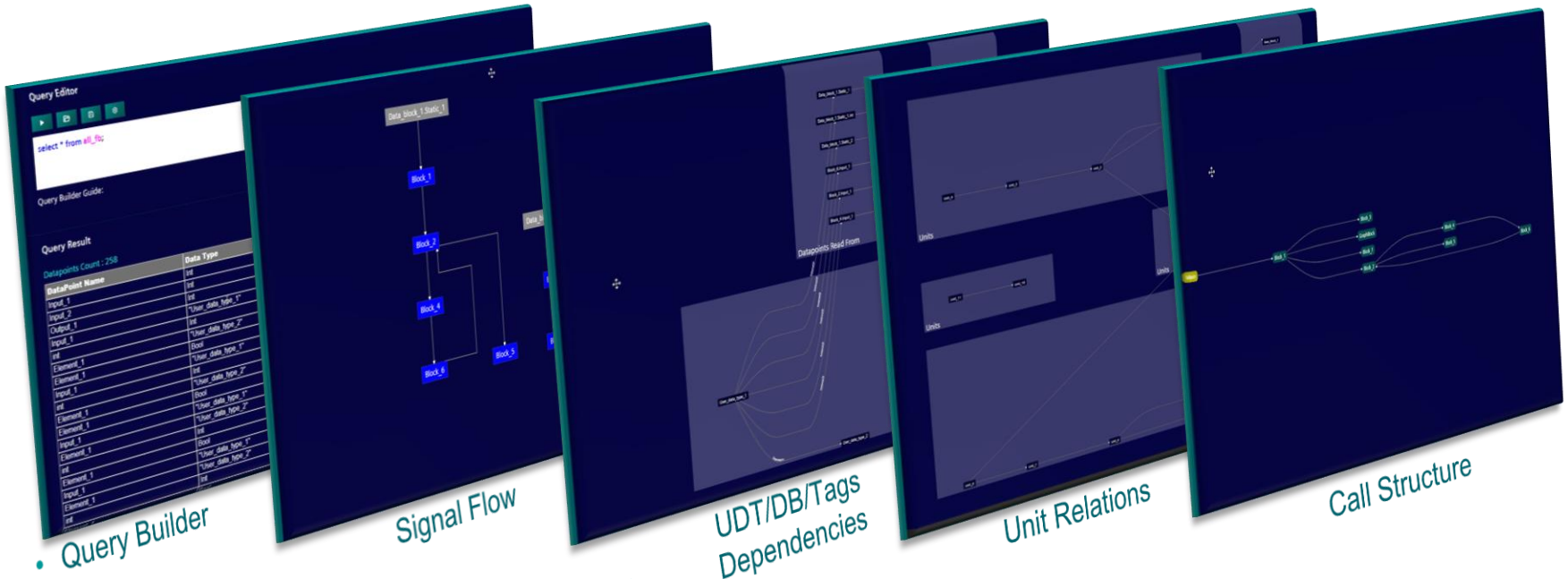
SIMATIC Project Insight

SIMATIC Project Insight helps Standardizers, PLC Engineers, Maintenance Engineers and Data Scientists with Static Analysis of Engineering Projects in order to enable faster orientation and quality improvements, thus saving time.

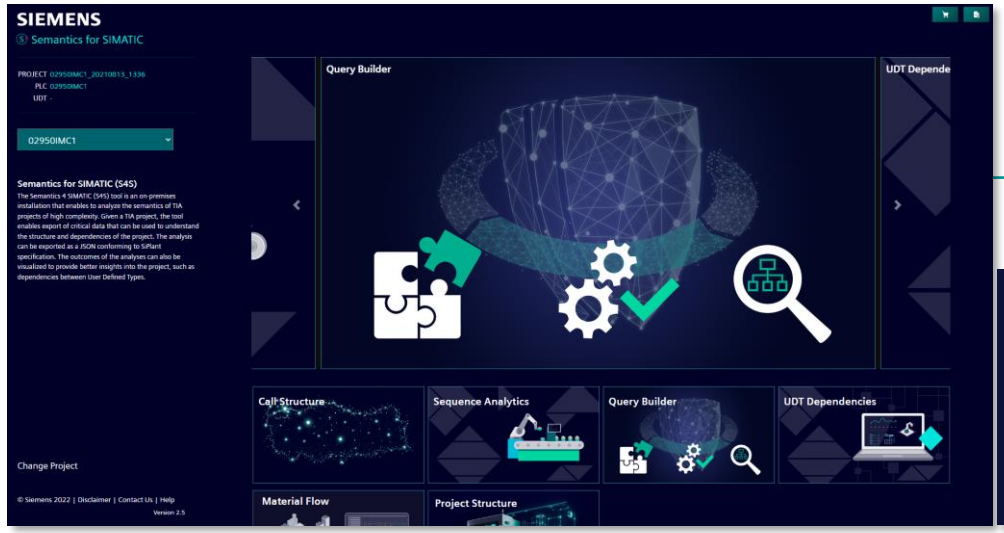
Download available via Siemens Industry Online Support:
109818320



Supports TIA Portal
STEP 7 V14 SP1, V16, V17, V18 and V19*



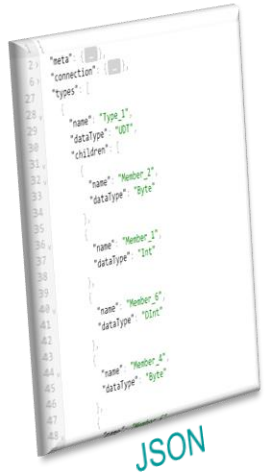
Extract & Analyze TIA Project data



Task Scheduler

Manual Export

Scheduled Batch Export



SIMATIC Project Insight Analyzer

*Planned for 2024

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TIA Portal V19
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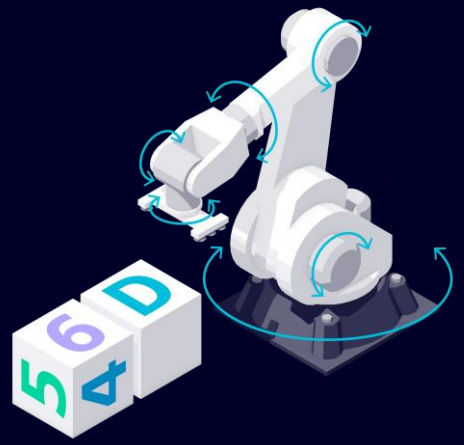
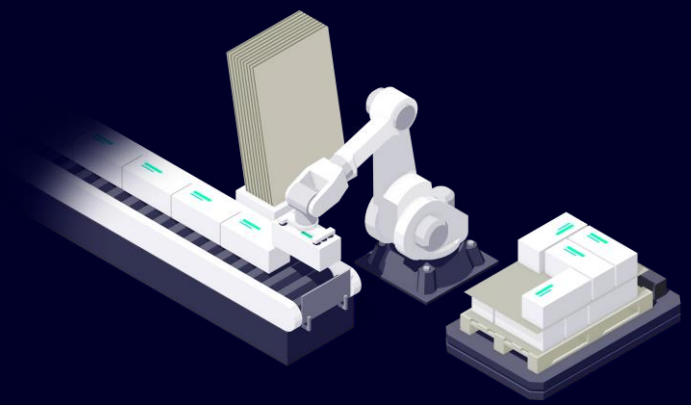
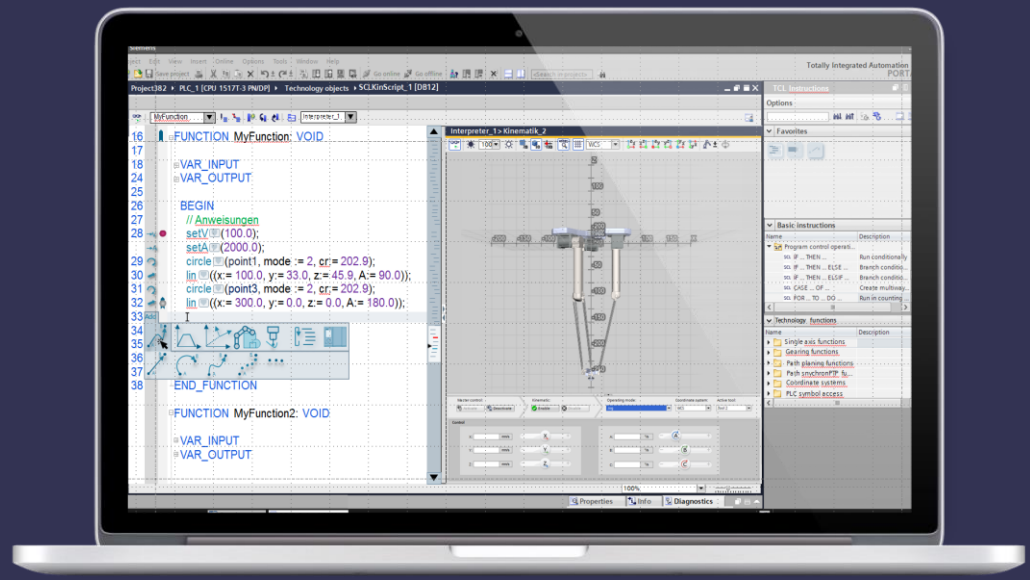
SIMATIC Motion Interpreter
Motion Control made easy, flexible and open







MCL – Motion Control Language

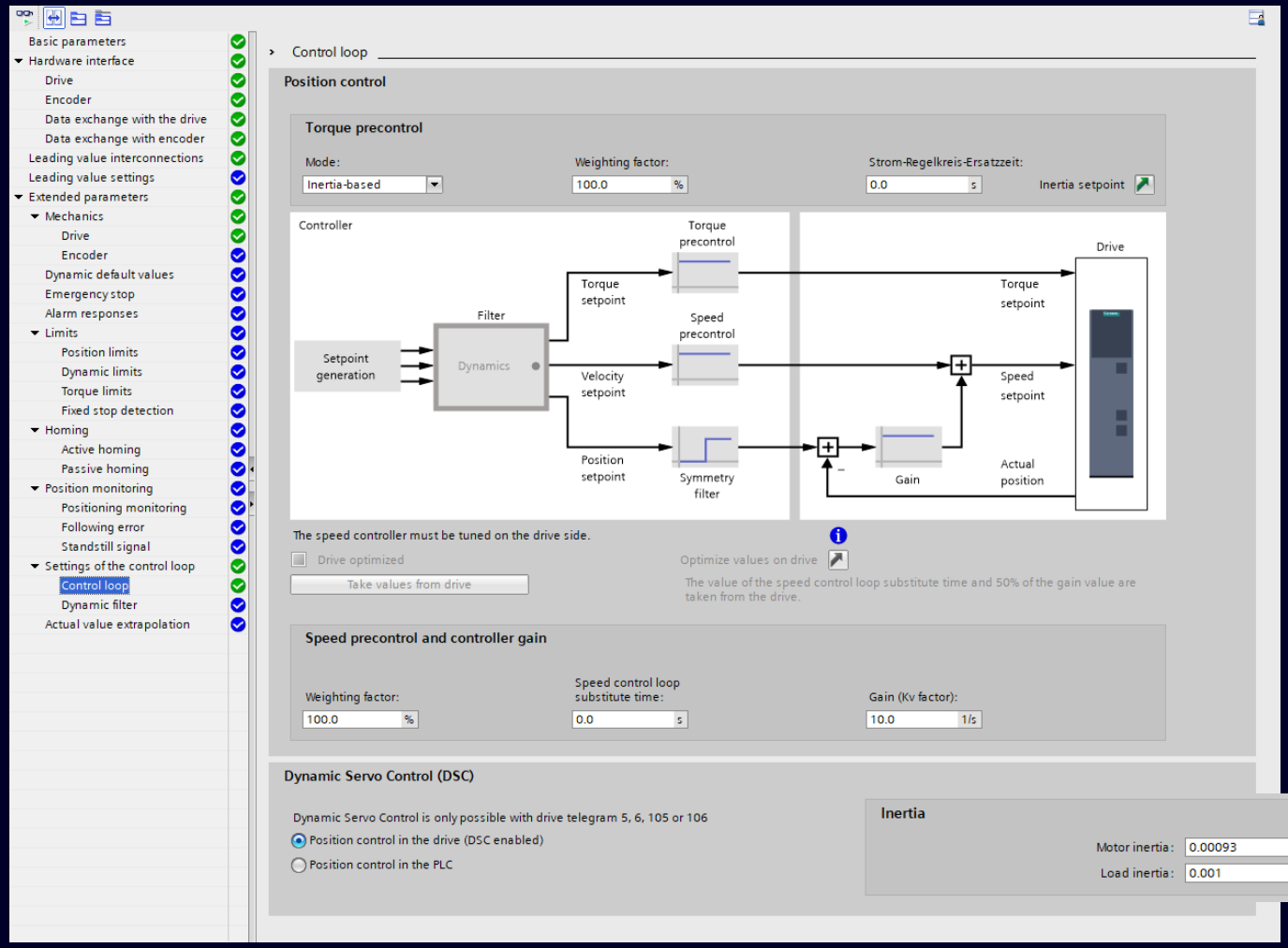
Deep integration within the PLC

Bringing OT and IT together

Easy commissioning and monitoring

- **Reduced complexity**
  Sequential programming of motion jobs for kinematics and individual axes - without modification of the PLC program.
- **Faster time to market**
  Significant reduction of programming and commissioning times supported by Live Digital Twin
- **End customer centric approach**
  Working outside TIA Portal without dedicated programming skills, program generation from higher level IT systems possible

Motion Control – Innovations
Torque precontrol



- For closed loop position-controlled axes
- Based on the acceleration of the axis
- Depends on:
  - Acceleration setpoint
  - Load and motor inertia

<u>Benefits</u>

- ✓ Faster and more precise movement
- ✓ Reduction of following error during acceleration and deceleration phases

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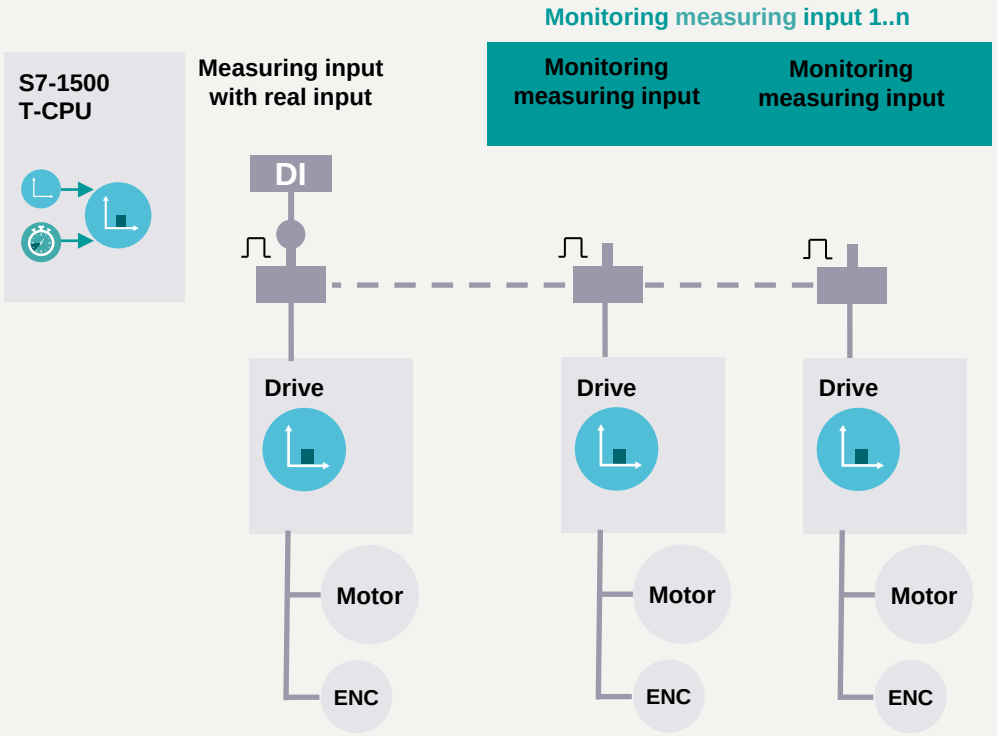
Motion Control – Innovations
Monitoring Measuring Input



- Capturing of the actual positions of several axes / external. encoder using one measurement input
- Measuring via Timer DI or via SINAMICS (central measuring input)

Benefits

- ✓ Simplified configuration and programming
- ✓ Reduction of hardware effort

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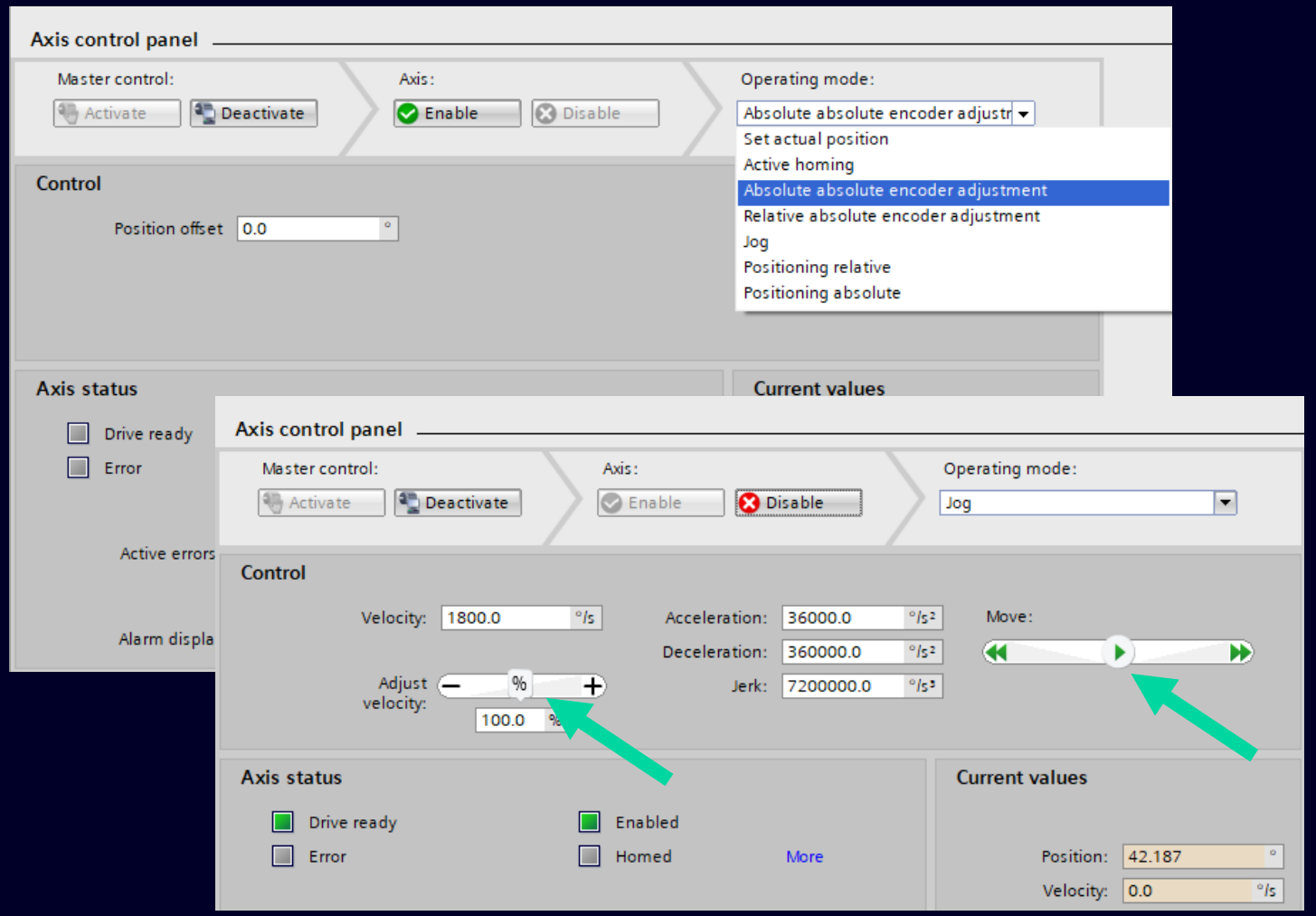
Motion Control – Innovations
New Axis Control Panel



- Settings of the absolute encoder adjustment via the axis control panel (absolute or relative)

- New slider for adjustment of velocity override

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Motion Control – Innovations
New / Extended Motion Control Functions

Get cam leading value

```
"MC_GETCAMLEADINGVALUE_DB"(Cam:="Cam_1",
                           Execute:=_bool_in_,
                           FollowingValue:=_lreal_in_,
                           ApproachLeadingValue:=_lreal_in_,
                           ApproachDirection:=_dint_in_,
                           MasterOffset:=_lreal_in_,
                           SlaveOffset:=_lreal_in_,
                           MasterScaling:=_lreal_in_,
                           SlaveScaling:=_lreal_in_,
                           Done=>_bool_out_,
                           Busy=>_bool_out_,
                           Error=>_bool_out_,
                           ErrorId=>_word_out_,
                           Value=>_lreal_out_);
```

New

Get cam following value

```
"MC_GETCAMFOLLOWINGVALUE_DB"(Cam:="Cam_1",
                             Execute:=_bool_in_,
                             LeadingValue:=_lreal_in_,
                             MasterOffset:=_lreal_in_,
                             SlaveOffset:=_lreal_in_,
                             MasterScaling:=_lreal_in_,
                             SlaveScaling:=_lreal_in_,
                             Done=>_bool_out_,
                             Busy=>_bool_out_,
                             Error=>_bool_out_,
                             ErrorId=>_word_out_,
                             Value=>_lreal_out_,
                             FirstDerivative=>_lreal_out_,
                             SecondDerivative=>_lreal_out_);
```

New

- New parameters for specifying the offset and scaling of the cam
- New parameter for defining the approach direction

Benefits

✓ Simplified programming and reduction of complexity

```
"MC_GETCAMFOLLOWINGVALUECYCLIC_DB"(Cam:="Cam_1",
                                   Enable:=_bool_in_,
                                   LeadingValue:=_lreal_in_,
                                   MasterOffset:=_lreal_in_,
                                   SlaveOffset:=_lreal_in_,
                                   MasterScaling:=_lreal_in_,
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                                   ErrorId=>_word_out_,
                                   Value=>_lreal_out_,
                                   FirstDerivative=>_lreal_out_,
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```

New

- New instruction „MC_GETCAMFOLLOWINGVALUECYCLIC“ for cyclically reading the following value of a cam

Benefits

✓ Simplified programming

✓ Flexibility for solving technological tasks

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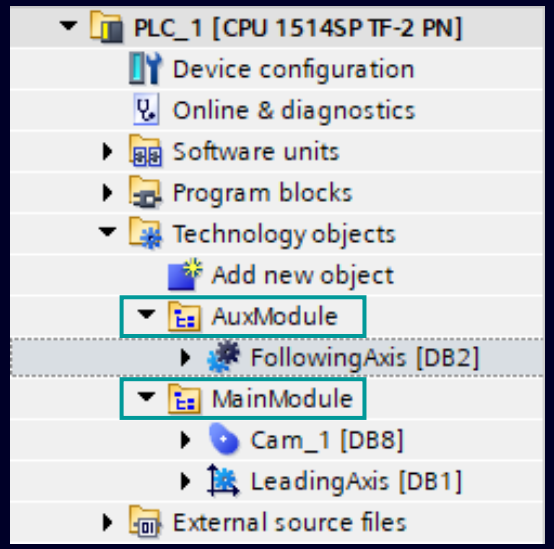
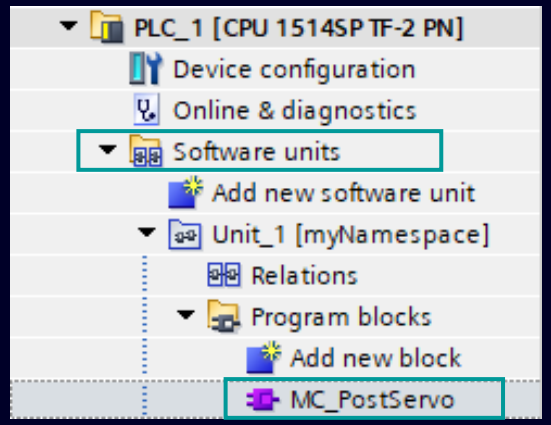
Motion Control – Innovations
Advanced Programming

Ergänzen Benefits?



- Organization of technology objects in groups.
  - ✓ Improved program structure



- Organization blocks for Motion Control can be used in software units
  - ✓ Improved program structure
  - ✓ Use of Namespaces and Named Values

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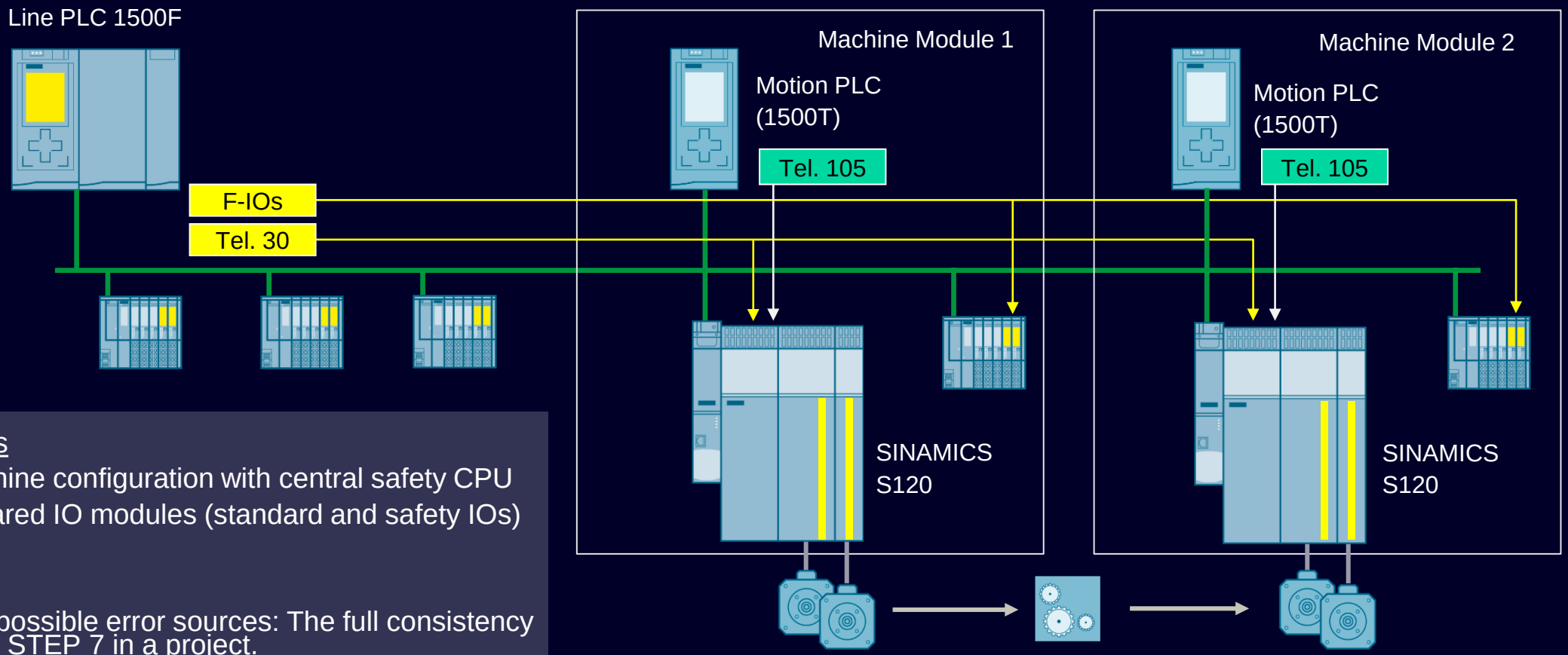
Project Integrated Shared i-Device / Shared IO devices



Typical use cases

- Modular machine configuration with central safety CPU
- Access to shared IO modules (standard and safety IOs)

Benefits

- ✓ Reduction of possible error sources: The full consistency is checked by STEP 7 in a project.
- ✓ Less configuration effort required: A shared STEP 7 project contains all the devices.
- ✓ Improved diagnostics: Full diagnostics in one project

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TIA Portal V19
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System functions

- Upgrading projects
- TIA Portal Openness
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- TIA Portal High Resolution Monitor Support

SIMATIC Automation Xpansion

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- TIAX direct loading – Engineer HW-Config & TOs with TIA Portal / Program and load machine application to PLC with SIMATIC AX
- SIMATIC AX support in China

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- **SIMATIC STEP 7 Safety**
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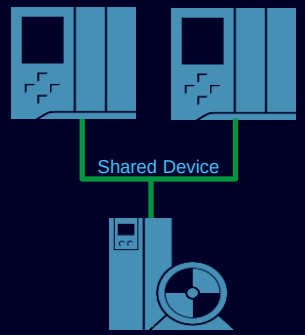
SINAMICS Startdrive & DCC – Innovations
Hardware and functions



Support of new drives SINAMICS S200, S210 (New), G220

- Security functions, e.g. UMAC inside the drive
- User-defined parameter lists
- Basic positioner with physical units (for S200, S210 (New))

Project-integrated Shared Device

- Assignment of drives to multiple PLCs (for S120, S210, G220)
- Use case: e.g. split drive control into standard (Motion) and Safety

Extension for CU3x0-2 based drives

- Long-term trace (endless trace)
- Support of S120M distributed drives
- Multi-row displaying in device view

SINAMICS DCC V19

- Upload of charts created with STARTER (even more complex)
- Statistics overview, Pins for sub-charts, Openness extensions
- Jump from parameter list to location of use in chart

Support of high-resolution displays

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TIA Portal V19
TIA Portal Cloud

SIMATIC WinCC Unified – Innovations

- New device versions for Unified PC RT, Unified Comfort Panel and Unified Basic Panel
- Engineering of Professional, Advanced and Unified on one PC
- Multiuser Engineering on screen level
- Standardization: extensions for faceplates and libraries
- Visual Studio Code as development environment for JavaScript
- Automatic login and auto-logoff on remote clients for PC RT
- Client device specific start screen for PC RT
- Configuration of kiosk mode for PC RT
- Corporate Designer to create styles

SIMATIC WinCC – Innovations

- Engineering of Professional, Advanced and Unified on one PC
- WinCC Advanced: no new RT Advanced V19 Version
- WinCC Professional: Faceplates for WebUX, REST API

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- Support of named value data types within Software Units
- Symbolic Access @ Runtime – Support of structs and data types
- Long-term Trace: R/H-CPU support, Monitoring while recording
- SIMATIC Project Insights - Static Analysis of TIA Projects for faster orientation and quality improvements

SIMATIC Motion Control – Innovations

- SIMATIC Motion Interpreter
- Torque precontrol
- Monitoring Measuring Input
- New Axis Control Panel
- New / Extended Motion Control Functions
- Advanced Programming
- Project Integrated Shared i-Device / Shared IO devices

SINAMIC Startdrive – Innovations

- New drives: SINAMICS S200, S210 (New), G220, S120M
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- Long-term Trace

TIA Portal Cloud & Cloud Connector

- Overview of new functions

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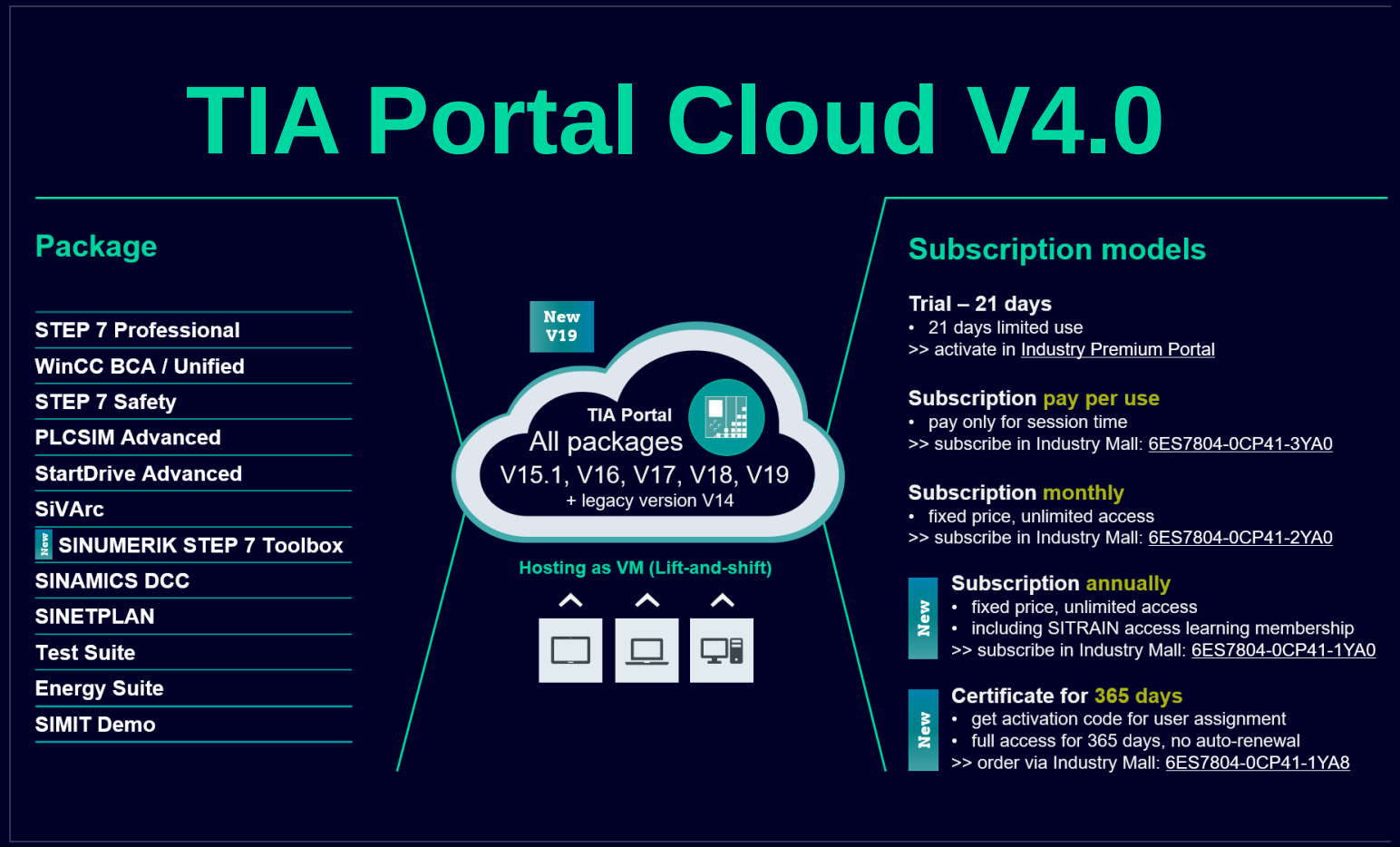
TIA Portal Cloud & Cloud Connector

TIA Portal Cloud
Overview of new functions



TIA Portal Cloud is a highly efficient SaaS offering, that enables you to work anywhere at any time!

What is new:

TIA Portal Cloud V4.0 (11/2023)
- Integration of TIA Portal V19
- Integration of TIA Portal V14 legacy version

TIA Portal Cloud V3.3 (10/2023)
- Product updates and security fixes

TIA Portal Cloud V3.2 (07/2023)
- Start TIA Portal Cloud via desktop shortcut
- Support of TIA Portal Add-Ins

TIA Portal Cloud V3.1 (03/2023)
- Updates and security patches
- Copy & paste with host PC
- Integration of fullscreen mode

For more information about TIA Portal Cloud please follow the link: https://support.industry.siemens.com/cs/us/en/view/109794456

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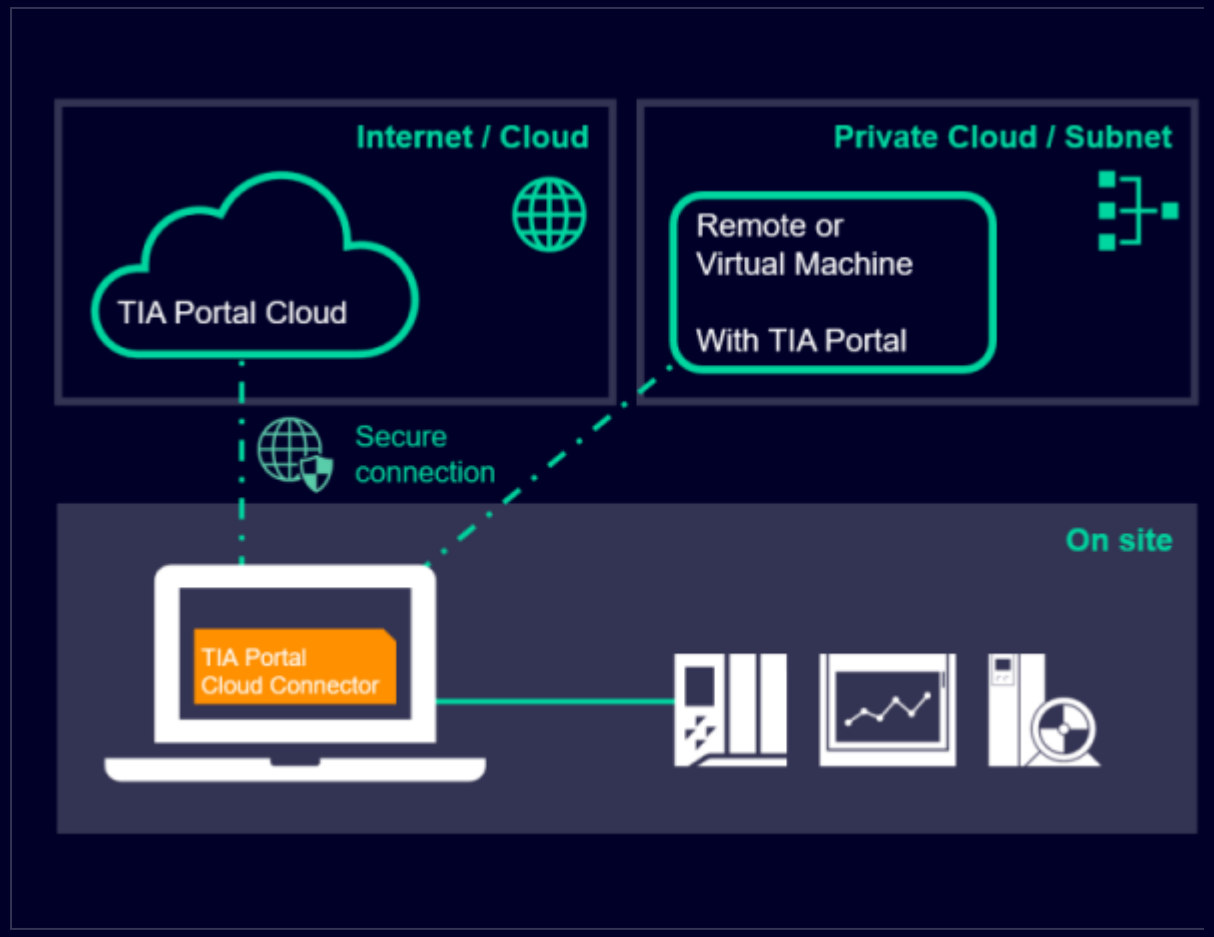
TIA Portal Cloud Connector
Overview of new functions



The TIA Portal Cloud Connector enables TIA Portal Engineering in a cloud environment to access the local PG/PC interface and the connected SIMATIC hardware.

What is new:

TIA Portal Cloud Connector V1.2 SP5 (11/2023)
- Security fixes

TIA Portal Cloud Connector V1.2 SP4 (03/2023)
- To increase security the default setting of the protocols has been adapted.

TIA Portal Cloud Connector V1.2 SP3 (11/2022)
- Multi-device-registration: one cloud connector user device can be registered and used by multiple remote devices at the same time.

For more information and download of the newest TIA Portal Cloud Connector please follow the link: https://support.industry.siemens.com/cs/us/en/view/109780755

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TIA Portal V19
Hardware configuration

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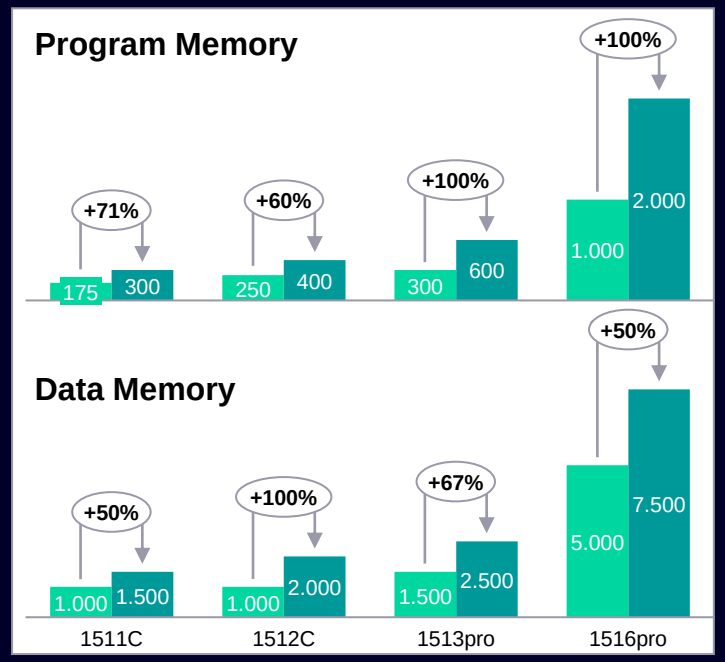
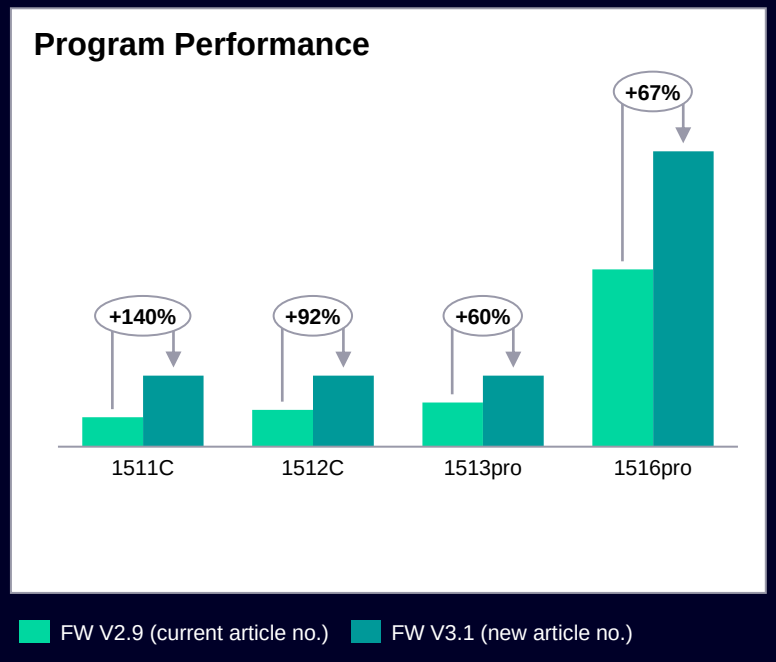
SIMATIC Hardware
New Hardware for SIMATIC S7-1500 Compact / ET 200pro CPUs





Delivery release: 04/2024

12/2023

New hardware for S7-1500 Compact & ET 200pro CPUs: More memory, More Performance, Higher communication performance (2nd core), secure boot, spare part compatible

- **Support for standardization** that requires more memory for more code and the reliability on performance to new amount of code
- **Higher deterministic/reduced jitter:** Offload of the communication to a separate (2nd) core. Minor impact on the process
- **Higher communication performance** to address the IT/OT communication use case

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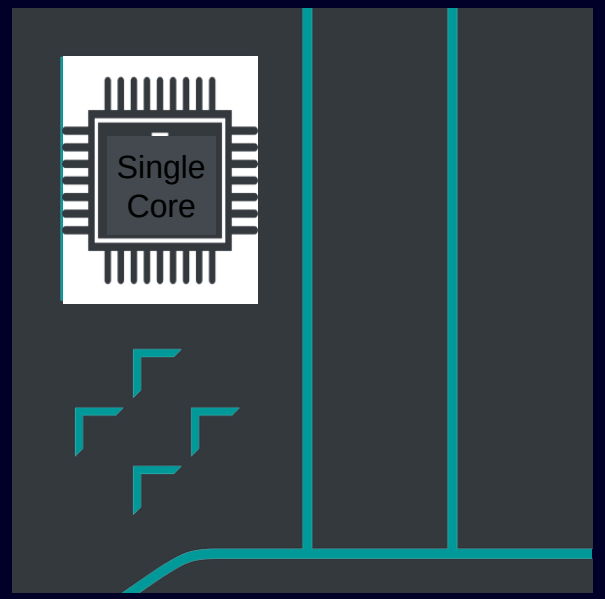
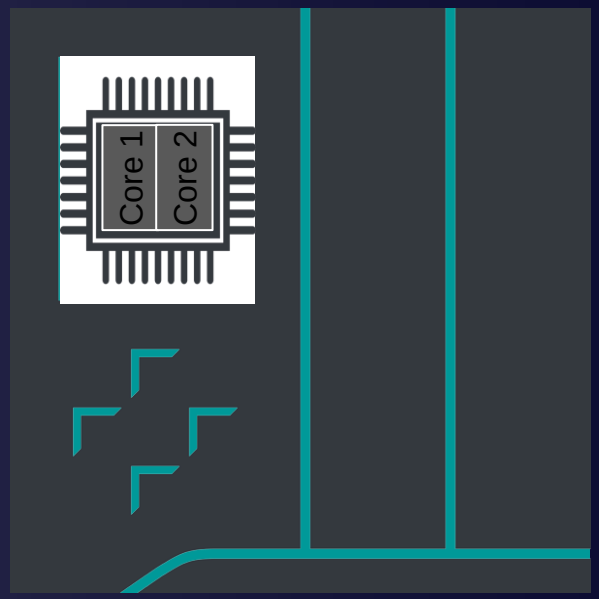
SIMATIC Hardware
New Hardware for S7-1500 Compact CPUs with FW V3.1



6ES751x-1Cyx0/1-0AB0
FW ≤ V2.9



6ES751x-1Cy03-0AB0
FW = V3.1

New Hardware with 2 Core Processor

- Core 1
  - User program
  - Diagnoses
- Core 2
  - Communication

New Display implementation

Benefits

→ Deterministic program processing (smaller jitter)
→ Higher communication performance
→ No separate Display FW needed

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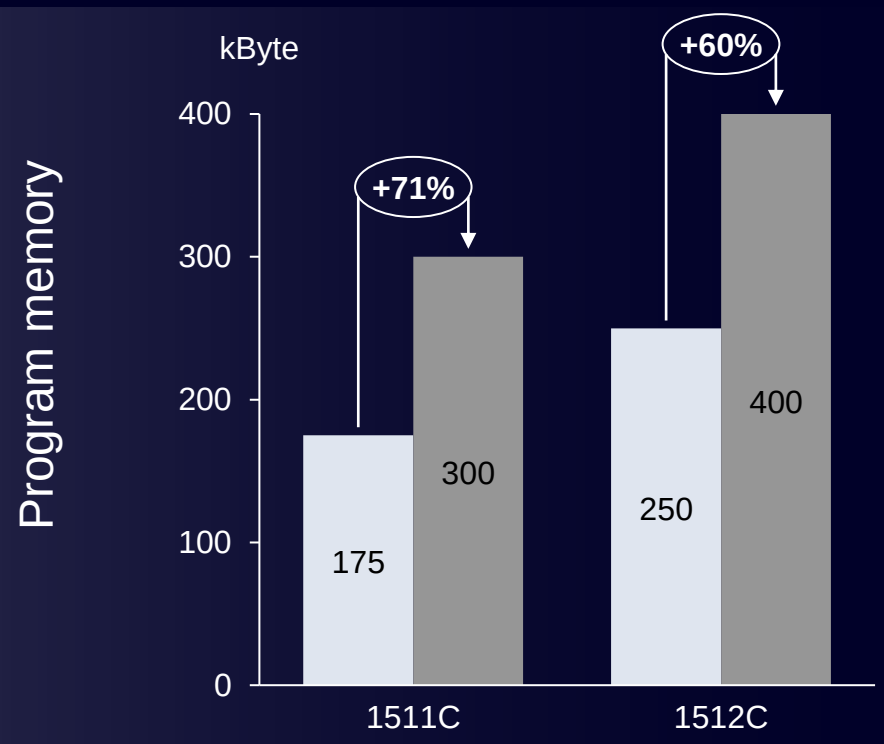
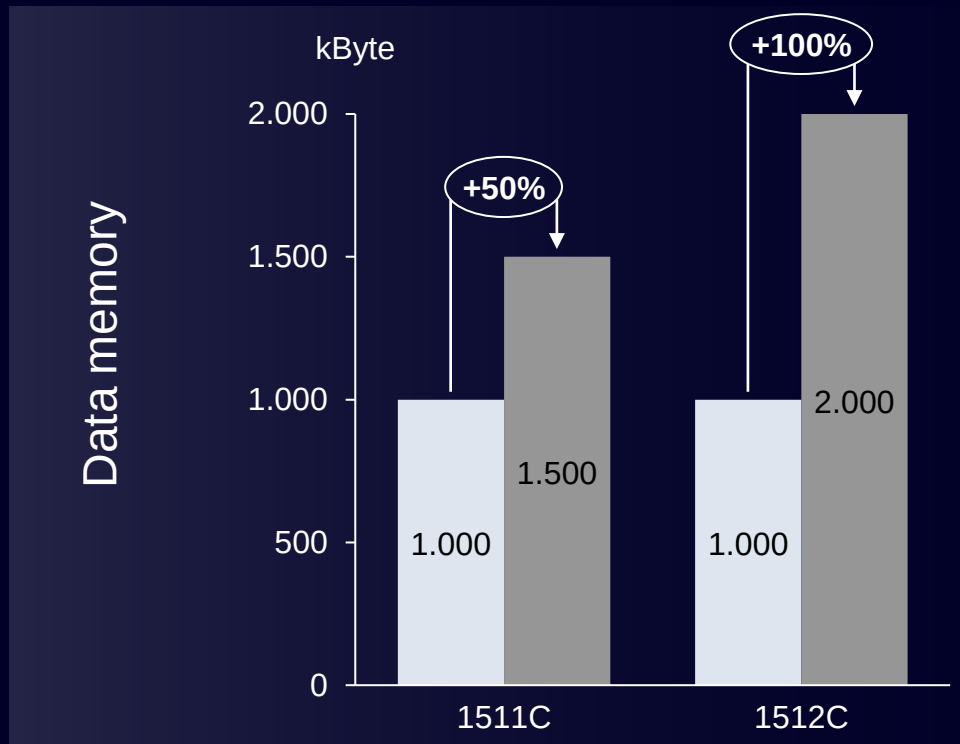
SIMATIC Hardware
New Hardware for S7-1500 Compact CPUs with FW V3.1

Increased program- and data memory

- more resources for future customer application extensions





FW V2.9 (current article no.) FW V3.1 (new article no.)

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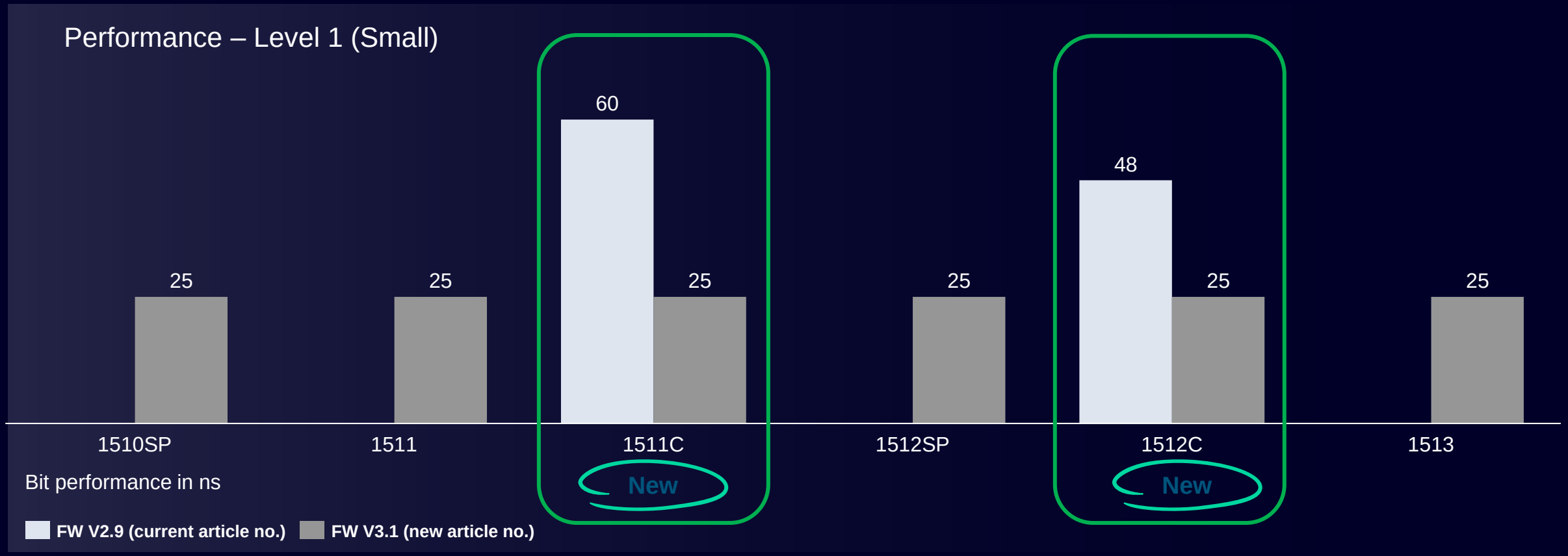
SIMATIC Hardware
New Hardware for S7-1500 Compact CPUs with FW V3.1

- **1 performance level for CPUs 1510SP - 1513**
- **up to +140% performance increase**

- **Easier controller selection**
- **More customer use cases can be realized**



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SIMATIC Hardware
Communication performance of S7-1500 Compact / ET 200pro CPUs

S7 & (secure) OUC communication performance

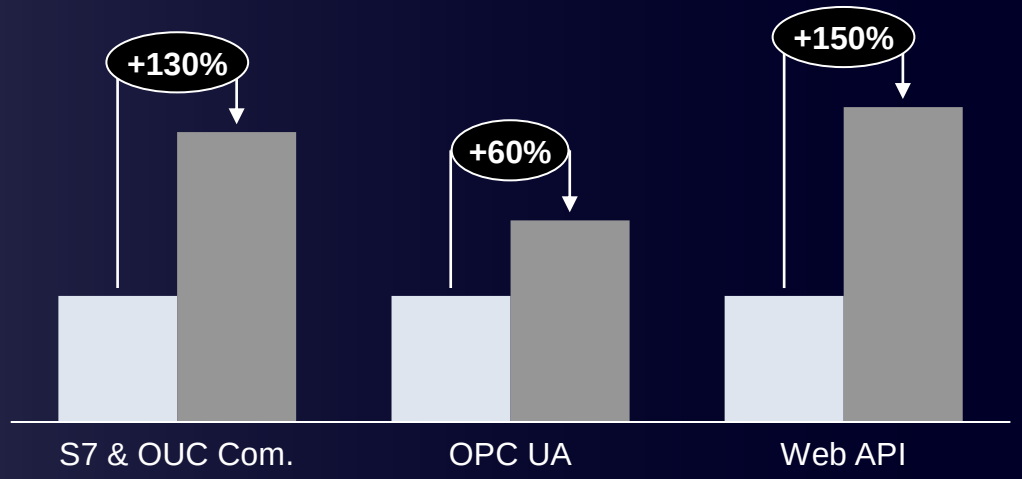
- **up to +130% performance increase**

OPC UA

- **Up to +60% performance increase**

Web-API (Read/Write)

- **Up to +150% performance increase**



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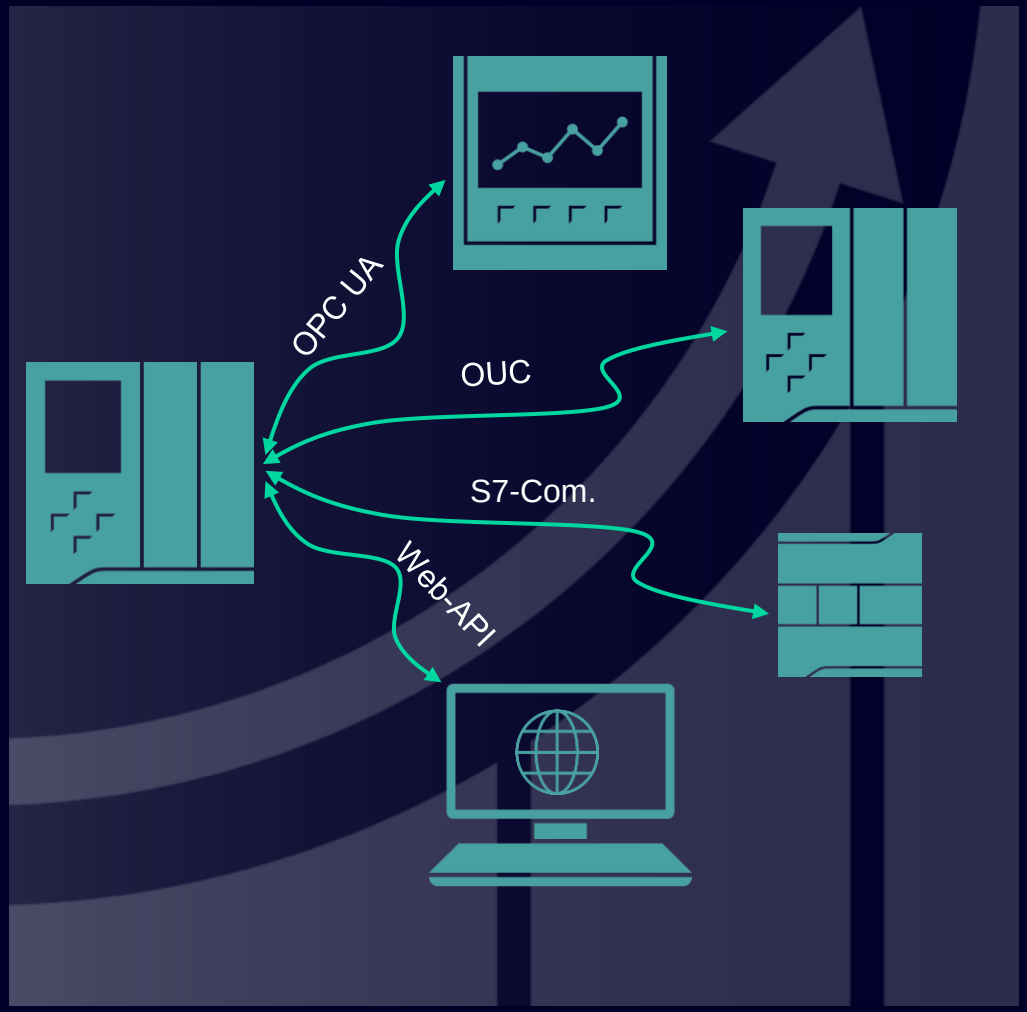

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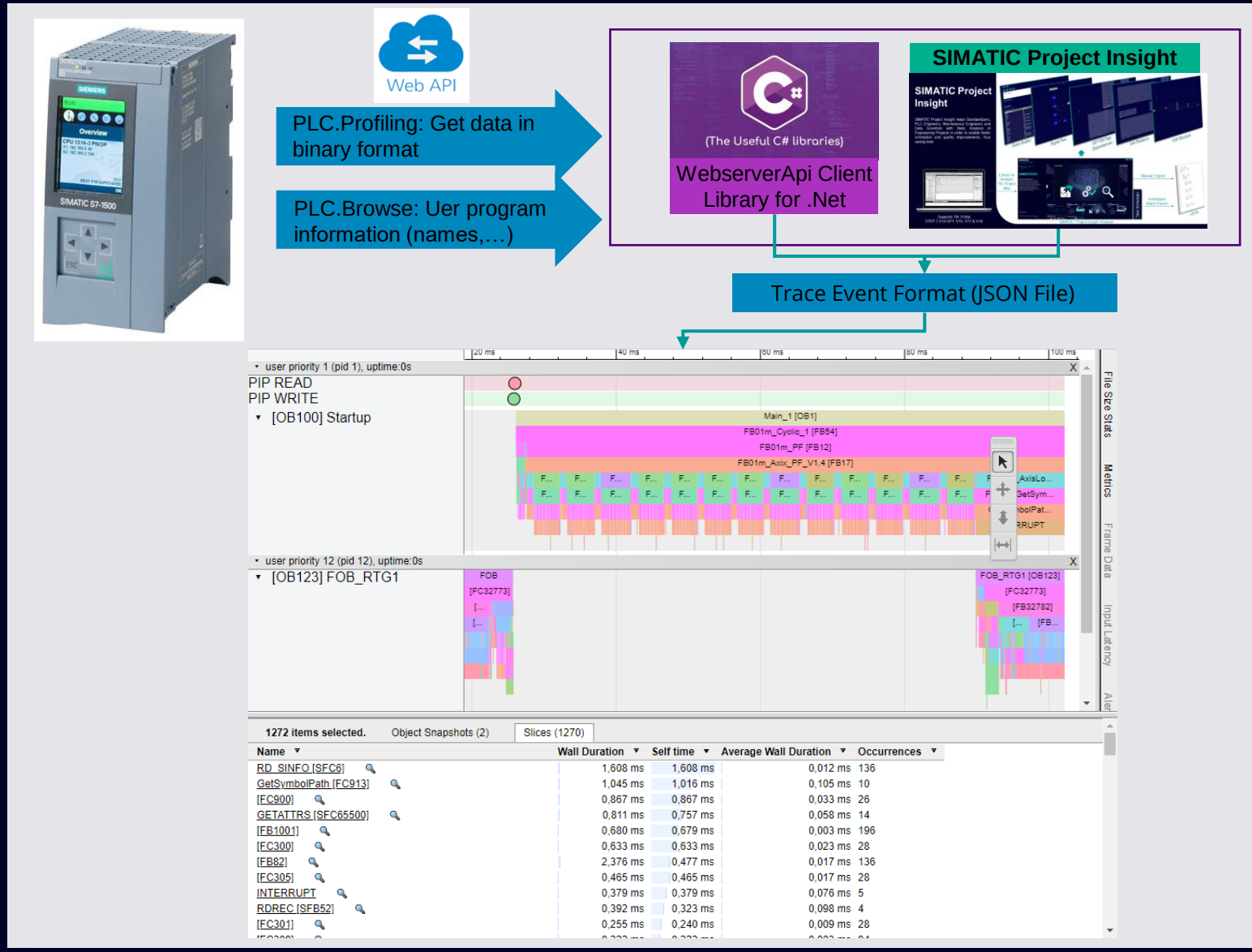
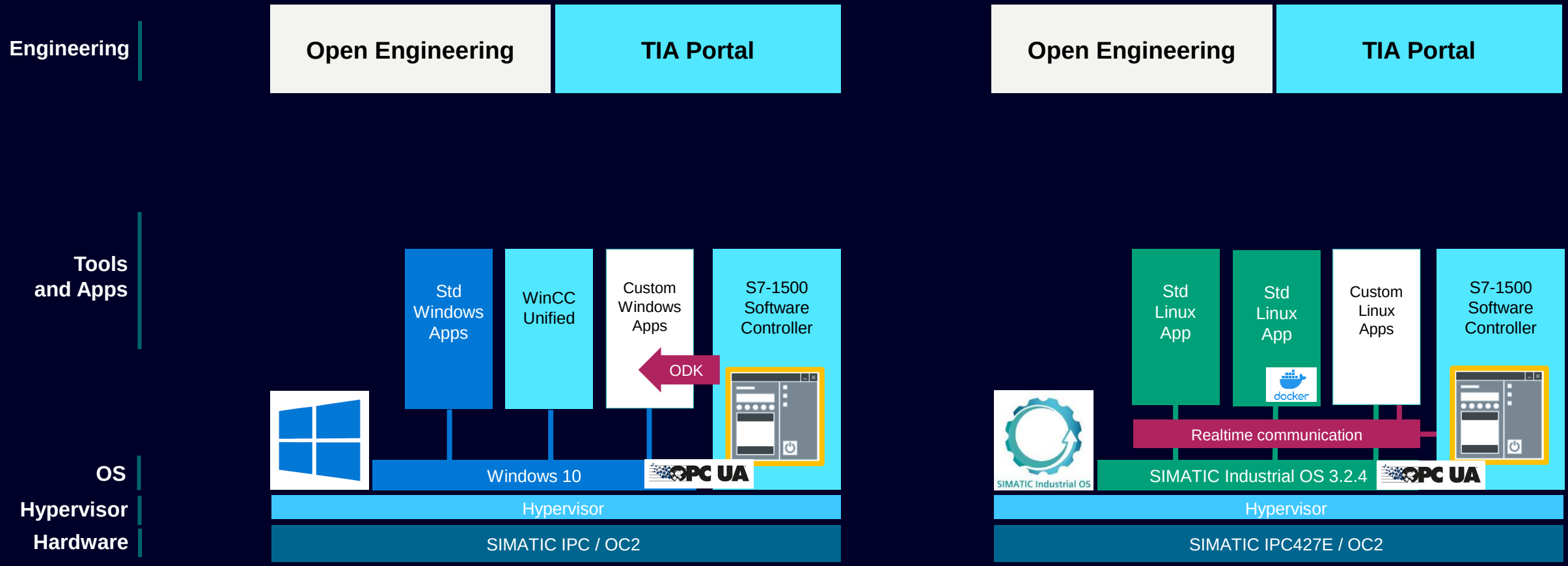
SIMATIC Hardware Profiling with FW V3.1

- For S7-1500 / ET 200 CPUs ≤ 1516
- Runtime analysis of the user program for targeted optimization
- Download of runtime data over WebAPI and converting into JSON format with e.g. SIMATIC Project Insight* 109818320
- Using third party tools like „Chrome Tracing“ for analysis
- Also available in S7-PLCSIM Advanced
- Use cases:
  - Runtime optimization of the user program
  - Fault diagnosis
  - Evaluation of the power reserve of the automation system
  - Quality assurance of the application

* With Q1/2024 release



SIMATIC S7-1500 Software Controller V30.0
Linux added as supported General Purpose OS Combinations



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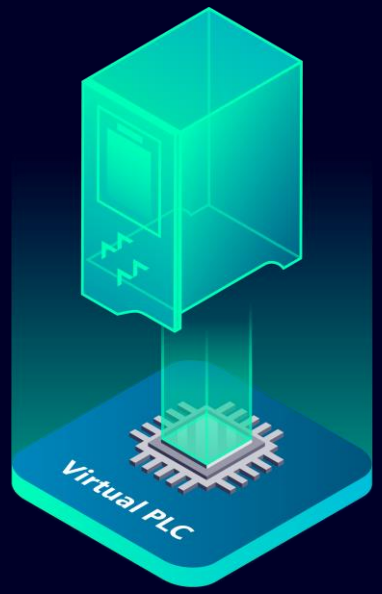
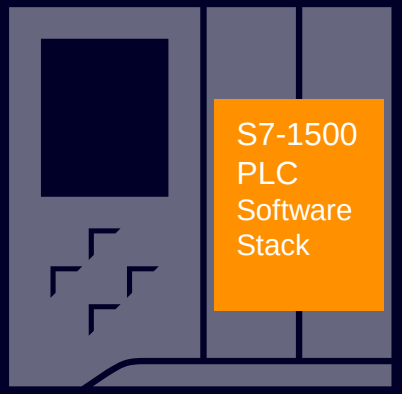
SIMATIC S7-1500V
Virtual controller – the basic idea … we bring SIMATIC on the Industrial Edge!

S7-1500V

- **virtual SIMATIC S7-1500 PLC**
- Hardware independence
- TIA Portal compatible
- App Management over IT/Edge

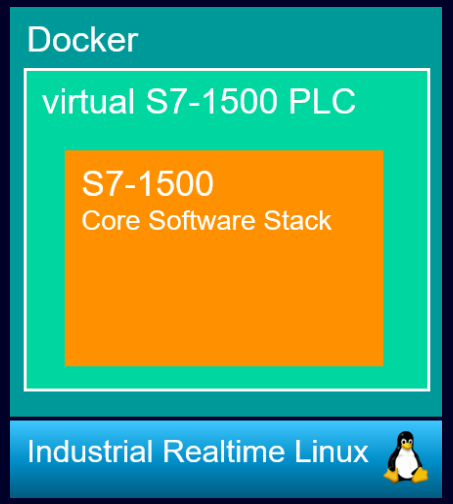


S7-1500 PLC



virtual SIMATIC PLC

@SIEMENS Edge Runtime



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SIMATIC S7-1500V
Feature

TIA Portal compatible

Edge Runtime App
@ Edge Marketplace

Real-time capable based on
standard LINUX mechanisms

Safety support[1]

Multiinstances of a PLC
on one Device[1]

PROFINET RT with
1ms Cycle Time

Hardware independent – available
for Industrial Edge Device for
IPCs and Virtual Edge Devices

Decentral IO control

1 Planned for future versions

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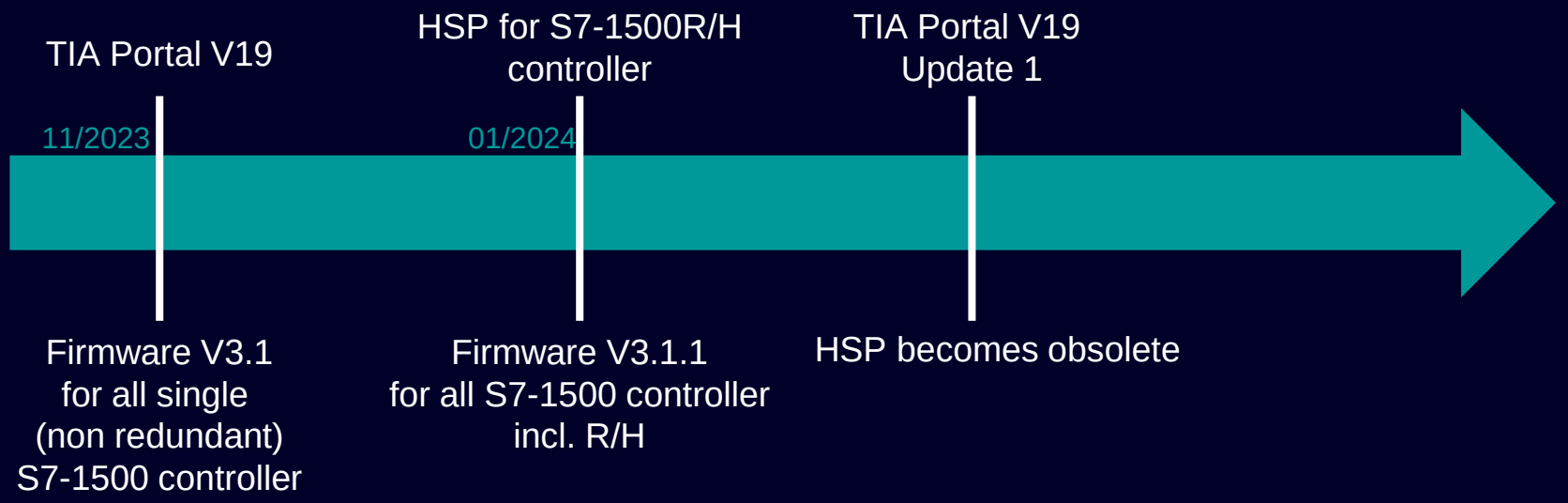
SIMATIC S7-1500 R/H
Redundant Controller for High Availability Applications

S7-1500 R/H: General note on the market launch of the new functions

- Firmware V3.1 is required to use the new features described on the following pages
- Release this firmware for R/H controller will be end of January 2024
- For configuration of V3.1 version in TIA Portal, a hardware support packet (HSP) will be provided at the same time
- With TIA Portal V19 Update 1 it is planned to integrate this HSP



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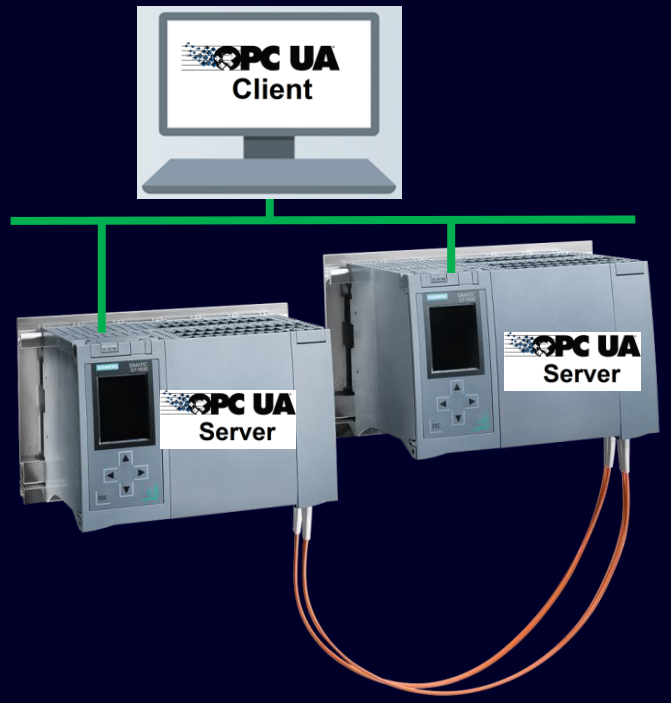
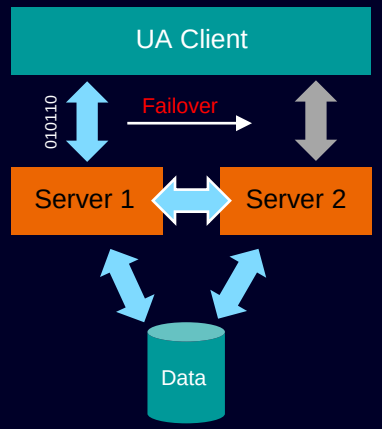
SIMATIC S7-1500 R/H: Support of OPC UA Server
Overview



Redundancy concept according OPC UA specification:

- Failover Mode: “Hot + Mirrored” for fast switchover times
- Access via System-IP address is supported
  → Transparent Mode for UA clients without redundancy support
- Access via Device-IP address is supported
  → UA client can manage failover scenario

Hot + Mirrored



Target Hardware

- CPU 1500R (Only new V3.0 version)
- CPU 1517H
- CPU 1518HF

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SIMATIC S7-1500 R/H: Support of OPC UA Server
Feature comparison to standard PLC

	Standard PLC	R/H PLC
Basic Functionality	Client + Server	Server
Data Access via	Configured Server Interface Standard Server Interface	Configured Server Interface
OPC UA Security	Yes	Yes
Data Access	Yes	Yes
UA Methods	Yes	Yes
Alarms and Conditions	Yes	No
UA GDS	Yes	No
UA Server Redundancy	No	Yes

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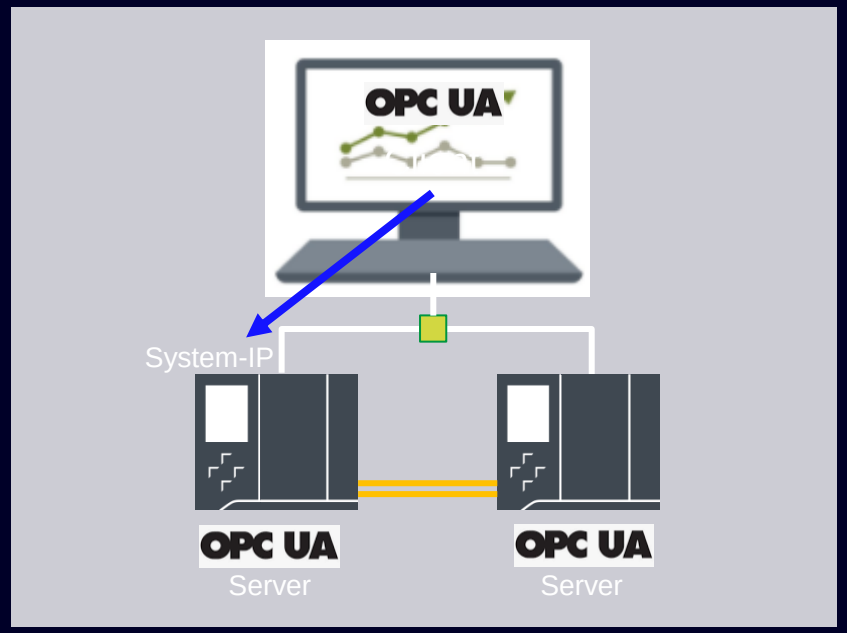
SIMATIC S7-1500 R/H: Support of OPC UA Server
Transparent vs. non transparent mode

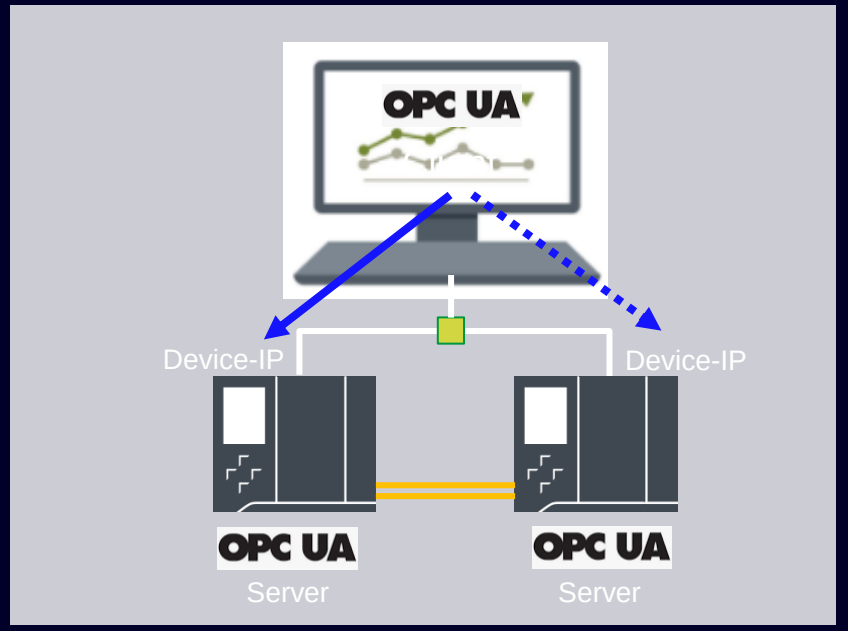
Transparent Mode



For “standard” Clients without redundancy support.

UA Client always connects to System-IP Address

Non Transparent Mode



For clients which are aware of a redundant server pair → The client selects the appropriate OPC UA server using the Device-IP Address of the CPU

This mode is supported by WinCC OA

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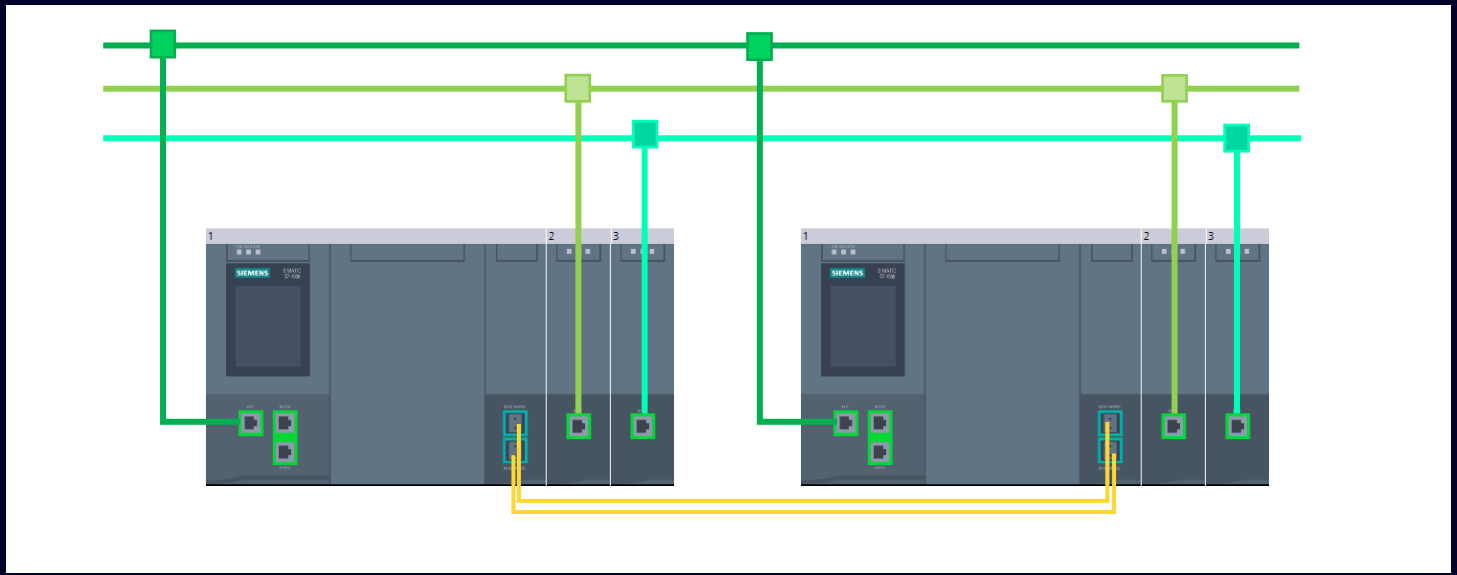
SIMATIC S7-1500 R/H: Support of CP1543-1

Increased number of ethernet interfaces / Active Backplane for H-CPUs

Support of CP modules

- Support of CP1543-1 for northbound communication (ethernet only)
- Active Backplane also allows the use of redundant system power supplies
- Extended Security Features (VPN, Firewall, …)
- W1 interface and System IP Address is supported (for 1 CP)

	R-System	H-System
Max. Number of CPs	2	6
Backplane support	U-Connector	Active Backplane
Hot swap of CPs	No	Yes
Redundant System power supply	No	Yes



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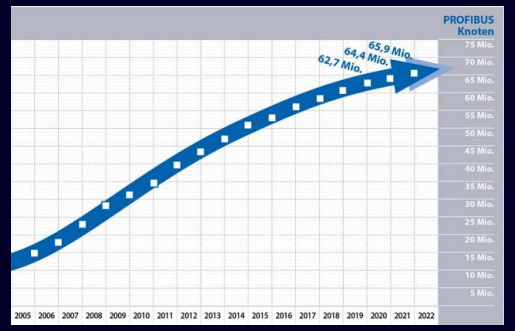
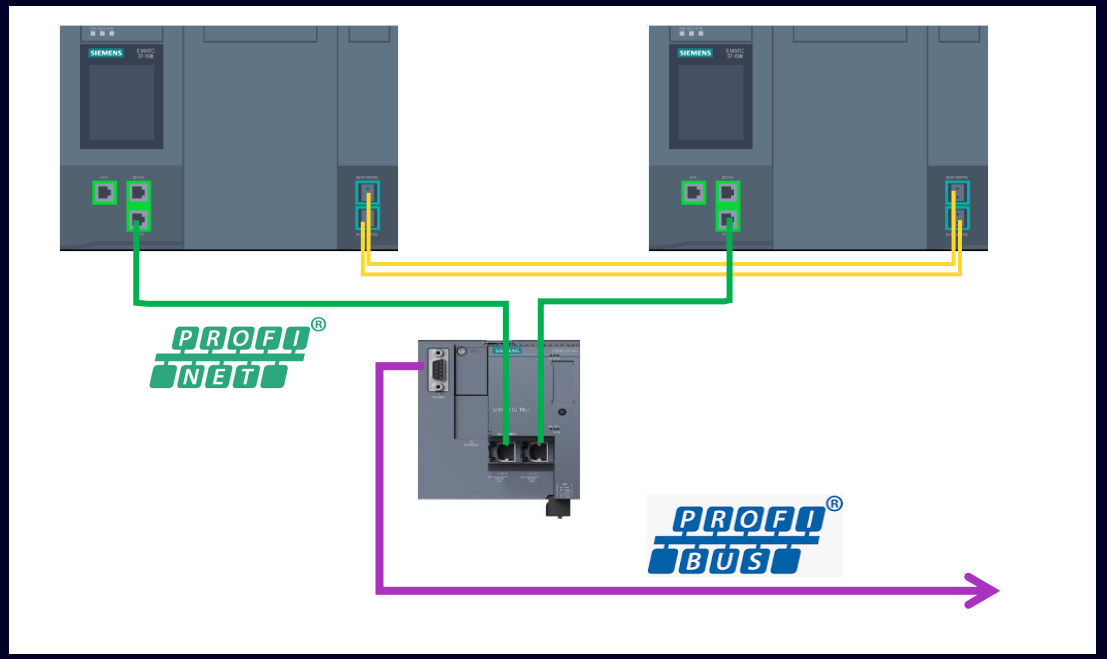
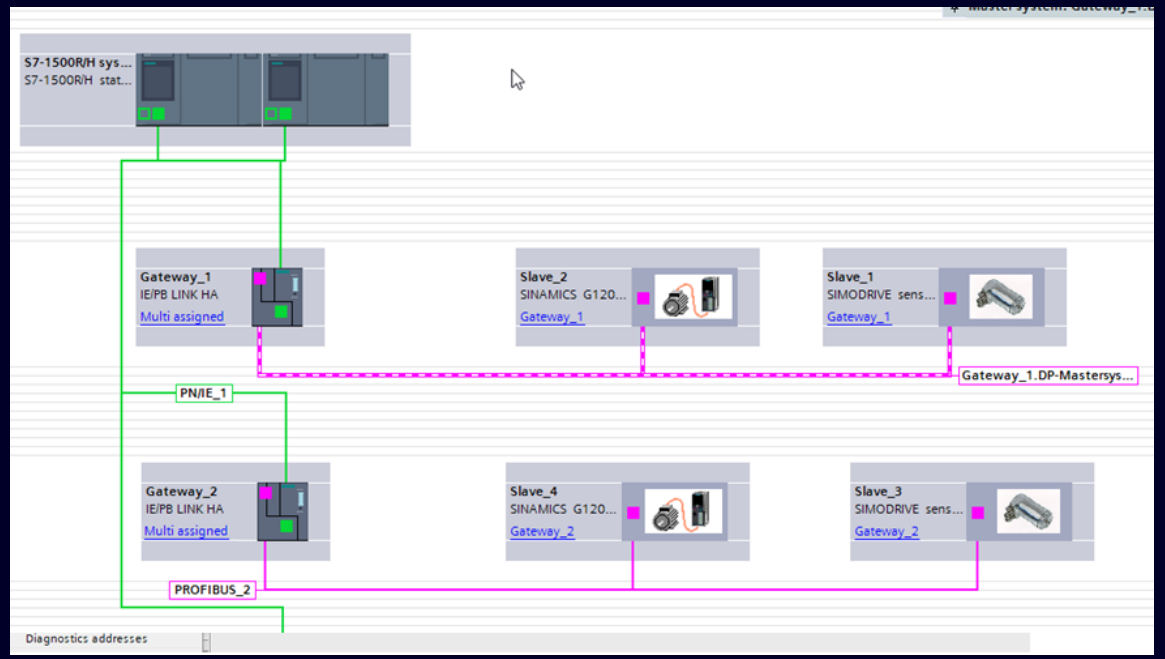
SIMATIC S7-1500 R/H: IE/PB LINK HA Support
Support of PROFIBUS devices

Connection of IE/PB LINK to S7-1500R/H controller HA allows

- Bumpless connection of PROFIBUS Devices to S7-1500R/H
- Use of System Redundancy S2 for DP Devices
- Combination with Y-Switch for R1 Topology







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SIMATIC S7-1500 R/H: Additional Features
Webserver / Secure Communication and additional system functions

Support of Webserver
- New architecture with API based access
- Client Library for .NET is provided on GitHub
  https://github.com/siemens/simatic-s7-webserver-api

- Integrated Web Pages will follow later

Secure Communication for
- Open User Communication
- OPC UA

Support of system functions for
- Data Logs → Allows the use of Energy Suite
- User Files

Further Improvements
- Option to start R/H System with open Ring (Commissioning use case)

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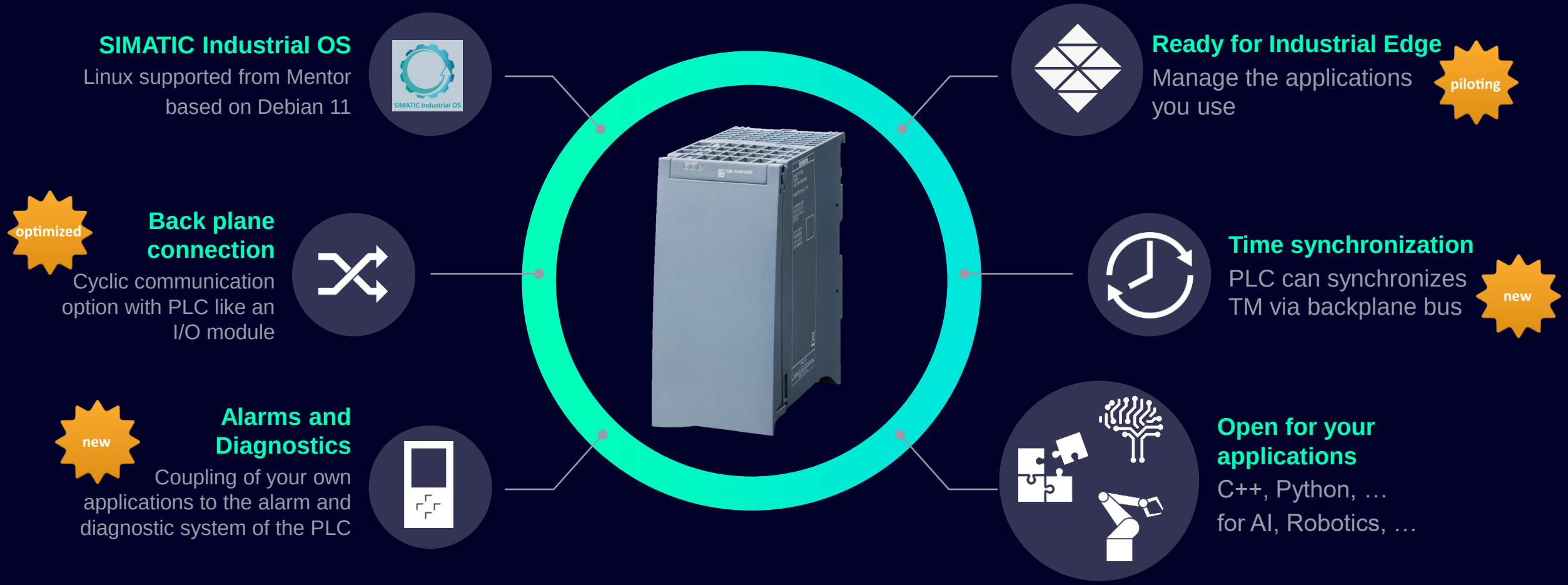
SIMATIC S7-1500: TM MFP allows the extension of the S7-1500 PLC with self-developed functions or open source solutions.



Firmware version V1.1 will be available from March 2024. HSP for TIA Portal V19 necessary for new functions.

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SIMATIC S7-1500: Overview of the technical possibilities of TM MFP

TM MFP (TM Multi Functional Platform)

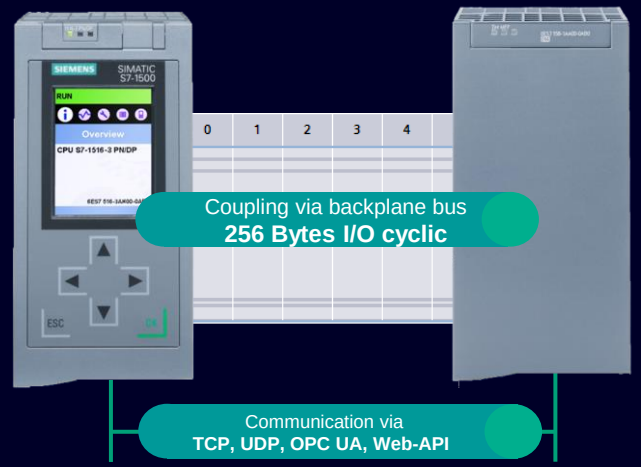
- Hardware
  - Processor: Intel Atom E3940, 1,6 GHz, 4 Cores
  - Mass storage: 128 GB SSD
  - Working memory: 8 GB RAM
  - 1 x DisplayPort DPP
  - 2 x Ethernet (Gbit), 2x USB 3.0
- Pre-installed and configured SIMATIC Industrial OS (based on Debian 11) with full user right management
- Dimensions: Width - 70mm; Height – 147mm; Depth – 129mm

Project planning options

- System Power Supply necessary - same current potential - no leakage currents
- Combinable with SIMATIC CPU from CPU1511 till CPU1518 (R-/H-PLCs without backplane communication)
- Free choice of slot
- Up to four TM MFPs with one PLC possible

Communication options between PLC and TM MFP

- Module is mapped into process image of the PLC
- 256 Input- and Output-Bytes for cyclic I/O communication
- Demo application for I/O communication in C++ and Python preinstalled
- All PLC communication access points can addressed via external Ethernet connection: TCP, UDP OPC UA, Web-API,…



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ET 200SP OpenController CPU 1515SP PC2 (F/T/TF) with new Software Controller V30.0 / V30.1

Highlights of Software Controller V30.0 on CPU 1515SP PC2

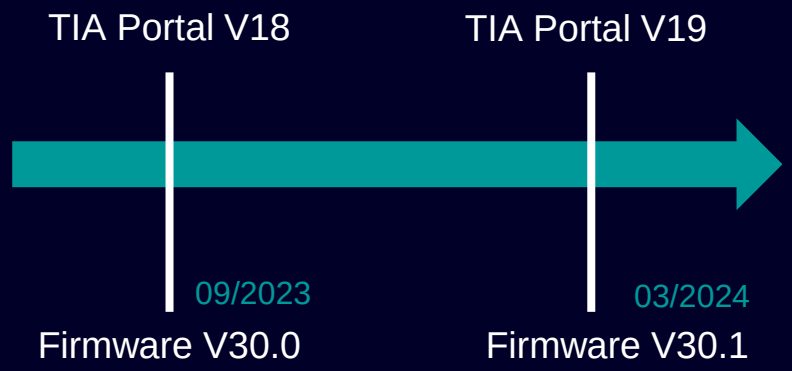
- New firmware V3.0 for SIMATIC S7-1500 integrated
- Parallel use with SIMATIC WinCC Unified for small projects
  - Configuration on one device
  - Software package available
- Different operating system bundles available
  - Windows 10 LTSC 2021
  - Industrial OS V3.2 (based on Debian 11)
- **100% more code memory and 50% more data memory**

Available since September 2023 (new order numbers)
Configurable with TIA Portal V18

Version V30.1

- New firmware V3.1 for SIMATIC S7-1500 integrated
- CPU 1515SP PC2 with V30.0 can be updated

Release in March 2023
Configurable with TIA Portal V19



HSP becomes obsolete

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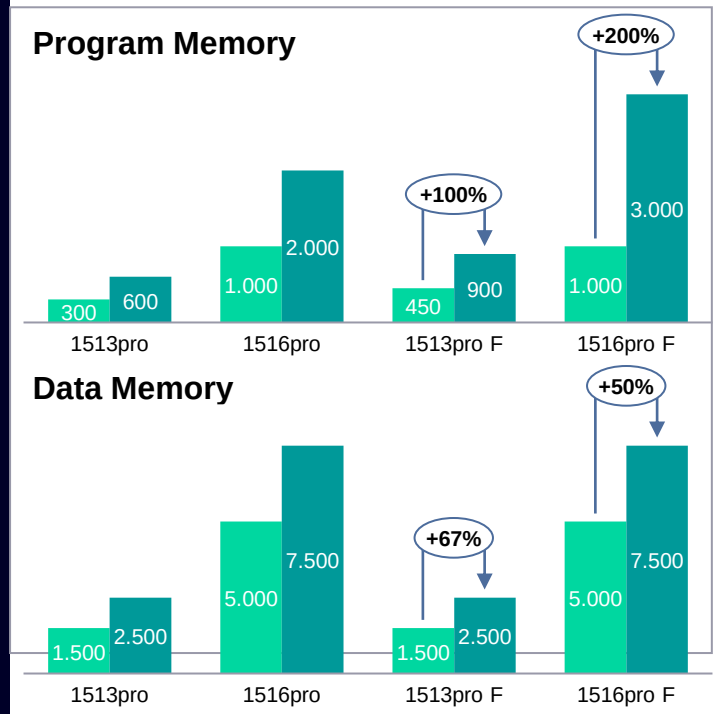
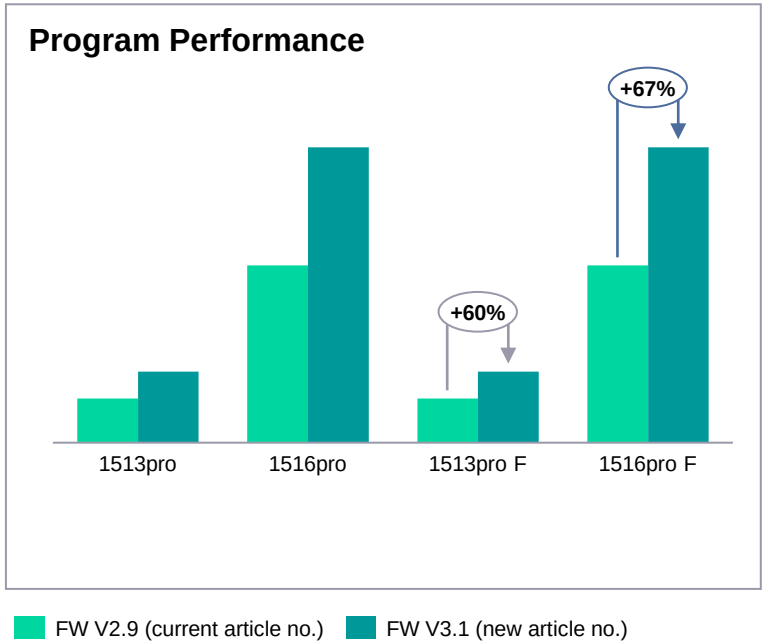
Safety Integrated
News – Safety Controller – ET200pro





- **New hardware for S7-1500 ET 200pro CPUs**: More memory, More Performance, Higher communication performance (2nd core), secure boot, spare part compatible

- **Support for standardization** that requires more memory for more code and the reliability on performance to new amount of code
- **Higher deterministic/reduced jitter:** Offload of the communication to a separate (2nd)) core. Minor impact on the process
- **Higher communication performance** to address the IT/OT communication use case

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SIMATIC S7-1500 - CPU 1517F-3 PN/DP
Compatibility

CPU 1517 Fail Safe only

New Processor Design, in order to secure the Availability of the complete Intel based CPU’s

- Last Time Buy for present Processor of 1517 / 1518 Series H/HF/T/TF/F
- Predicted Volume 1517/1518 until End of Life not sufficient
- 1517 F-3 PN/DP is having the highest Volume

New Processor for CPU 1517F-3 PN/DP

- Spare – Part Compatible successor with V19

- 6ES7517-3FP0**0**-0AB0 → 6ES7517-3FP0**1**-0AB0

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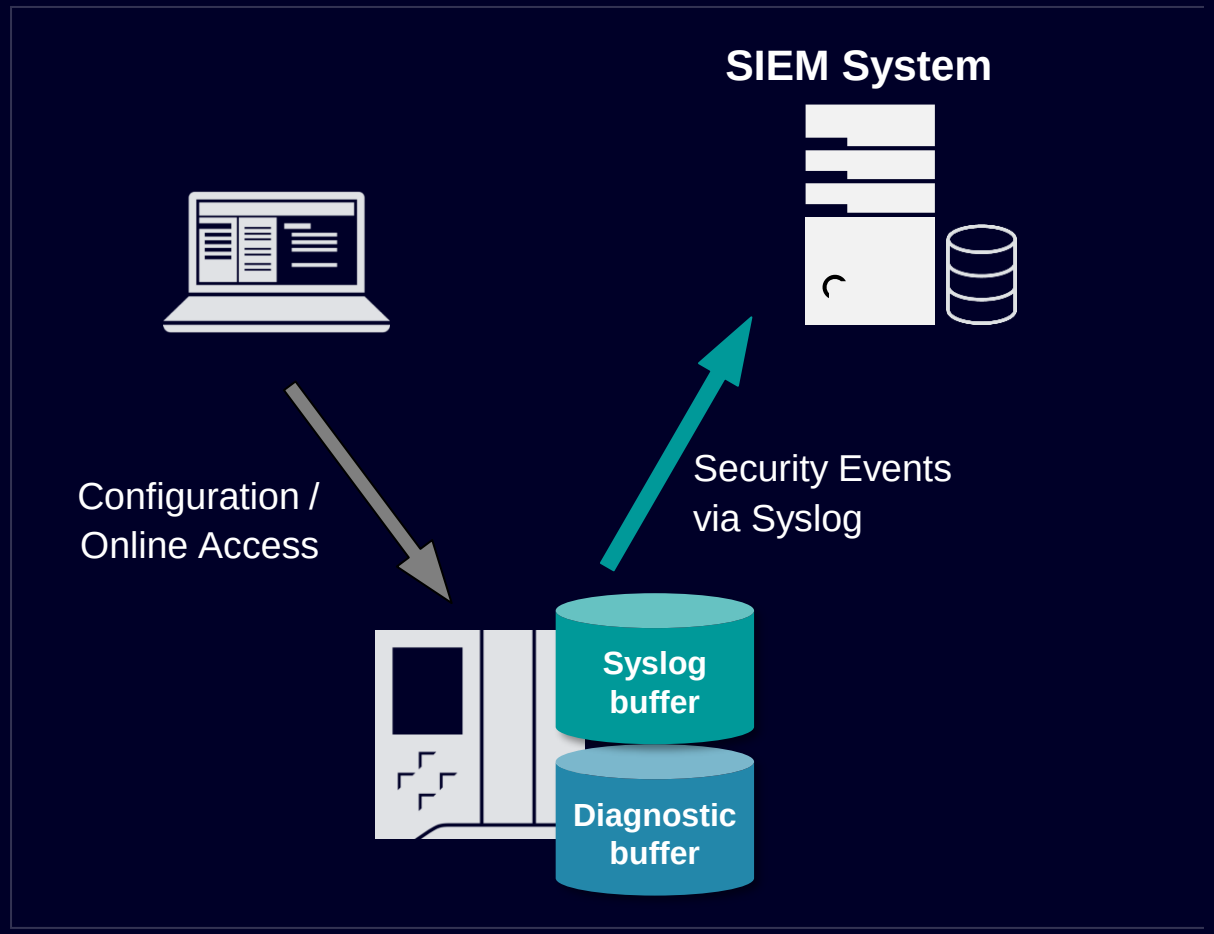
Hardware engineering
Security Logging in S7-1500 CPUs and software controller



Tracing and monitoring of critical PLC changes / operations with easy integration of into customer Security Monitoring solutions

- Separate security log in PLC for security related events
- Logging contains user information (in combination with UMAC in PLC) to trace who did what and when
- Easy integration into customers Security Monitoring solutions via forwarding to external SYSLOG / SIEM systems via syslog protocol (incl. secure syslog)

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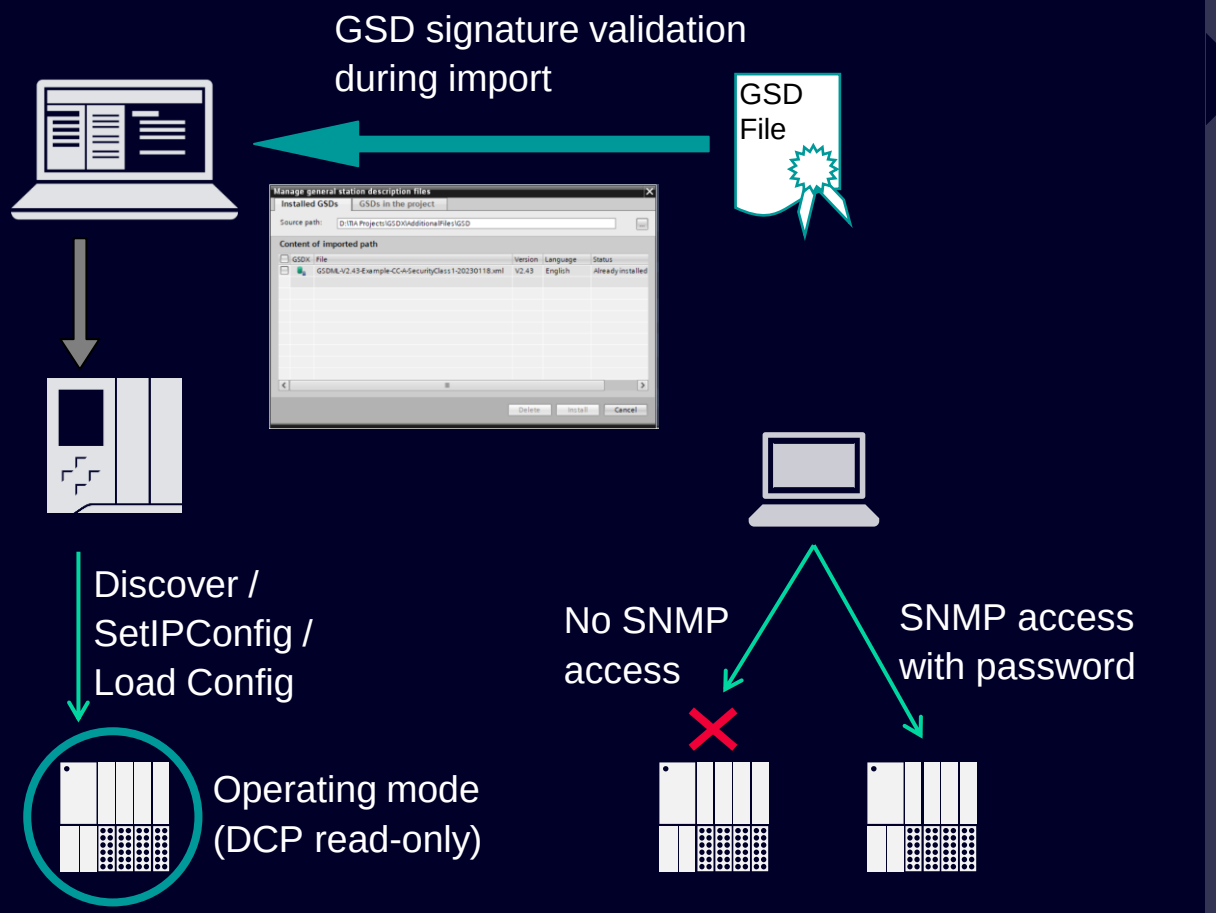
Hardware engineering
Support of PROFINET Security Class 1 functionality (Robustness)



Increased robustness for PROFINET communication by additional functionalities for PN components as part of PN Security Class 1:

- **SNMP configuration for PROFINET devices**
  allows individual setup according to machine / plant requirements (disable SNMP, change community name)
- **DCP read-only**
  rejects critical commands (like Reset-to-factory / Set Name) when PN Device is in operating mode.
  ➔ Higher protection against disruption of regular operations
- **GSD signature validation in TIA Portal**
  provides information if imported GSD is unmodified and by intended device vendor

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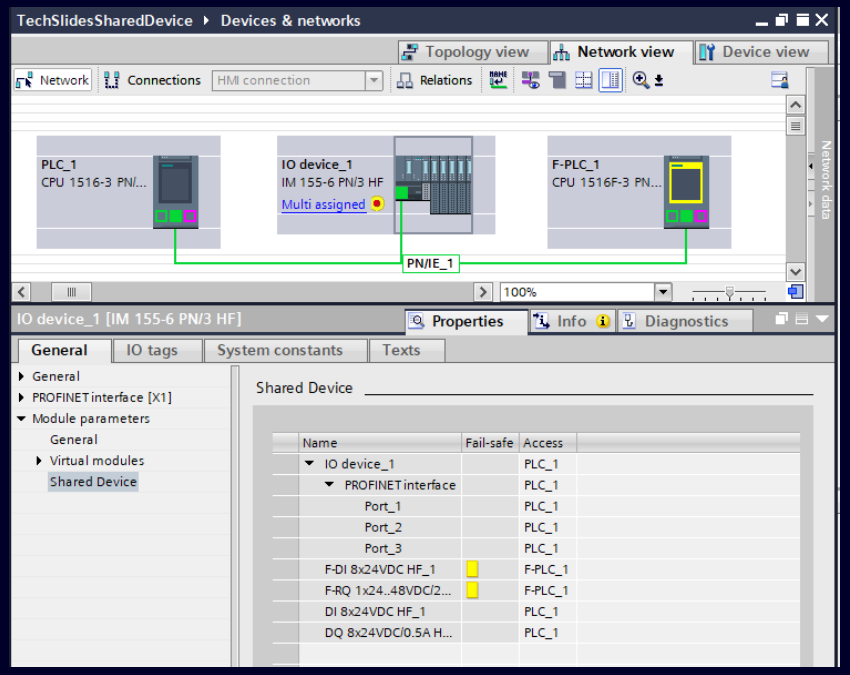
Hardware engineering
Configuring IO Devices shared by multiple IO Controllers in ONE Project

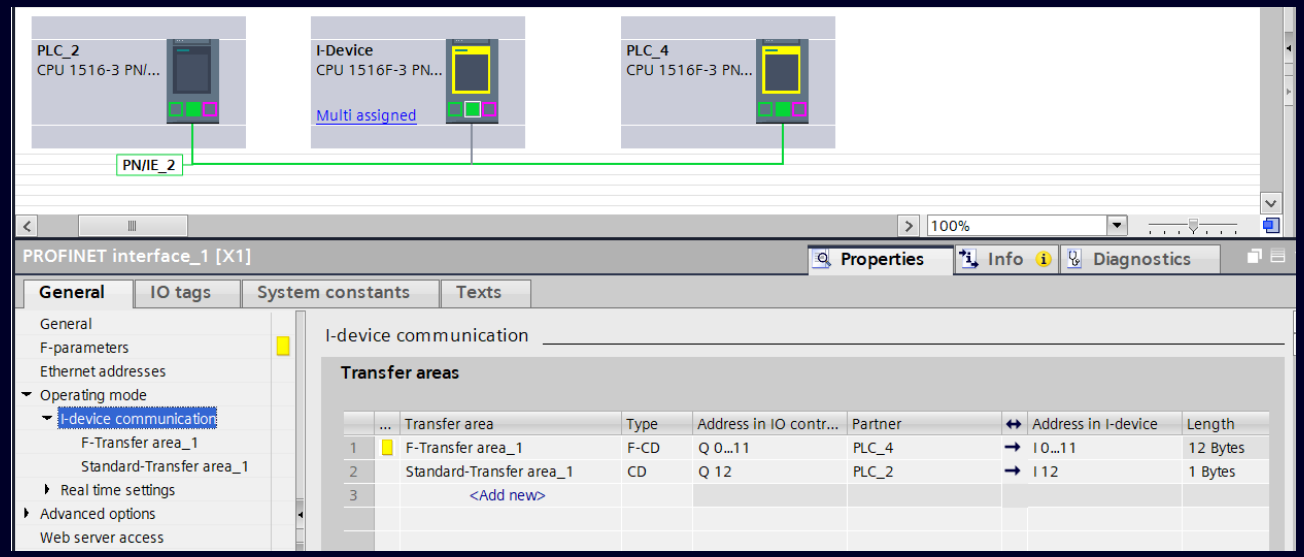
Do you know the situation of having to do things several times to get the expected result?

In TIA Portal V19 you can now configure IO devices and I-Devices shared by multiple IO Controllers directly from hardware catalog in one project. (The V18 restriction to GSD-based IO devices is no longer applicable as of V19)



Advantages:

- **Reduction of possible sources of error:**
  Complete consistency is checked by STEP 7 in one project.
- **More efficient configuration:**
  The STEP 7 project contains all devices and the assignment of the I/Os only needs to be configured once.
- **More efficient diagnostics: Complete Diagnostics in one project.**



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TIA Portal V19
System functions

SIMATIC WinCC Unified – Innovations

- New device versions for Unified PC RT, Unified Comfort Panel and Unified Basic Panel
- Engineering of Professional, Advanced and Unified on one PC
- Multiuser Engineering on screen level
- Standardization: extensions for faceplates and libraries
- Visual Studio Code as development environment for JavaScript
- Automatic login and auto-logoff on remote clients for PC RT
- Client device specific start screen for PC RT
- Configuration of kiosk mode for PC RT
- Corporate Designer to create styles

SIMATIC WinCC – Innovations

- Engineering of Professional, Advanced and Unified on one PC
- WinCC Advanced: no new RT Advanced V19 Version
- WinCC Professional: Faceplates for WebUX, REST API

SIMATIC STEP 7 – Innovations

- Support of named value data types within Software Units
- Symbolic Access @ Runtime – Support of structs and data types
- Long-term Trace: R/H-CPU support, Monitoring while recording
- SIMATIC Project Insights - Static Analysis of TIA Projects for faster orientation and quality improvements

SIMATIC Motion Control – Innovations

- SIMATIC Motion Interpreter
- Torque precontrol
- Monitoring Measuring Input
- New Axis Control Panel
- New / Extended Motion Control Functions
- Advanced Programming
- Project Integrated Shared i-Device / Shared IO devices

SINAMIC Startdrive – Innovations

- New drives: SINAMICS S200, S210 (New), G220, S120M
- Project-integrated Shared Device support
- Long-term Trace

TIA Portal Cloud & Cloud Connector

- Overview of new functions

SIMATIC Hardware

- S7-1500: Hardware Innovation for Compact CPUs 1511C and 1512C
- ET 200pro: Hardware Innovation for CPUs 1513pro and 1516pro
- S7-1500V: Virtual Controller CPU1517V-1 PN
- S7-1500 R/H: OPC UA/ Support for CP and IE/PB LINK HA
- S7-1500: technology module TM MFP
- ET 200SP Open Controller CPU 1515SP PC2: V30.0 / V30.1
- IO Devices shared by multiple IO Controllers in a joint Project
- S7-1200: CPU Firmware V4.7
- S7-1500: Hardware Innovation for CPU 1517F-3 PN/DP
- S7-1500 SW Controller V30.0 / V30.1 Linux OS

System functions

- Upgrading projects
- TIA Portal Openness
- TIA Portal Add-Ins
- TIA Portal Version Control Interface
- TIA Portal CAx: AutomationML
- TIA Portal User Management & Access Control (UMAC)
- TIA Portal Information System (Web View)
- TIA Portal High Resolution Monitor Support

SIMATIC Automation Xpansion

- TIAX library use-case improvements
- TIAX direct loading – Engineer HW-Config & TOs with TIA Portal / Program and load machine application to PLC with SIMATIC AX
- SIMATIC AX support in China

TIA Portal Options

- **SIMATIC STEP 7 Safety**
- **SIMATIC Safe Kinematics**
- **TIA Portal Multiuser**
- **SIMATIC Robot Library**
- **OPC UA**
- **SIMATIC S7-PLCSIM / S7-PLCSIM Advanced**
- **SIMATIC Target for Simulink**
- **TIA Portal Test Suite**
- **SIMATIC Visualization Architect (SiVArc)**
- **SIMATIC Energy Suite**
- **Central User Management (UMC)**
- **Modular Application Creator**
- **SIMATIC ProDiag / SysDiag**
- **TIA Portal Teamcenter Gateway**

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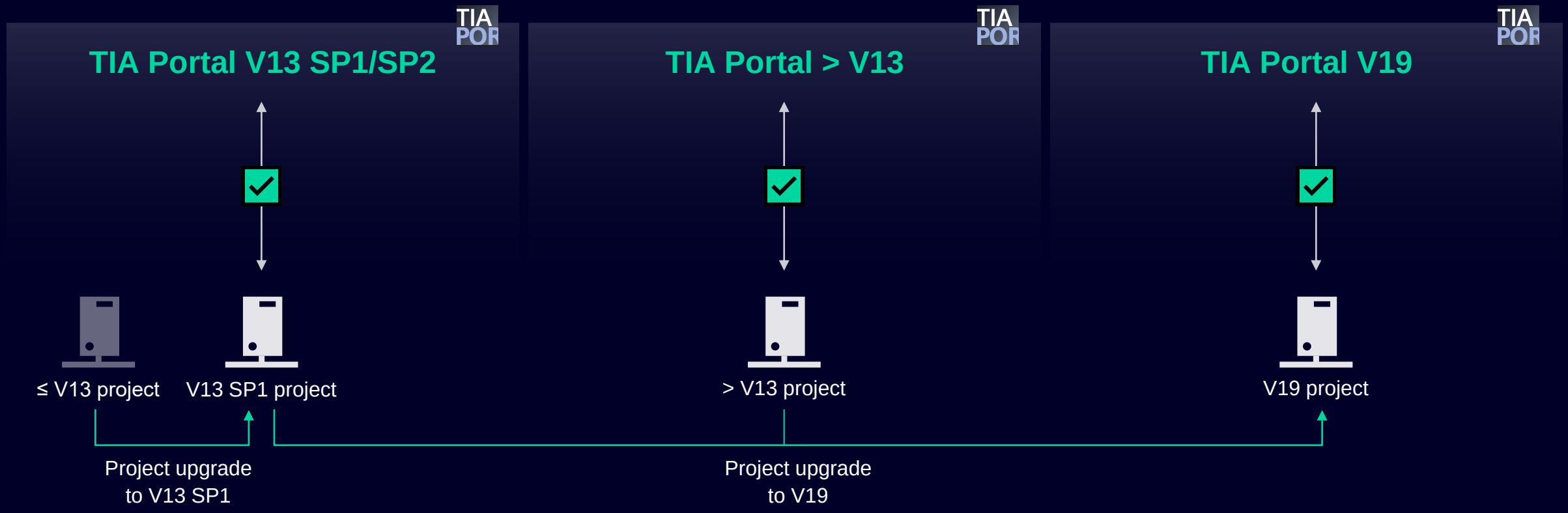
Upgrading projects

Upgrading projects



Side-by-side installation of **V13 SP1/SP2** up to **V19** allows access to all project versions.
The **V19** license can be used for all available versions from **V11**.

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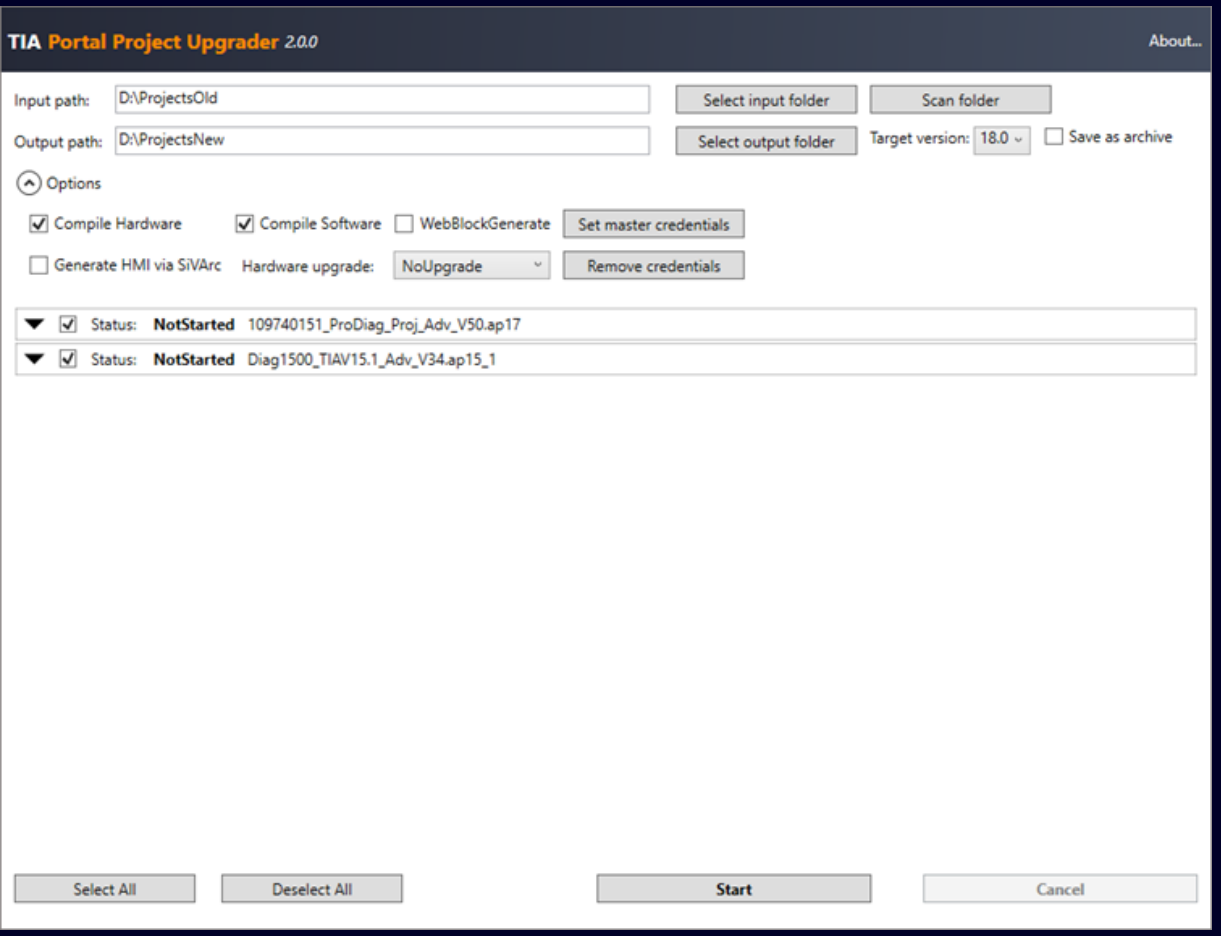
Upgrading projects



TIA Portal Project Upgrader
based on TIA Portal Openness

- Upgrade multiple TIA Portal projects from previous versions (> V13) to the current TIA Portal version at once
- Fully automate the upgrade process
- Options to automatically upgrade hardware and firmware
- Options to automatically compile project and to start SiVArc generation after upgrade

Free download at SiePortal: 109811744

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TIA Portal Information System

TIA Portal Information System (Web View)

TIA Portal information system in the web browser

In V19, we offer a first glimpse at the Web View of the Information system.

The information system of the TIA Portal can now optionally be displayed in your default Windows browser.

Enable the Web View with the setting:

"Tools > Settings > General > Information System"

Modern design and improved navigation

The Web View offers modern functionality, such as:

- Modern web design
- Modern search function and filters
- Bookmarks and tab handling in the web browser

Further development based on your feedback

In subsequent versions of TIA Portal, we will continue to improve the browser-based information system.

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TIA Portal support of High-Resolution Monitors

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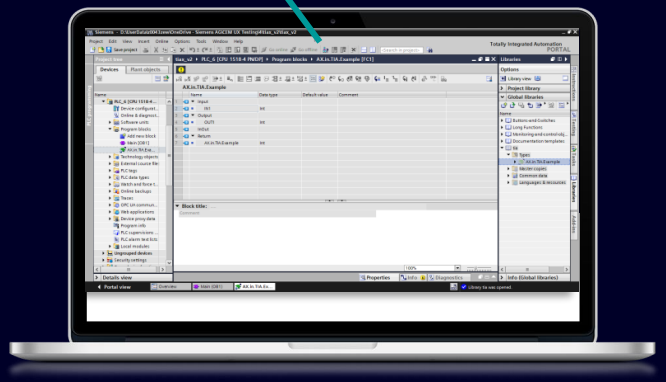
TIA Portal support of High-Resolution Monitors

TIA Portal does support-High-Resolution Monitors by default, no configuration needed.



TIA Portal support of High-Resolution Monitors

The User Interface of TIA Portal has now an improved support of High-Resolution monitors and displays.

- Better readability of e.g.: texts,..
- Improved visibility of graphics, icons,..

--> Support of high-resolution monitors, e.g. 4K resolution displays

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TIA Portal Openness

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TIA Portal Openness is our API for automating your engineering workflows

SiePortal: 109792902

Highlighted API extensions in V19:

- Long-term support and compatibility
- More flexible handling of SimaticML files
- Extended access to the hardware configuration
- Extended hardware data exchange
- Online scenarios
- STEP 7 extensions
- New API functions in additional option packages:
  Test Suite Advanced, WinCC Unified, SINAMICS Startdrive

For a list of all new features, refer to the TIA Portal Openness system manual, chapter “What’s new”.

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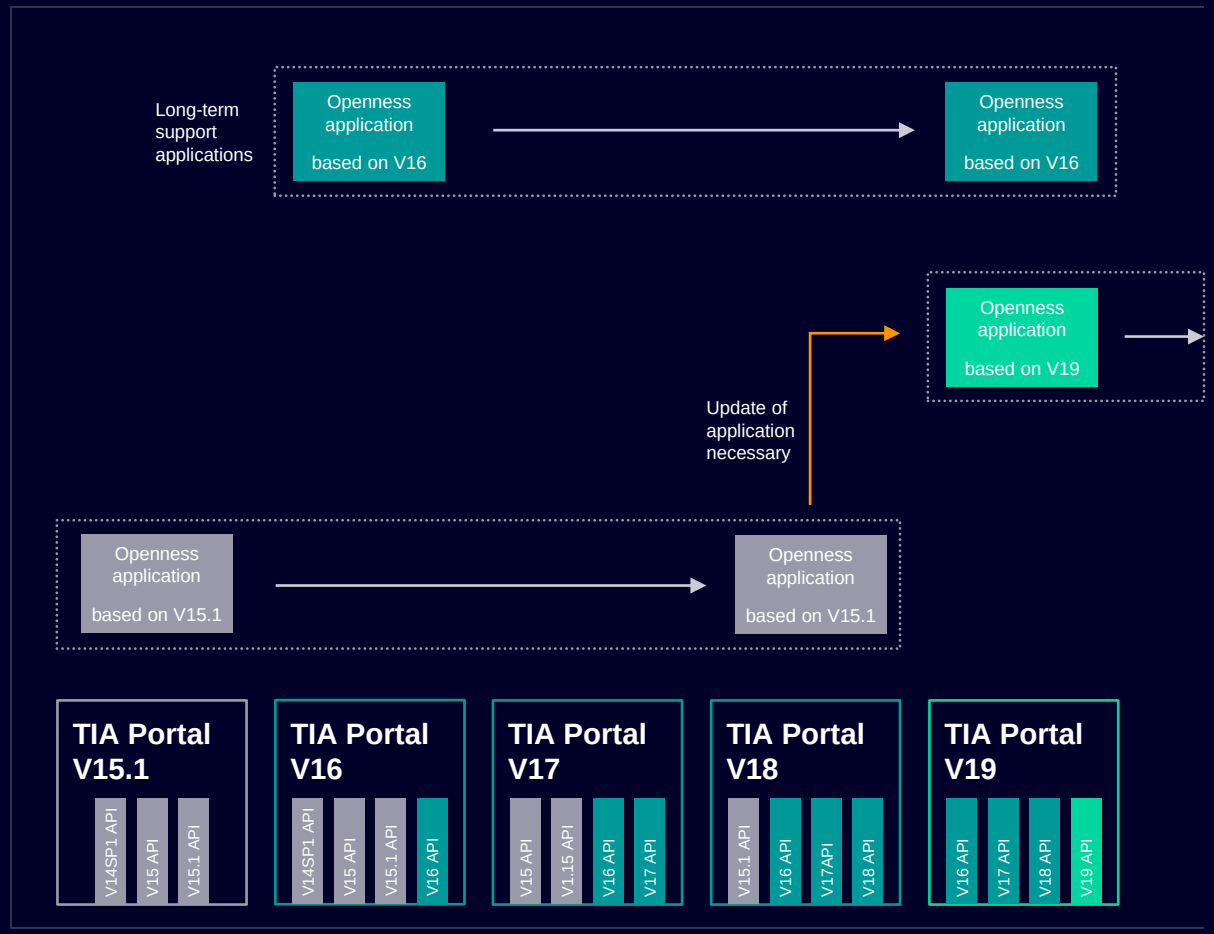
TIA Portal Openness
Long-term support and compatibility



Long-term support (LTS)

Existing Openness applications since V16 will continue working.
TIA Portal V19 delivers the LTS APIs for V16, V17, and V18.

New API version

TIA Portal V19 delivers the new API version V19 to use the latest Openness features.

Discontinuation of oldest API version

TIA Portal V19 no longer delivers the oldest API version V15.1.
An update of applications using this version is necessary.

.NET SDK version

TIA Portal and TIA Portal Openness rely on .NET Framework 4.8 as a mature software framework to build long-running enterprise-grade industrial-suited applications.

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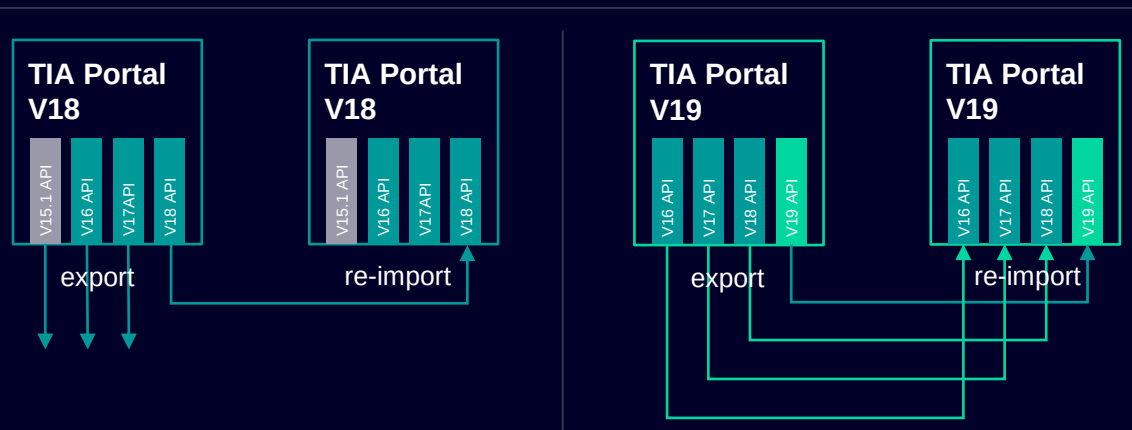
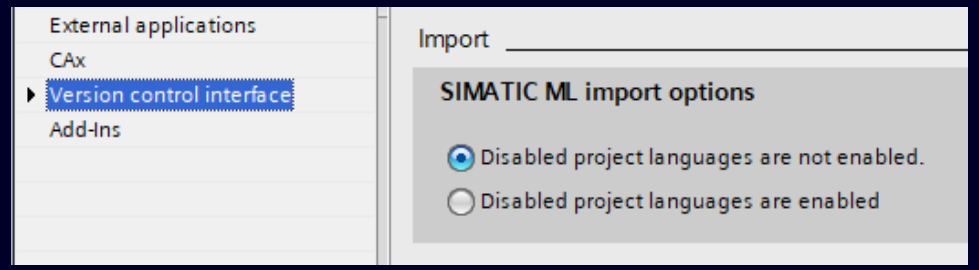
TIA Portal Openness
More flexible handling of SimaticML files





SimaticML

SIMATIC Markup Language (SimaticML) is a Siemens standard for the exchange of software data in TIA Portal.
The standard is used by TIA Portal Openness when exporting and importing software data such as program blocks etc.

Enhanced compatibility for LTS applications

The export always produces SimaticML files in the latest version. Regardless which API version is used, SimaticML re-import is now supported. TIA Portal V19 can import SimaticML from V16, V17, V18, V19.

Language support

In case the SimaticML file contains more or less cultures than configured in the active TIA Portal project languages, the import operation now provides options to automatically activate the inactive cultures or to skip the inactive cultures in addition to the existing behavior (reject the import).

VCI

Version Control Interface (VCI) also provides a new setting to configure the behavior in case of different languages in SimaticML files.

The SimaticML schemas are part of the installation:
C:\Program Files\Siemens\Automation\Portal V19\PublicAPI\V19\Schemas

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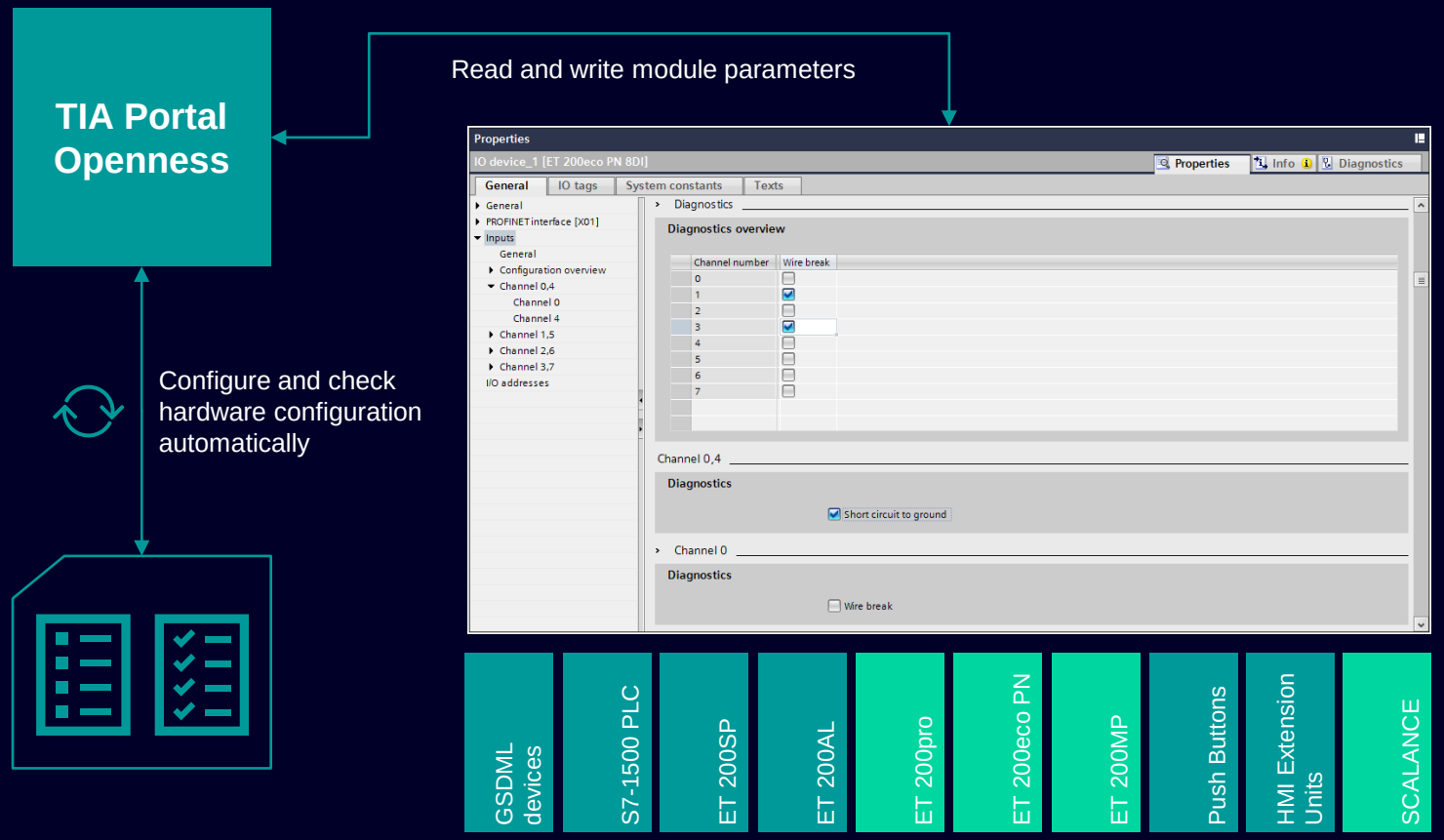
TIA Portal Openness
Extended access to the hardware configuration



Additional parameters support

Read and write hardware parameters for additional module families for automated hardware configuration or checks:

- ET 200pro Safety
- ET 200eco PN Safety
- ET 200MP Safety
- SCALANCE XC-200 / XP-200 (≥ V4.3), SC-600 (≥ V2.3)

Parameters support for the following module families is already provided with previous TIA Portal versions:

- GSDML devices (generic approach)
- S7-1500 PLC
- ET 200SP
- ET 200AL
- ET 200pro (Standard)
- ET 200eco PN (Standard)
- ET 200MP (Standard, except communication modules)
- Push Buttons
- HMI Extension Units (Standard)

*The detailed list of supported modules and parameters is part of the system manual (**appendix**) and next to the API: C:\Program Files\Siemens\Automation\Portal V19\PublicAPI\V19\HW Parameter description*

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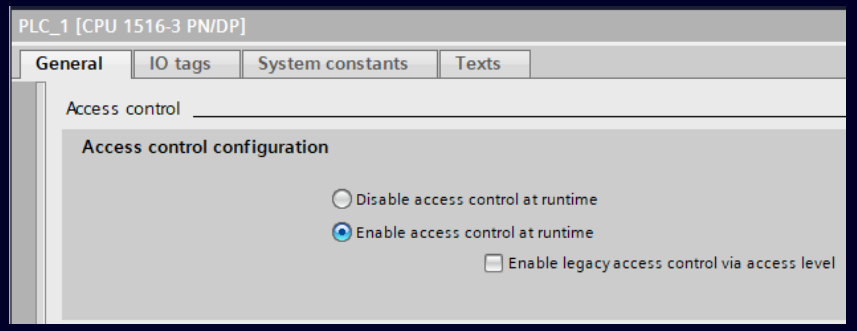
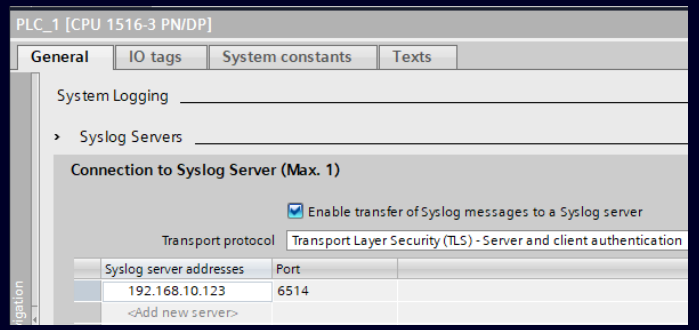
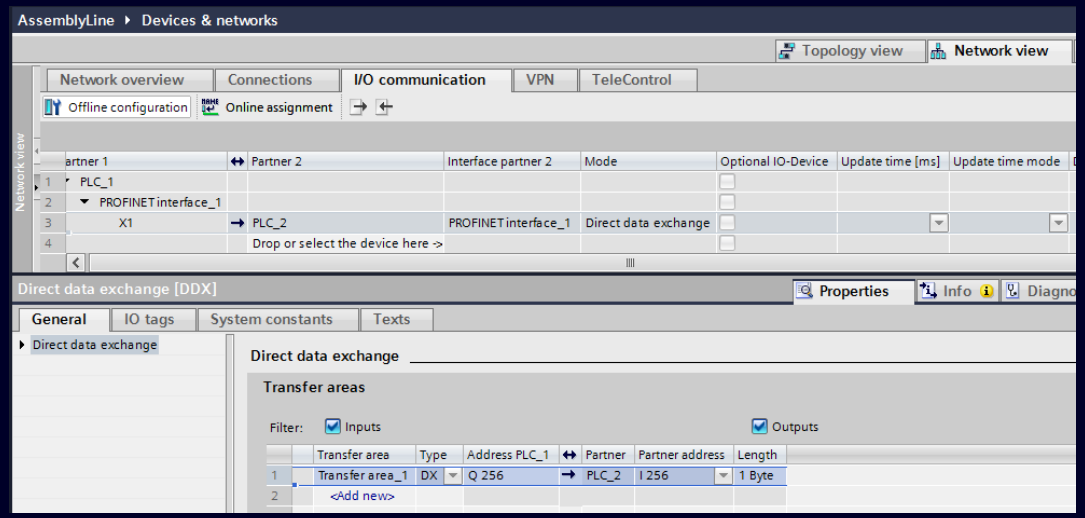
TIA Portal Openness
Extended access to the hardware configuration







PLC configuration

Configure S7-1500 CPU via TIA Portal Openness for

- System diagnostics
- new PLC system logging including Syslog server
- new PLC access control (UMAC on PLC and access levels)
- new default language for OPC UA alarms and events
- new data access for web server

I/O communication

Create, read, update, and delete transfer areas for PLC-PLC direct data exchange (DDX)

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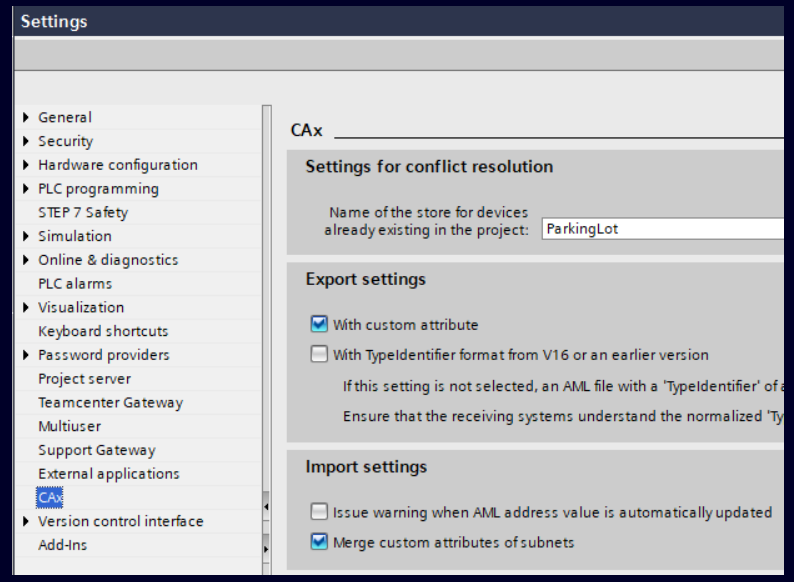
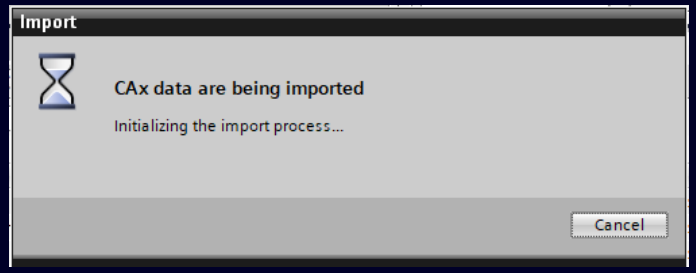
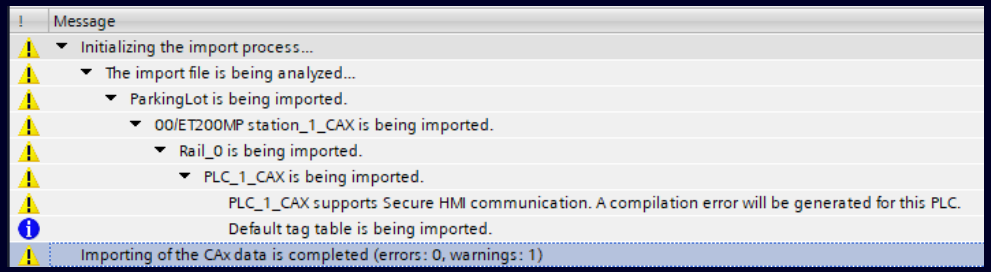
TIA Portal Openness
Extended hardware data exchange







CAx data exchange

CAx uses the open AutomationML format to exchange hardware data between TIA Selection Tool, ECAD software (e.g. EPLAN Electric P8), and TIA Portal.

TIA Portal Openness enhancements:

- Get transfer result from CAx import/export operation via TIA Portal Openness for further processing
- Support of additional attributes for hardware configuration exchange (see separate chapter “CAx: AutomationML Exchange” in the slides)

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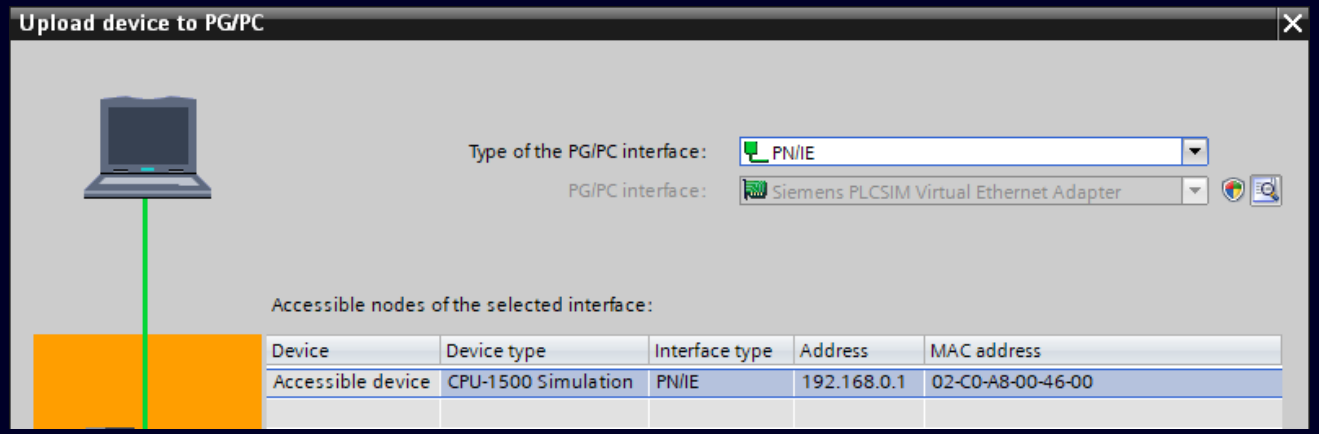
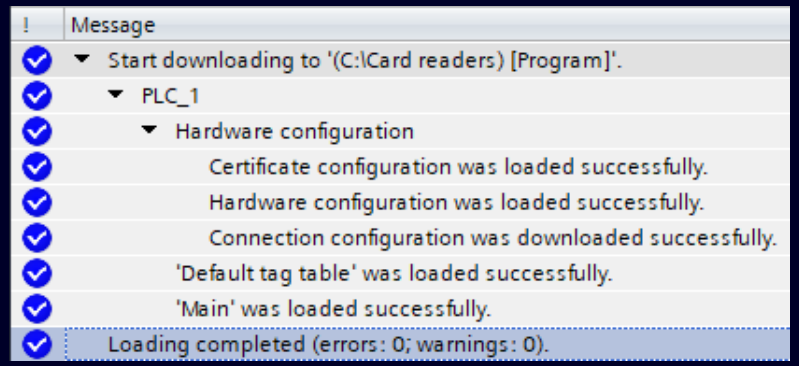
TIA Portal Openness
Online scenarios





Accessible online devices

Retrieve a list of accessible online devices via TIA Portal Openness for a station upload or download.

Create SIMATIC memory card

Download a PLC including Safety to a SIMATIC memory card folder or create a PC system configuration (PSC) file including Safety via TIA Portal Openness.

UMAC on PLC

Configure project users and roles, handle UMAC user management data for download to PLC and provide UMAC credentials for online PLC access legitimation via TIA Portal Openness.

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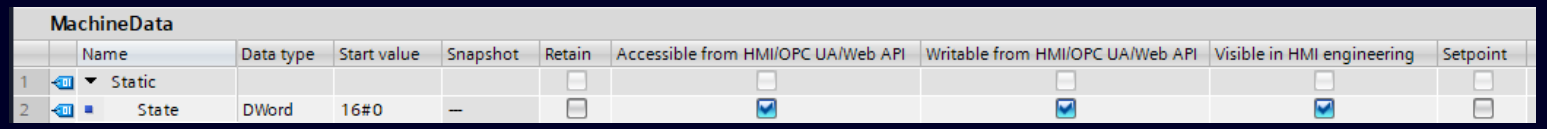
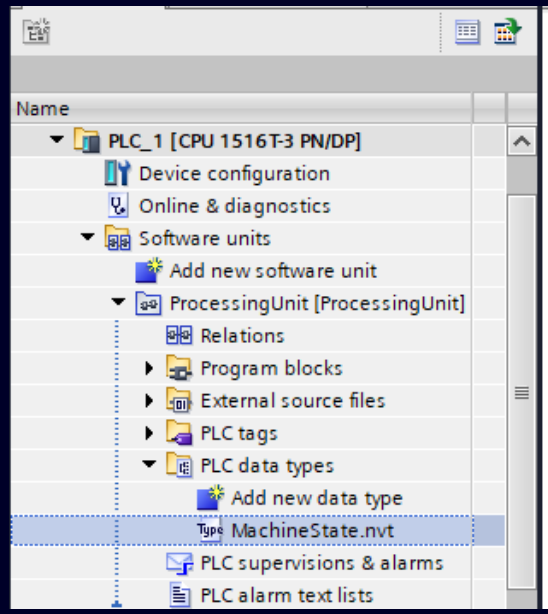
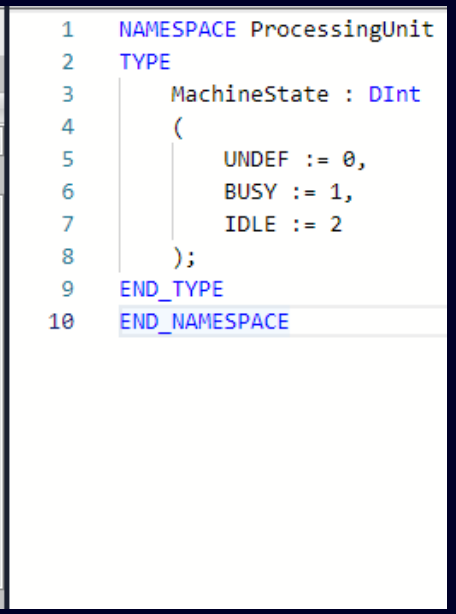
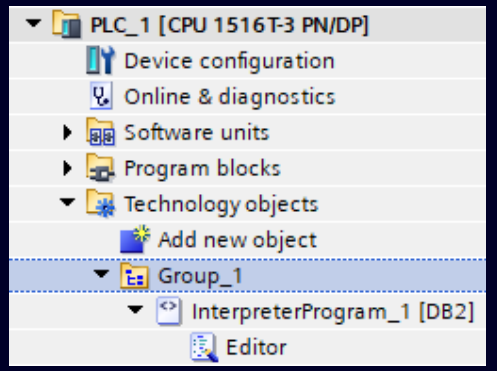
TIA Portal Openness
STEP 7 extensions









Data blocks

Read and write access for additional columns in data blocks by API browsing (where applicable) instead of export/import via TIA Portal Openness:

Name, StartValue, AssignedProDiagFB, ExternalAccessible, ExternalVisible, ExternalWritable, Retain, SetPoint, DataTypeName, Snapshot, DefaultValue

Named value types

Named value constants are supported during program block / PLC data type export/import.

The SimaticML schema has been extended to support the usage of named value types.

Technology objects

Support of groups for technology objects.

Import and export files for interpreter programs.

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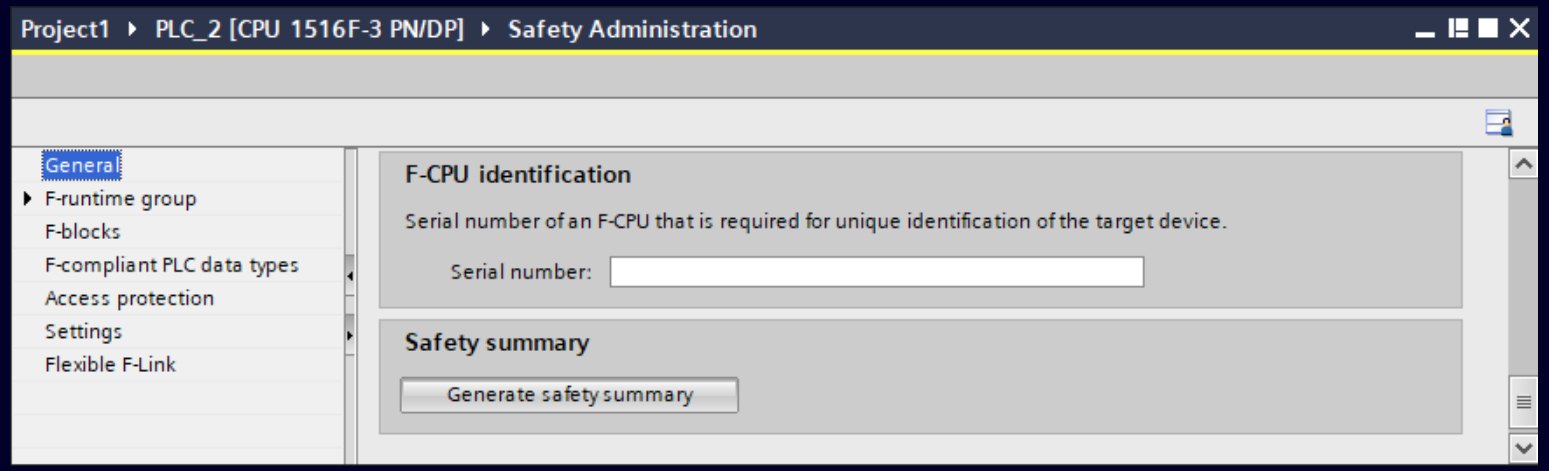
TIA Portal Openness
STEP 7 Safety



STEP 7 Safety

The serial numbers of F-PLCs are required for unique identification of the target devices. It is part of the Safety Administration Editor.

Configure the serial numbers via TIA Portal Openness to automate the preparation of the subsequent manual download of the Safety program to the correct target F-PLCs.

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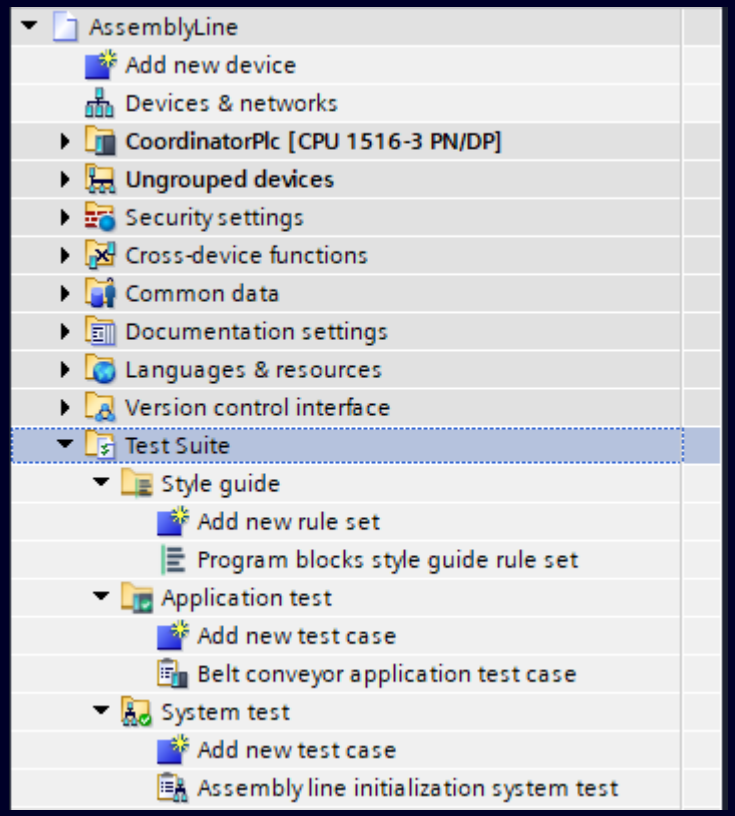
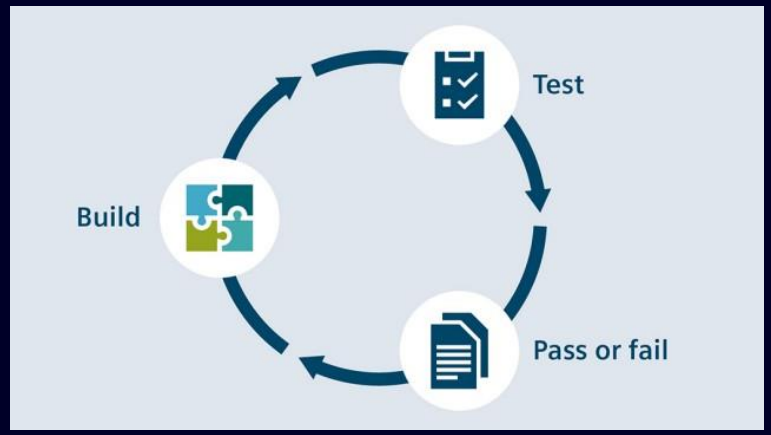
TIA Portal Openness
New API functions in additional option packages: **Test Suite Advanced**



Automated Build and Test via TIA Portal Openness



Test Suite Advanced

Programming style checks, application tests, and system tests can be **automatically created, configured, and executed periodically and reports created** via TIA Portal Openness.

For automated project verification

Extended TIA Portal Openness support for configuration of application tests and system tests as well as automated creation via master copies.

Support for automated testing of Safety code in F-PLCs in combination with S7-PLCSIM Advanced by the download to SIMATIC memory card folder via TIA Portal Openness.

Continuous Testing & Integration

Rapid program changes require Continuous Testing. This is one essential part of Continuous Integration.

Benefits of Continuous Testing and Continuous Integration:

- Accelerate the development process
- Lower risk of faults
- Increase transparency of processes
- Save time through automated processes

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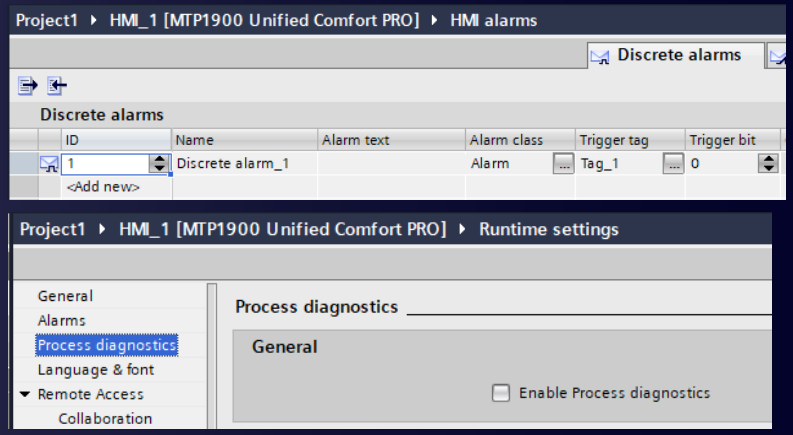
TIA Portal Openness
New API functions in additional option packages

WinCC Unified

TIA Portal Openness extensions:

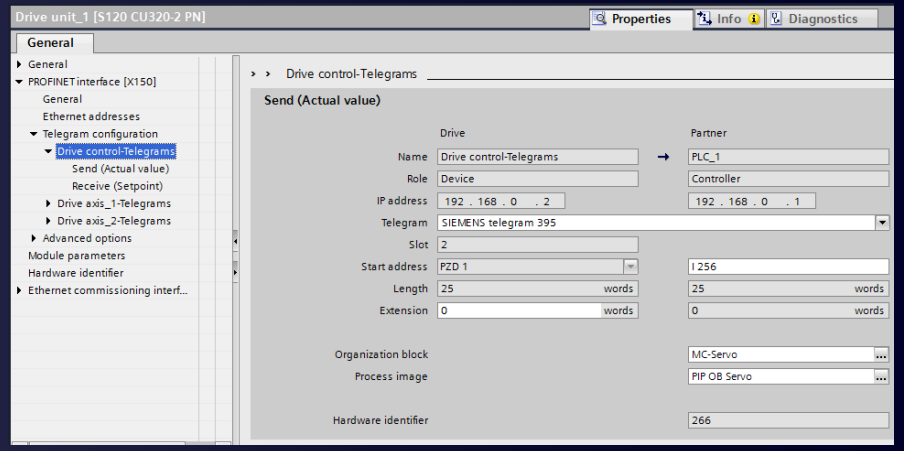
- Access to additional object attributes
- Access to additional runtime settings
- Reworked WinCC Unified chapter in the TIA Portal Openness system manual for an object-oriented approach including enhanced code snippets



SINAMICS Startdrive

TIA Portal Openness extensions:

- Connect a technology object to a Startdrive telegram
- Read hardware ID of a Startdrive telegram
- Support of new Startdrive devices
- Parameterization of 3rd party encoders



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TIA Portal Add-Ins

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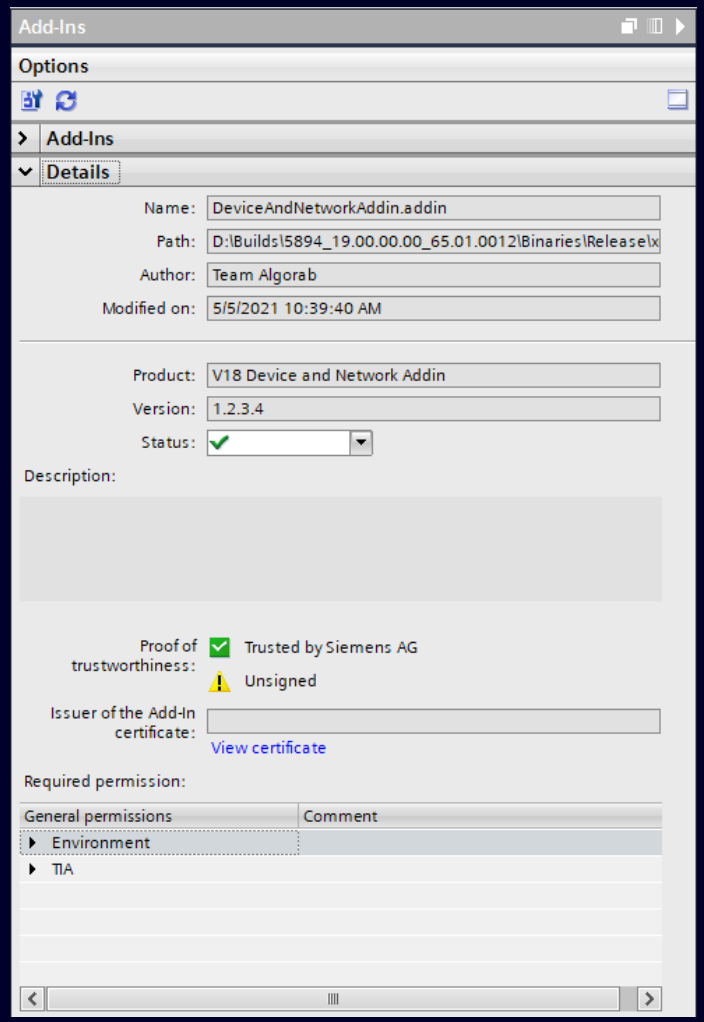
TIA Portal Add-Ins
Company Trusted Add-Ins



Authorization of Add-In usage by companies

- Companies can approve Add-Ins for usage within the company
- Approval can be centrally managed for all Add-Ins
- Approval can also be centrally be revoked

Benefits

- Approval is visible in the properties of an Add-In
- Company trusted Add-Ins are activated automatically without any user interaction

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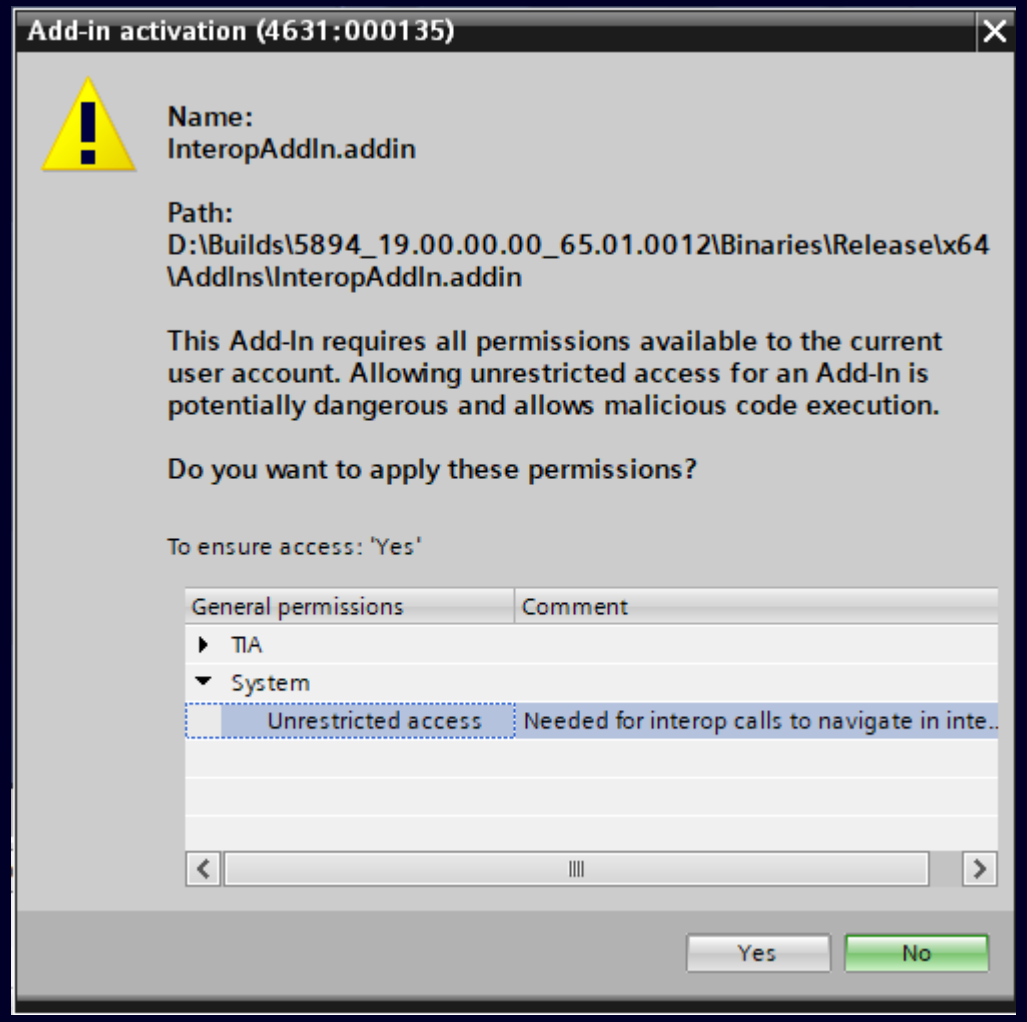
TIA Portal Add-Ins
Add-Ins running without access restrictions



New permission for the execution of Add-Ins

- Add-Ins can now run with all permissions of its user
- No limitations of available functionality due to the .NET sandbox model
- Permission for unrestricted access can be selected in the Add-In Development Tools for Visual Studio 2019 & 2022 as well as for Visual Studio Code
- Add-In author must give a justification for the usage of unrestricted access

Benefits

Extended functionality for Add-In programming available like

- Interop assemblies
- System functions

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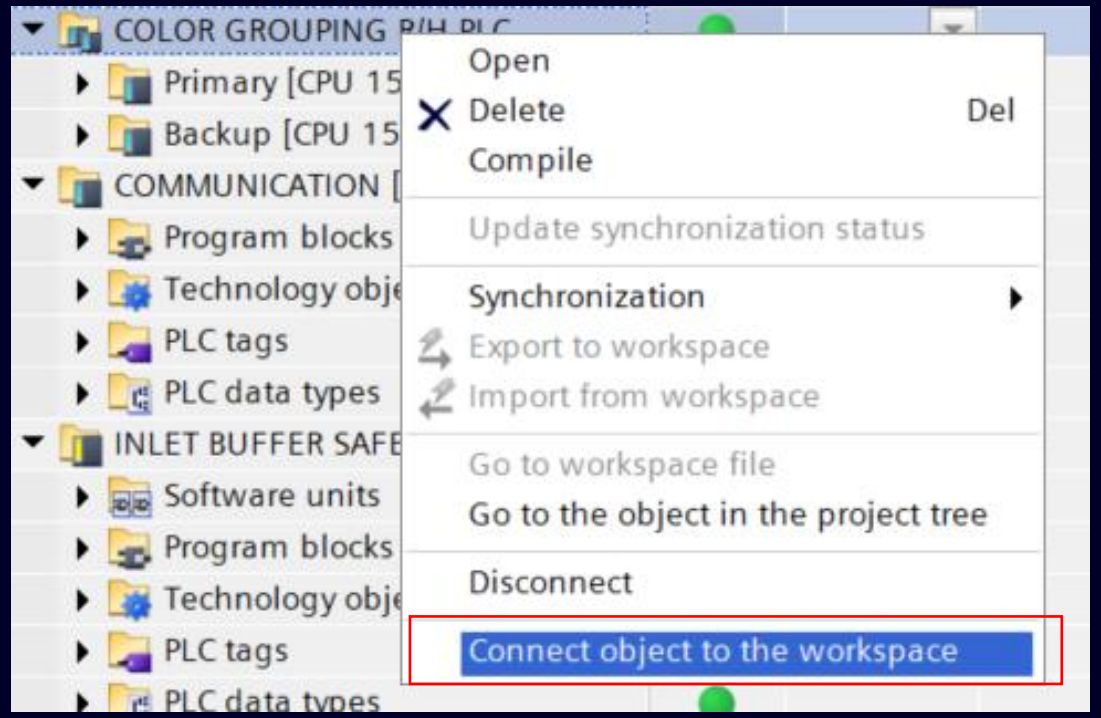
Version Control Interface (VCI)

Version Control Interface
Connection a project to an existing workspace



Reconnecting a previously mapped workspace to a project

- Connection is established to the objects and the files automatically by matching the structures in the project and the workspace
- Any object inside the project as well as project node itself can be selected as starting point for establishing connection

Benefits

- Only single click by the user required
- Mapping of complete hierarchies in the project structure and synchronization status calculation is done automatically
- No manual mapping for each object is necessary

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CAx: AutomationML

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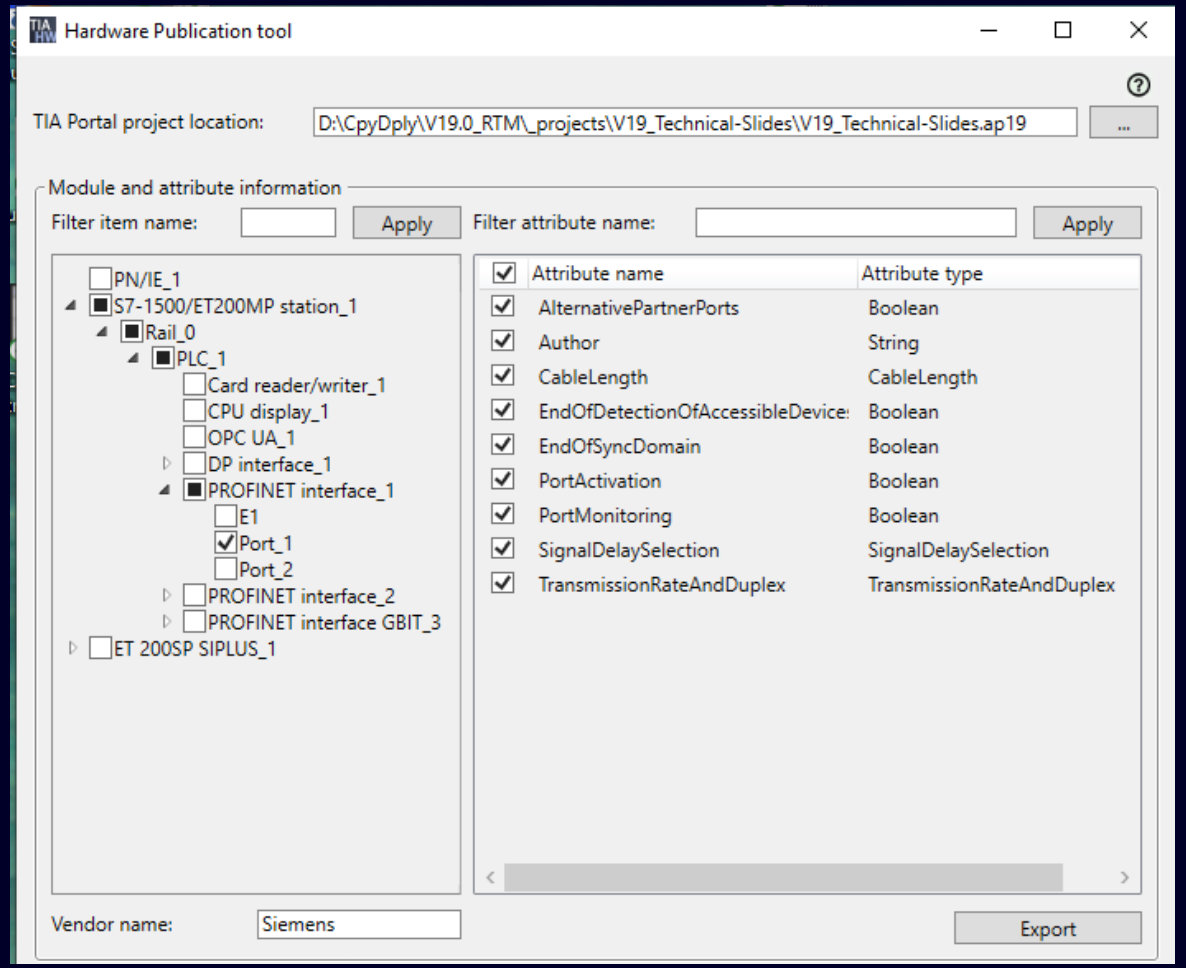
CAx: AutomationML Exchange
Exchange of additional attributes on communication objects



Support of custom attributes at communication objects

- Additional attributes at communication objects can now be exchanged as custom attributes via AutomationML
- Custom attributes are available at subnets, interfaces, nodes, ports, and IO systems
- The CAx Publication Tools now support also the retrieval of custom attributes at communication objects

Benefits

- Easy retrieval of available custom attributes via CAx Publication Tools
- Extended reuse of hardware configuration created outside TIA Portal

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User Management & Access Control (UMAC)

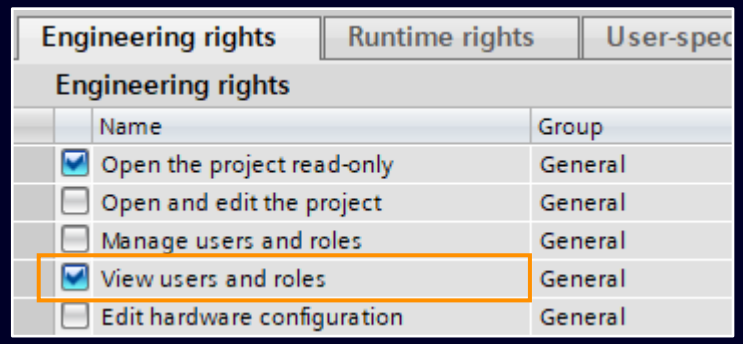
System functions
User Management & Access Control (UMAC)

The TIA Portal project offers integrated user administration and access protection. For consistent access protection, user roles can be configured with function rights for engineering and runtime. Users and user groups can also be managed centrally by connecting TIA Portal to a UMC domain.

New Function right to view users and roles

Beside the existing function right to <Manage users and roles> we provide a new function right to explicitly <View users and roles> only.

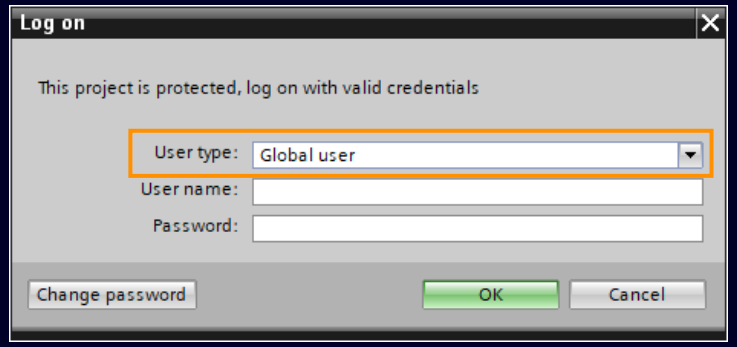
→ This enables the project administrator to configure roles more specific.



New Log on dialog remembers user type

For log on or change user, the last used user type (e.g. global user) is preselected.

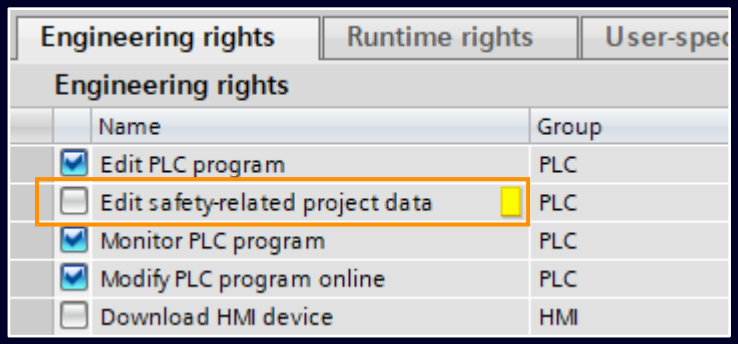
→ This makes authentication little bit more comfortable.



New Highlight safety relevant function rights

Function rights with safety relevance are visualized with a yellow safety card to avoid misconfiguration of user roles.

→ Easily recognize functions rights with safety relevance for reliable user roles configuration.



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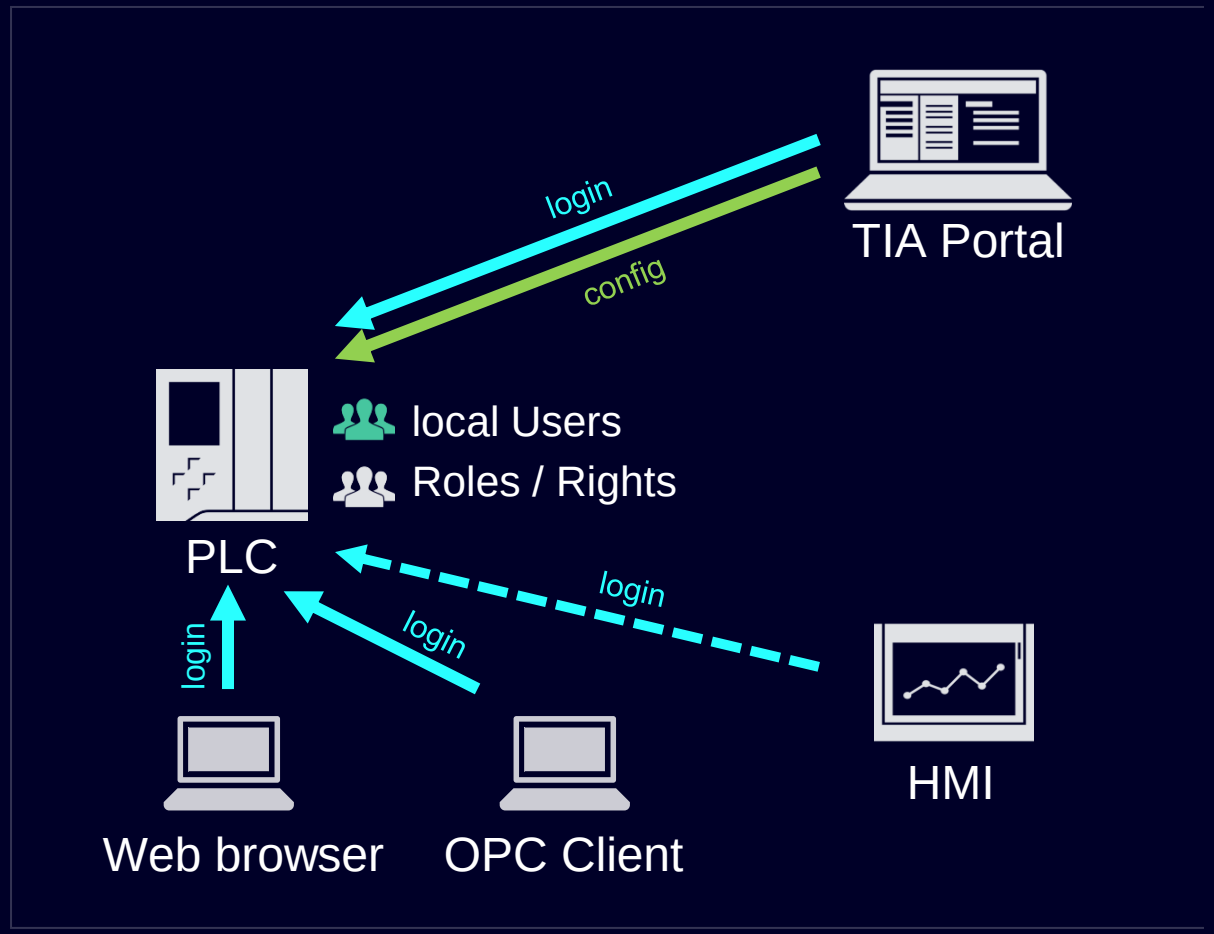
System functions
Consistent user and rights management for S7-1500 PLCs and Software Controller



Flexible access control for multiple users, based on individual rights with unified user management in S7-1200/1500 PLCs and Software Controller

- Unique user accounts with individual access rights for suitable access configuration according to users tasks
- Single user account usable for different PLC services (e.g. engineering access, Webserver)
- Roles / Rights concept for different PLC functionality integrated into existing TIA Portal UMAC configuration
- Support of user changes on PLC during runtime

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TIA Portal V19
SIMATIC Automation Xpansion

SIMATIC WinCC Unified – Innovations

- New device versions for Unified PC RT, Unified Comfort Panel and Unified Basic Panel
- Engineering of Professional, Advanced and Unified on one PC
- Multiuser Engineering on screen level
- Standardization: extensions for faceplates and libraries
- Visual Studio Code as development environment for JavaScript
- Automatic login and auto-logoff on remote clients for PC RT
- Client device specific start screen for PC RT
- Configuration of kiosk mode for PC RT
- Corporate Designer to create styles

SIMATIC WinCC – Innovations

- Engineering of Professional, Advanced and Unified on one PC
- WinCC Advanced: no new RT Advanced V19 Version
- WinCC Professional: Faceplates for WebUX, REST API

SIMATIC STEP 7 – Innovations

- Support of named value data types within Software Units
- Symbolic Access @ Runtime – Support of structs and data types
- Long-term Trace: R/H-CPU support, Monitoring while recording
- SIMATIC Project Insights - Static Analysis of TIA Projects for faster orientation and quality improvements

SIMATIC Motion Control – Innovations

- SIMATIC Motion Interpreter
- Torque precontrol
- Monitoring Measuring Input
- New Axis Control Panel
- New / Extended Motion Control Functions
- Advanced Programming
- Project Integrated Shared i-Device / Shared IO devices

SINAMIC Startdrive – Innovations

- New drives: SINAMICS S200, S210 (New), G220, S120M
- Project-integrated Shared Device support
- Long-term Trace

TIA Portal Cloud & Cloud Connector

- Overview of new functions

SIMATIC Hardware

- S7-1500: Hardware Innovation for Compact CPUs 1511C and 1512C
- ET 200pro: Hardware Innovation for CPUs 1513pro and 1516pro
- S7-1500V: Virtual Controller CPU1517V-1 PN
- S7-1500 R/H: OPC UA/ Support for CP and IE/PB LINK HA
- S7-1500: technology module TM MFP
- ET 200SP Open Controller CPU 1515SP PC2: V30.0 / V30.1
- IO Devices shared by multiple IO Controllers in a joint Project
- S7-1200: CPU Firmware V4.7
- S7-1500: Hardware Innovation for CPU 1517F-3 PN/DP
- S7-1500 SW Controller V30.0 / V30.1 Linux OS

System functions

- Upgrading projects
- TIA Portal Openness
- TIA Portal Add-Ins
- TIA Portal Version Control Interface
- TIA Portal CAx: AutomationML
- TIA Portal User Management & Access Control (UMAC)
- TIA Portal Information System (Web View)
- TIA Portal High Resolution Monitor Support

SIMATIC Automation Xpansion

- TIAX library use-case improvements
- TIAX direct loading – Engineer HW-Config & TOs with TIA Portal / Program and load machine application to PLC with SIMATIC AX
- SIMATIC AX support in China

TIA Portal Options

- **SIMATIC STEP 7 Safety**
- **SIMATIC Safe Kinematics**
- **TIA Portal Multiuser**
- **SIMATIC Robot Library**
- **OPC UA**
- **SIMATIC S7-PLCSIM / S7-PLCSIM Advanced**
- **SIMATIC Target for Simulink**
- **TIA Portal Test Suite**
- **SIMATIC Visualization Architect (SiVArc)**
- **SIMATIC Energy Suite**
- **Central User Management (UMC)**
- **Modular Application Creator**
- **SIMATIC ProDiag / SysDiag**
- **TIA Portal Teamcenter Gateway**

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OUR EXISTING TIA PORTAL ECOSYSTEM

grows for maximum flexibility

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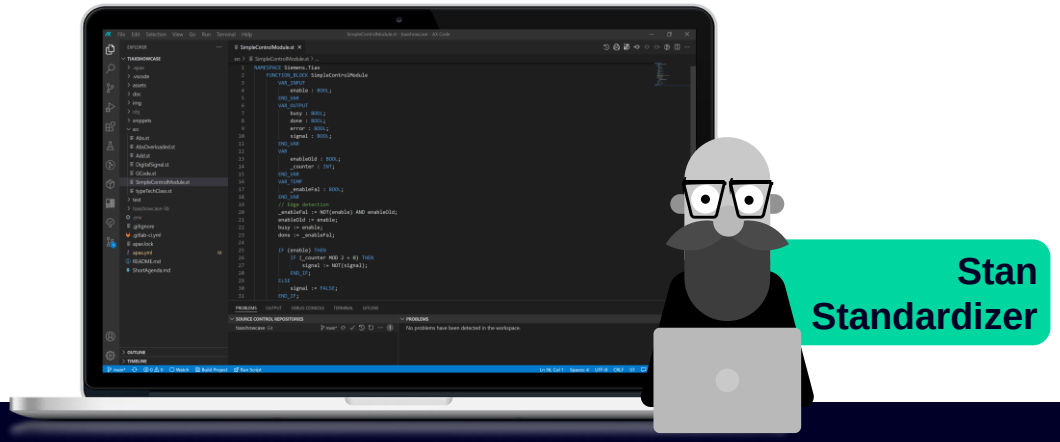
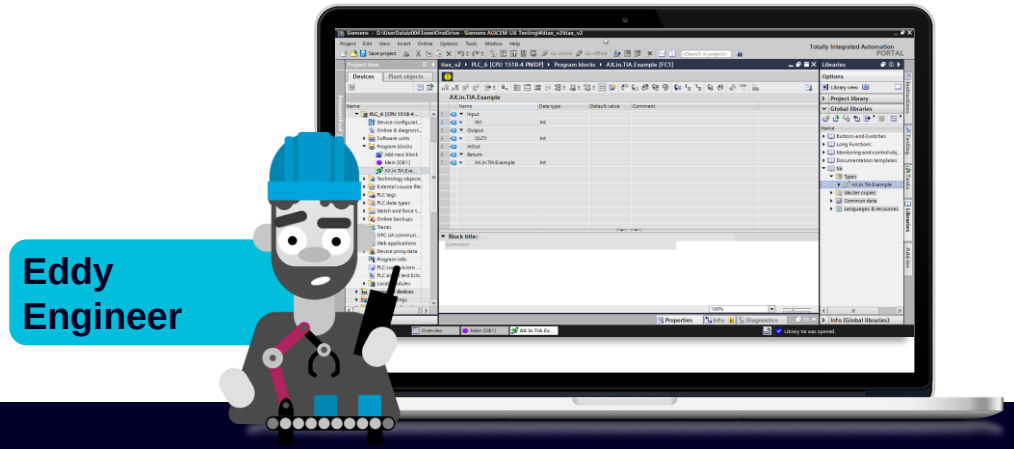
SIMATIC AX

TIAX Library Use Case





SIMATIC AX → **AX2TIA** → **STEP 7 TIA Portal**

Program library functionality	Test library	Generate/update Global TIA Portal Library	New version of TIA Portal library	Create hardware configuration	Open and update library	Create machine application	Download HW config & code to PLC	Monitor & debug variables

Debug library on PLC: Monitoring and tracing of variables (simultaneously with TIA Portal)

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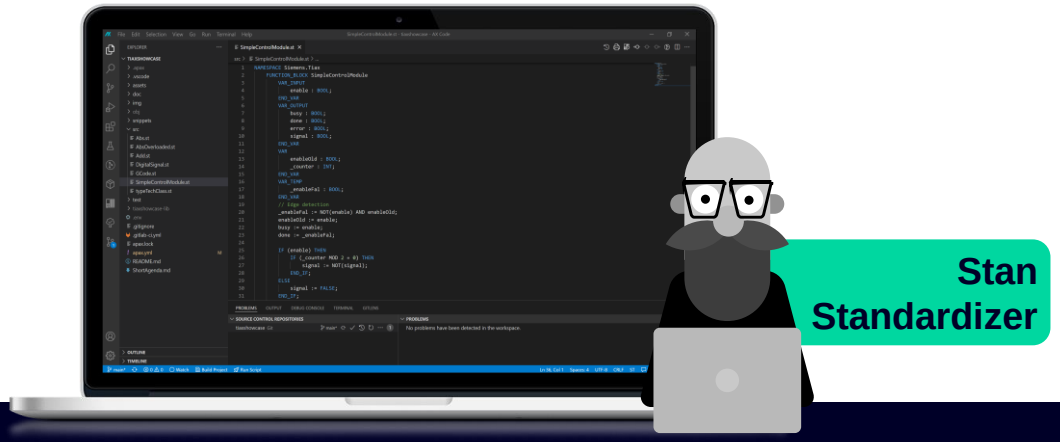
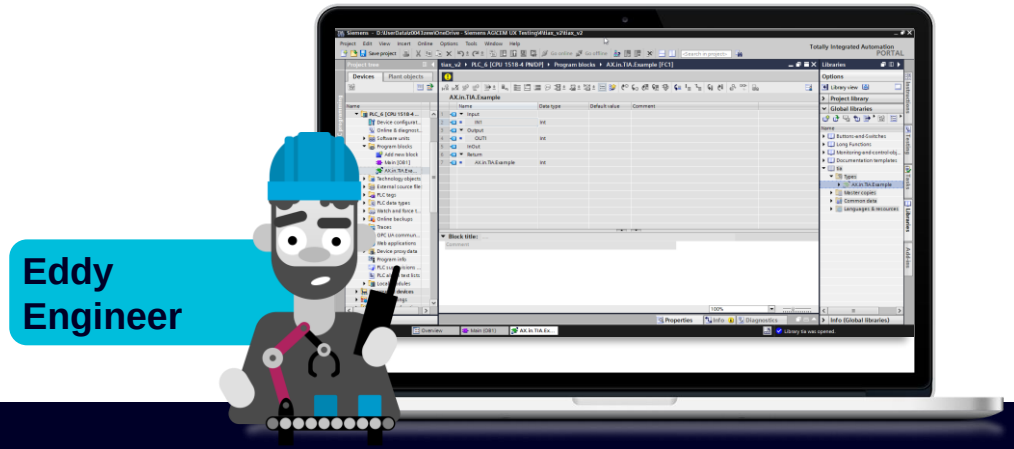
SIMATIC AX

TIAX Library Use Case





SIMATIC AX

Use the benefits of OOP, unit testing framework and Git connectivity for code standardization

Create, test and maintain S7-1500 standard libraries with SIMATIC AX

Benefit from the advantages of both engineering systems

STEP 7 TIA Portal

Use the integrated framework for PLC, HMI and drives to create and commission your machine project

Convert SIMATIC AX libraries into global TIA Portal libraries and reuse standard library blocks within TIA Portal projects

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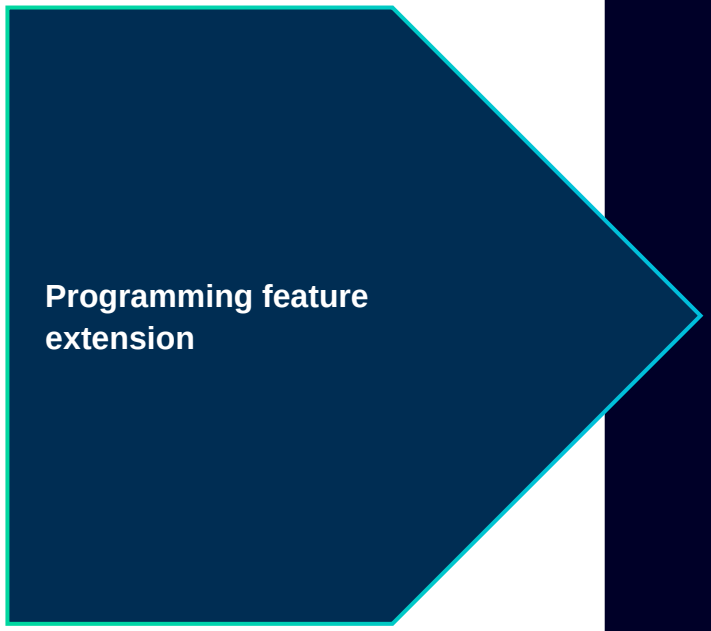
SIMATIC AX

TIAX Offering



TIA Portal V18 Update 2 provides the following improvements when importing library blocks from SIMATIC AX into the TIA Portal:

- Import variables and block comments that are defined in SIMATIC AX
- Import initial values of variables, structures and arrays that are defined in SIMATIC AX
- OOP artifacts, motion library and system library are saved in a separate folder within the TIA project
- Support for class arrays defined in the static interface of FBs//Classes
- Reduce length limitations for namespace and name

New with TIA V19

- Support of S7-1500 Software Controller and S7-1500 Virtual Controller

New in SIMATIC AX

- HMI / OPC UA / WEB API access for variables can be configured within SIMATIC AX

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SIMATIC AX

TIAX Offering

Libraries extension & clean-up

- Library cleanup of unused blocks (>= TIA Portal V18 Update 2)
- Additional library offer for OOP Motion Control like APC FBAxisCtrl (Class/Interface SpeedAxis, PosAxis, SyncAxis & SyncAxisAdvanced for T-CPU) with Named Values
- Avoid duplication of base library blocks (Planned for Q1 2024)

Debugging Enhancement

- Failsafe PLC debugging
- Debugging of static block variables (>= TIA Portal V18 Update 2)
- Configure call path for debugging blocks

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SIMATIC AX

TIAX Direct Loading Use Case

SIMATIC AX

- Program code (e.g. use MC library)
- Test code / functionality
- Download user program
- Monitor, trace and debug of user program

STEP 7 TIA Portal

- Monitor & Debug HW config and TOs
- Download HW config & TOs
- Create & Configure TOs
- Create & configure HW config

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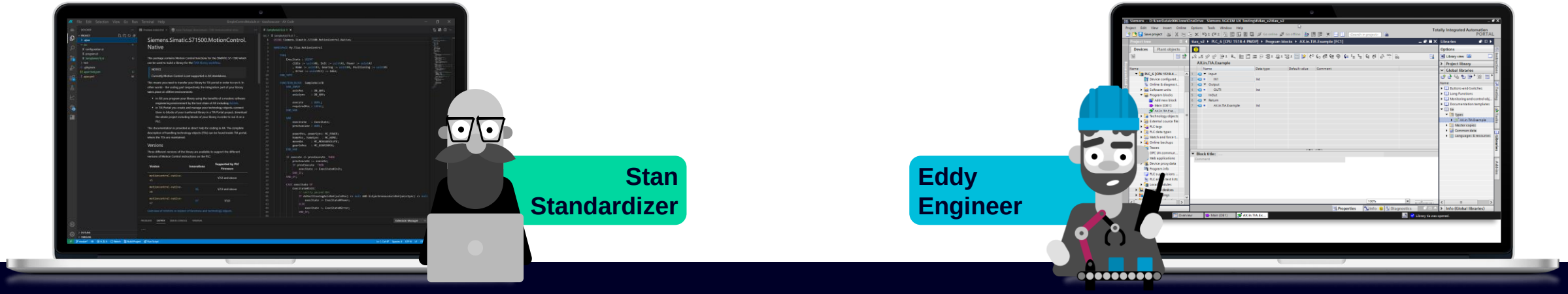
SIMATIC AX

TIAX Direct Loading Use Case



SIMATIC AX

Use the benefits of OOP, unit testing framework and Git connectivity for code standardization,
Using Enums/Named Values in SIMATIC AX

Create, test and maintain S7-1500 motion applications with SIMATIC AX

Benefit from the advantages of both engineering systems

STEP 7 TIA Portal

Use the integrated framework for Technology Objects to configure and manage your motion axis’

Download HWCN and motion Technology Objects in advanced
before downloading the SIMATIC AX application

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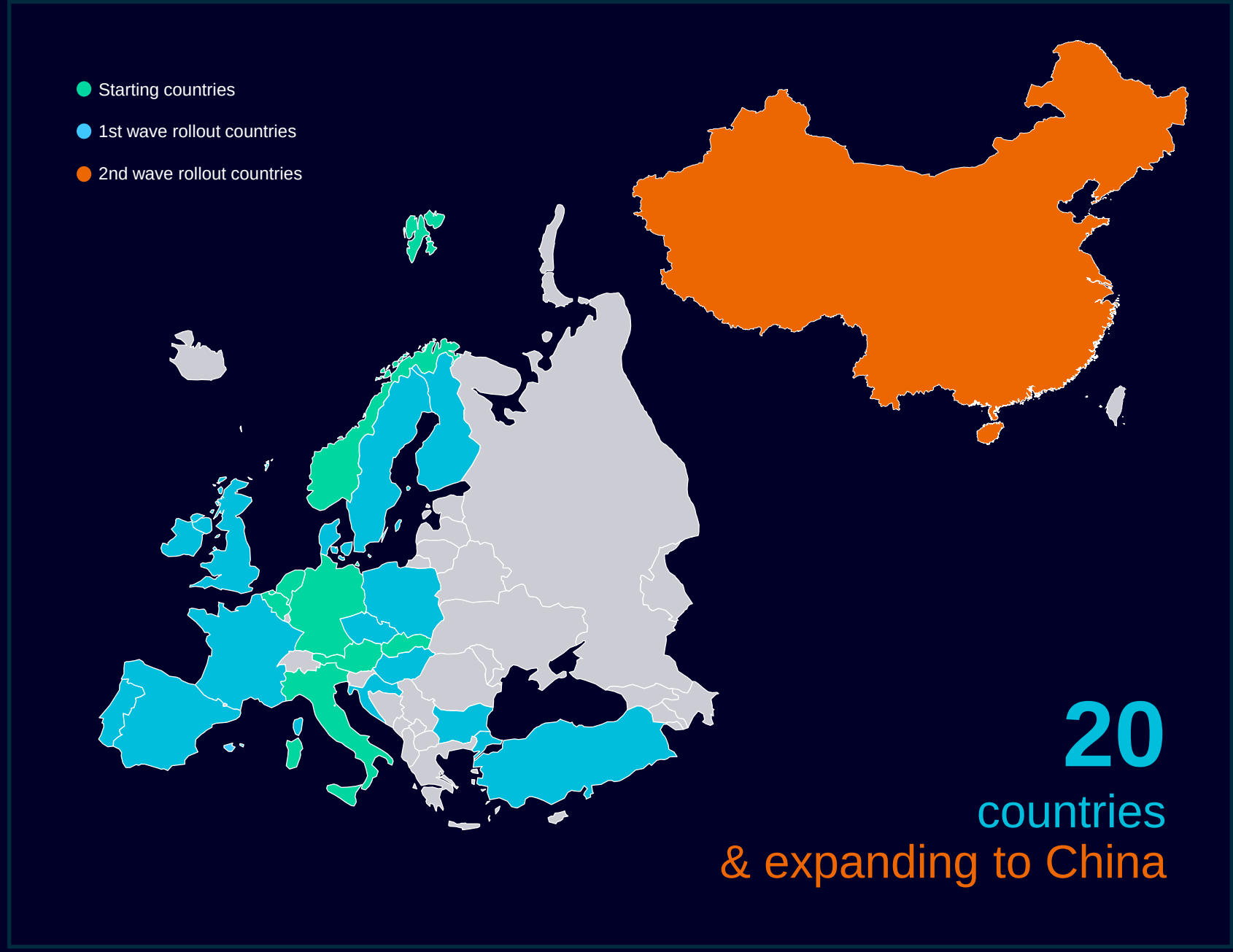
SIMATIC AX

Rollout & Availability

Available in[1]

- France
- Belgium
- United Kingdom
- Ireland
- Netherlands
- Portugal
- Spain
- Sweden
- Denmark
- Norway
- Finland
- Germany
- Italy
- Austria
- Bulgaria
- Croatia
- Hungary
- Poland
- Czech Republic
- Turkey
- (Switzerland)[2]
- China

Limited Sales Release together with TIA Portal V19



[1] 1 No free market access of SIMATIC AX. Please contact your local DI FA Sales Representative regarding technical limitations and purchase
[2] Planned for 2024

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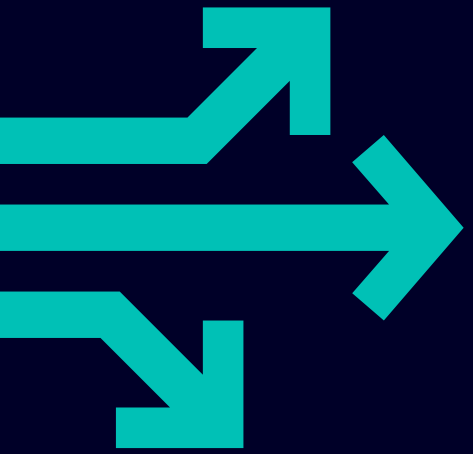
TIA Portal V19
TIA Portal Options

Content



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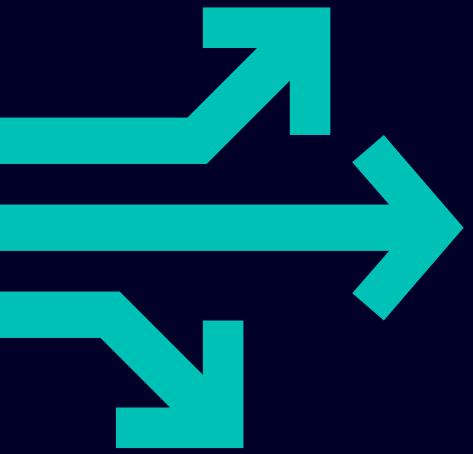
TIA Portal V19
SIMATIC STEP 7 Safety

Content



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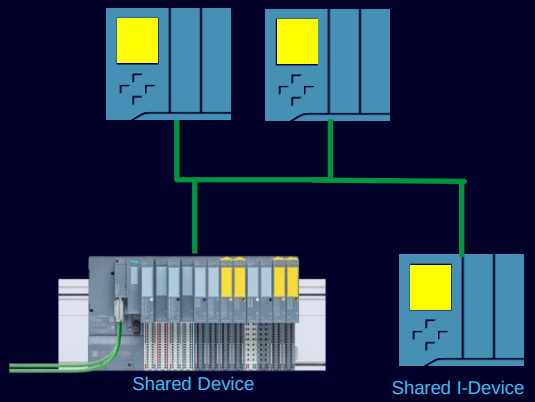
SIMATIC STEP 7 Safety

Integrated shared (I-)Device

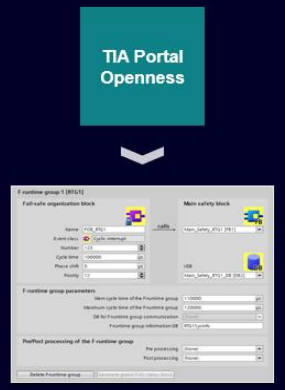


- Assignment of shared Devices to multiple PLCs
- Engineering, diagnostics and consistency of the I-Device in one project
- Configured I-Device and PN interfaces centrally located in TIA Portal

Unique F-PLC Identification

- Replacement of unique identification via F-PLC password
- Unique identification of an F-PLC via serial number to ensure download of the safety program to the correct target F-PLC
- For all S7-1500 and S7-1200 FW in combination with TIA Portal V19

Openness Improvements



- Extension of parameter access of existing F-Devices
- F-Download via Openness to SD Card

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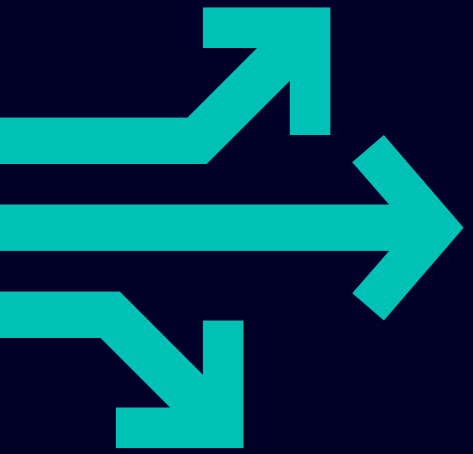
TIA Portal V19
SIMATIC Safe Kinematics

Content



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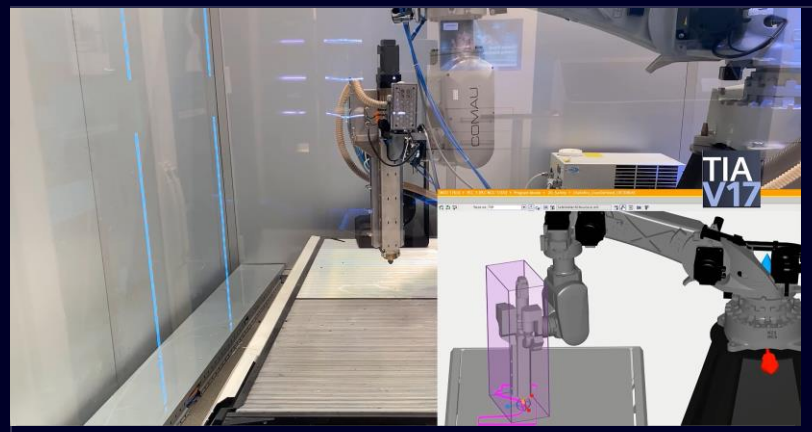
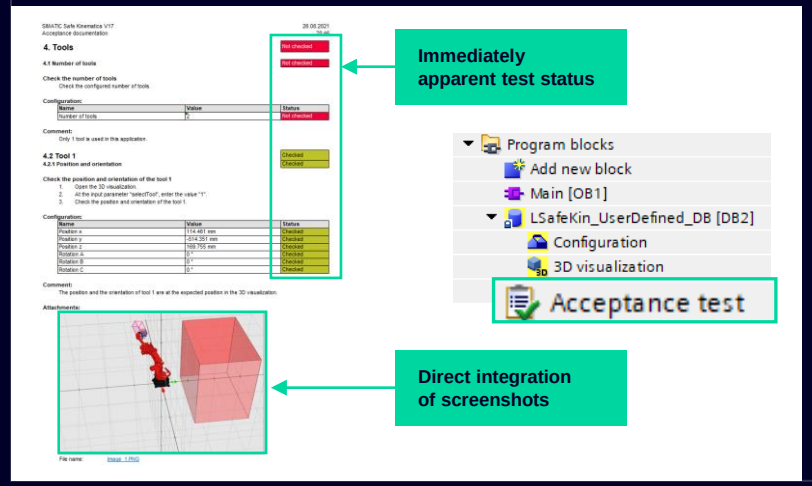
TIA Portal V19
SIMATIC Safe Kinematics





3D visualization

- Simple commissioning through graphical representation of the parameterized Safe Kinematics functions
- Import of CAD data of kinematics, of tools and the environment objects
- Online & Offline simulation of the kinematic movements and the monitoring functions through included digital twin of the fail-safe kinematic module – without additional software
- Simple after-sales diagnostics by importing trace recordings. This allows the real motion of the kinematics to be integrated into the simulated Safe Kinematics environment of the service staff for diagnosis – without additional software

Acceptance test

- Time savings for CE certification of the machine through predefined test cases to check and accept the Safe Kinematics functions
- Intelligent test cases: If a Safe Kinematics parameter is changed during acceptance, only directly dependent tests are reset - no complete acceptance test needs to be performed
- Automatic generation of a test report incl. screenshots of the 3D visualization – at the push of one button

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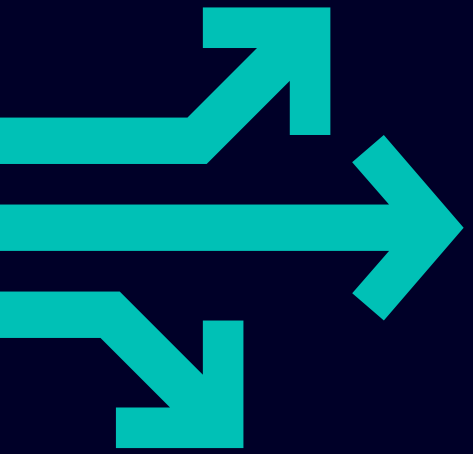
TIA Portal V19
TIA Portal Multiuser

Content



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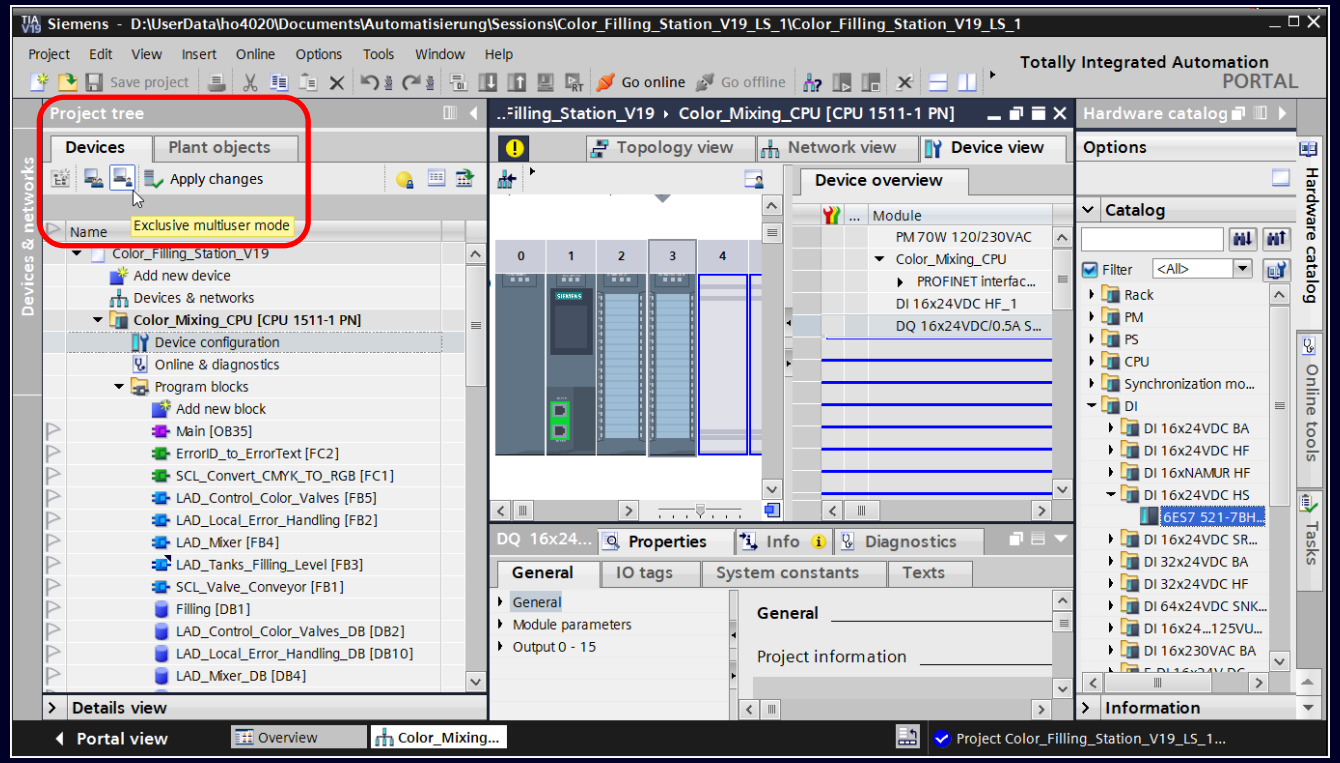
TIA Portal Multiuser
New object types and Exclusive Multiuser Mode



New object types in a local session

- TIA Portal Test Suite rules
- WinCC Unified screens, messages and variables

New “Exclusive Multiuser Mode”

- The new Exclusive Multiuser mode allows quick changes to objects that cannot be edited in a local session, e.g. changes to the device configuration.
- When switching to the exclusive multiuser mode, all changes are retained in the local session.
- The precondition for switching quickly to exclusive multiuser mode is that the local session is based on the current project revision.

Advantages

- Switching to exclusive multiuser mode is done directly from the current local multiuser session.
- Using Server Project View is often no longer necessary.
- The transfer of changes to the TIA Project-Server from the exclusive multiuser mode is significantly improved.

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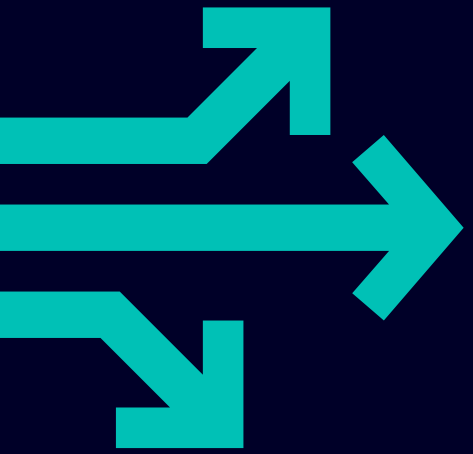
TIA Portal V19
SIMATIC Robot Library

Content



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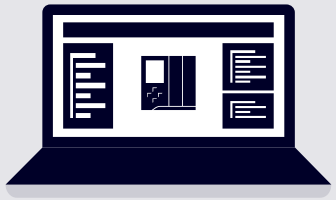
SIMATIC Robot Library
One language for all robot manufacturers



TIA Portal & SIMATIC S7

PLCopen motion control

SIMATIC Robot Library

PI PROFIBUS • PROFINET

Standard Robot Command Interface

Manufacturer A

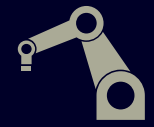
Manufacturer B

Manufacturer C

Manufacturer D

Manufacturer E

Manufacturer F



Manufacturer G

Manufacturer H

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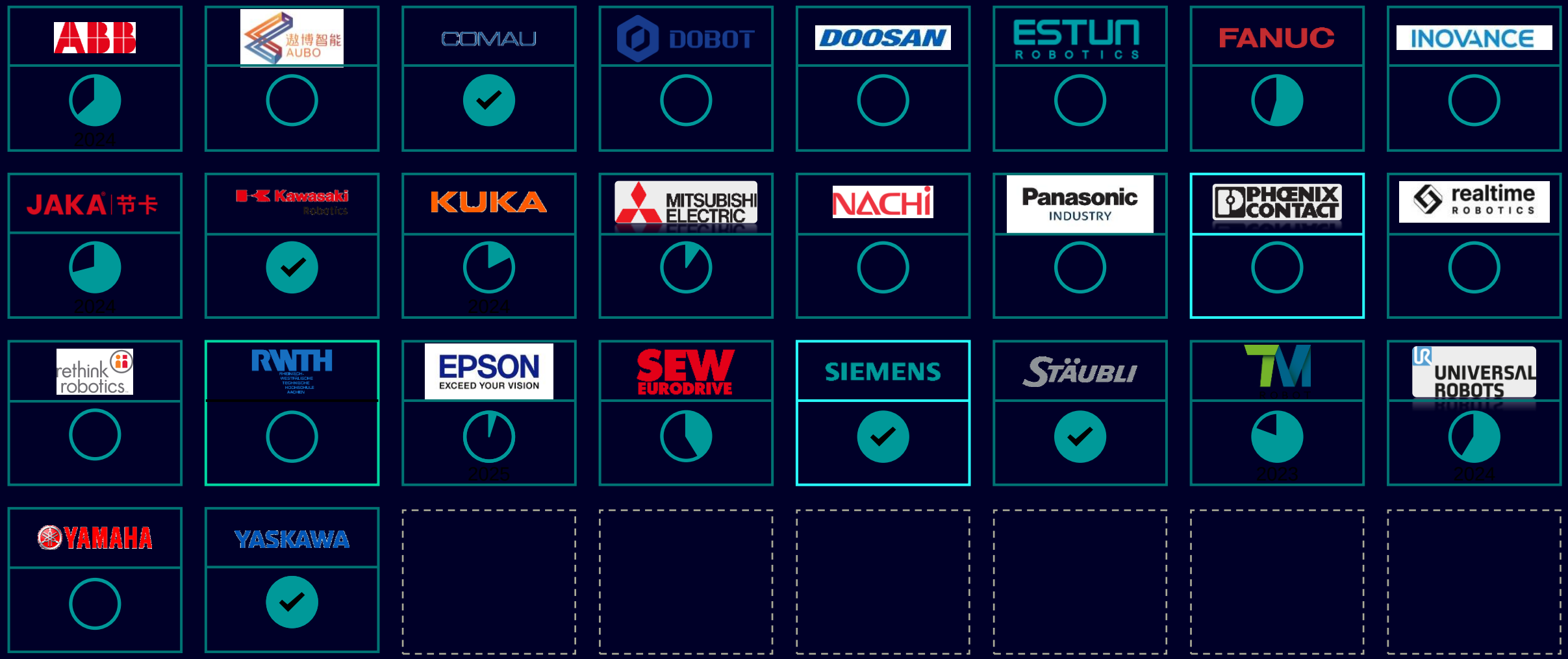
Working group participants
Standard Robot Command Interface



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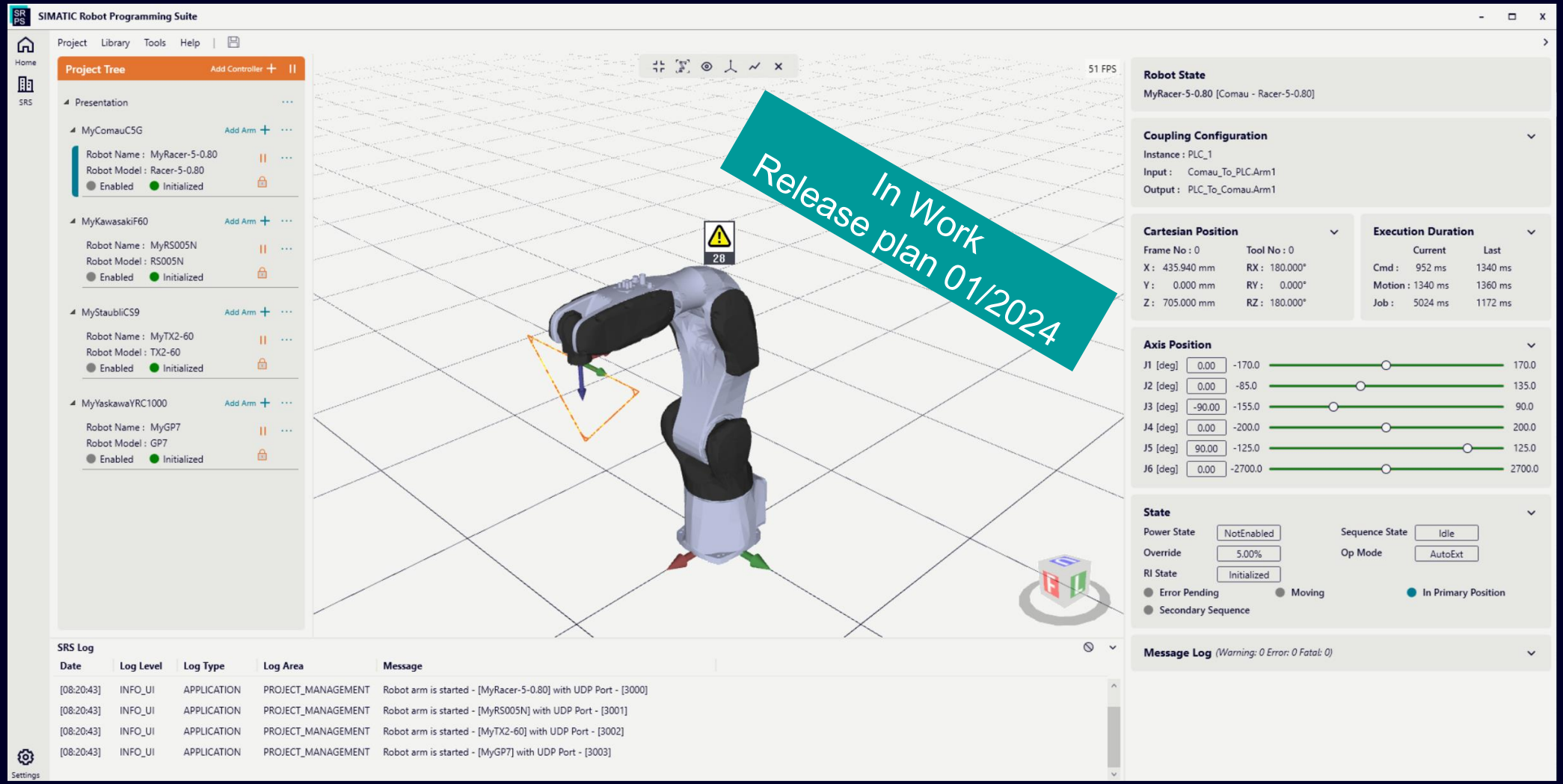
Simulation of Robots

Universal virtual robot control of robots programmed by SRL



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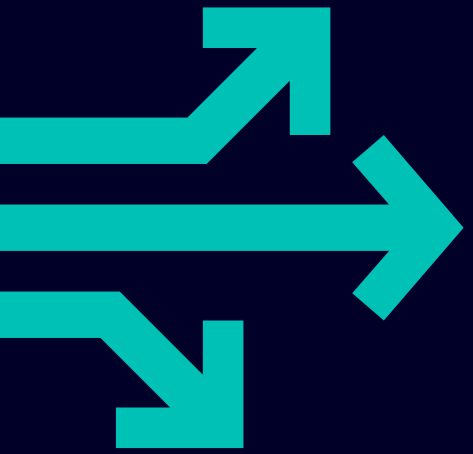
TIA Portal V19
OPC UA

Content



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OPC UA @ SIMATIC S7-1500 R/H

Support of OPC UA Server within S7-1500 R/H

Redundancy concept according OPC UA specification

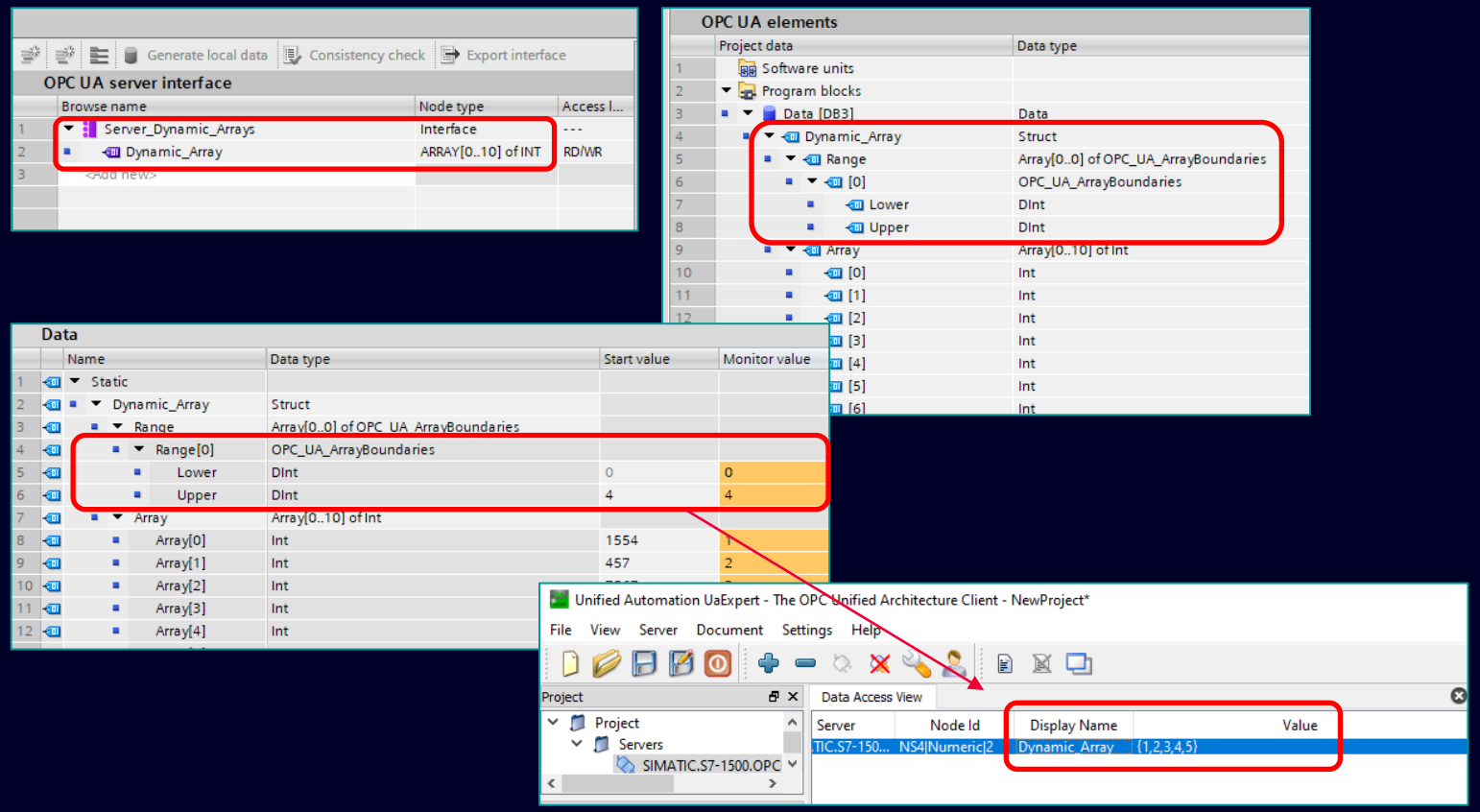
- Failover Mode: “Hot + Mirrored” for fast switchover times
- Access via System-IP address
  → Transparent Mode
  for OPC UA clients without redundancy support
- Access via Device-IP address
  → OPC UA client can manage failover scenario

>>> **click here** for more details to OPC UA @ RH PLC

SIEMENS

Support of dynamic arrays at S7-1500

- Per OPC UA specification dynamic arrays are arrays that can change in size during program execution



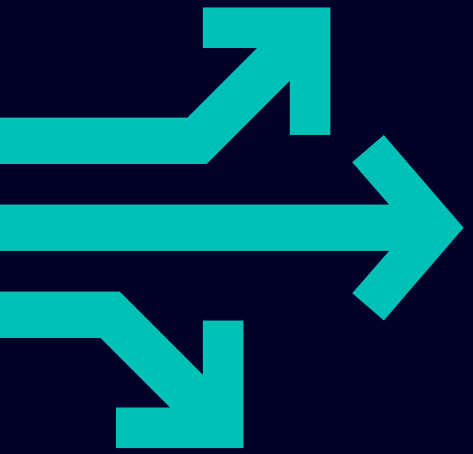
Benefit

- Less overhead when transferring array data via OPC UA
- Compatibility of S7-1500 PLCs with OPC UA companion specifications
- Flexibility. Customers can use a standardized solution across all factories, machines, production lines, and processes, …

SIEMENS

TIA Portal V19
SIMATIC S7-PLCSIM / PLCSIM Advanced

Content



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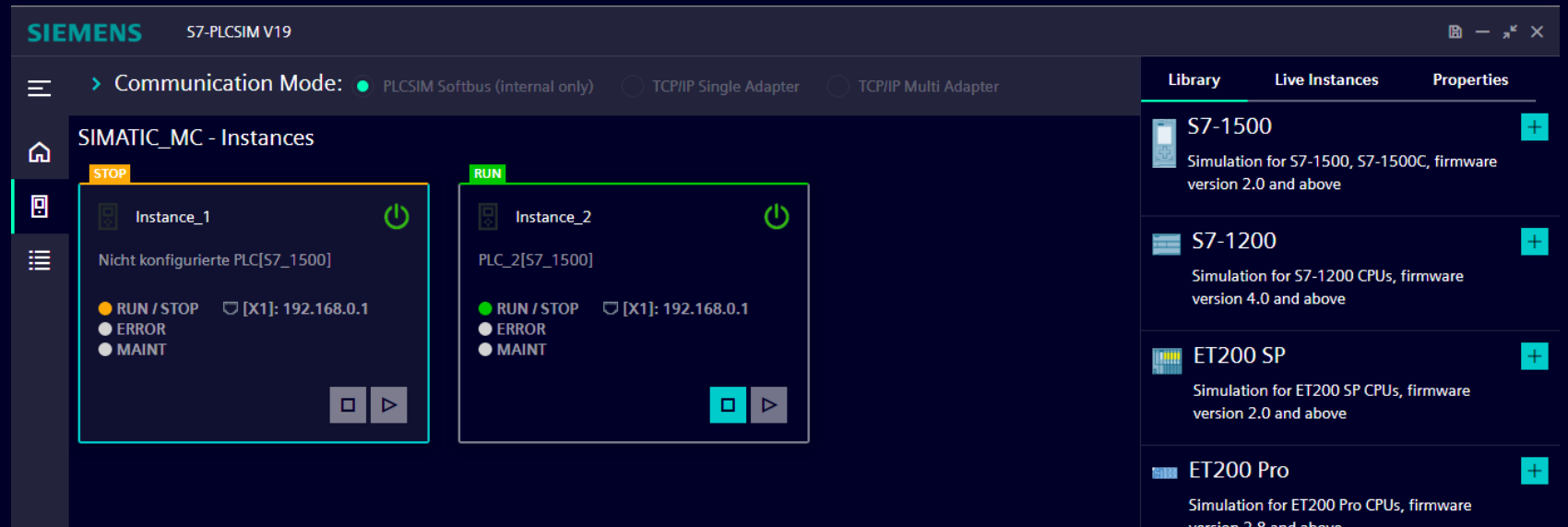
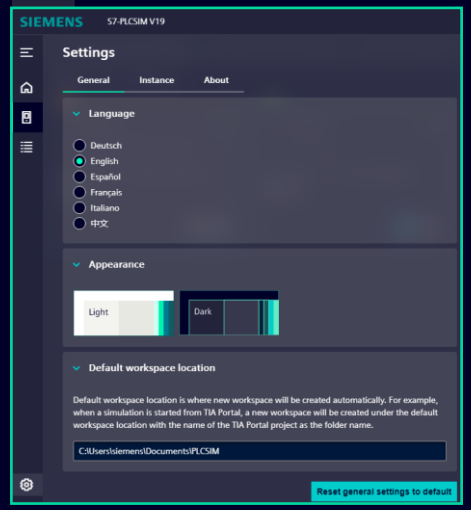
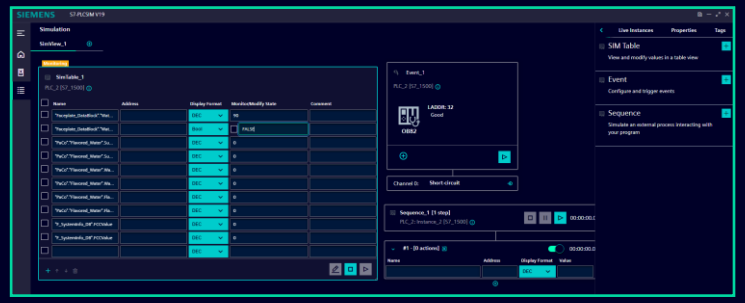
S7-PLCSIM V19
Enhanced new User Interface support Standard and Advanced Customers

- New design of the user interface for the S7-PLCSIM standard, which also allows the use of S7-PLCSIM Advanced* functions.
- Improved workspace concept
- Supports Sequences
- Settings enhanced
  - Languages
  - Appearance
  - Default Workspace location
  - Reset to default
- PLCSIM Advanced Multiple Adapter mode now supported
- Support for the latest firmware versions in S7-1200 V4.6 and S7-1500 V3.1
- Support of PLCSIM advanced with Software Controller V30.0
- All new PLC order numbers for TIA V19/ FW V3.1 are supported, including RAIL and SIPLUS variants







* S7-PLCSIM Advanced license required

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S7-PLCSIM Advanced V6.0
Supports now the Software Controller PLC Family

SIMATIC S7-1500
S7-PLCSIM Advanced & Software Controller

- Simulation of all types Software- /Open Controllers (SWC)
- from version SWC V30.0 with TIA V18 on possible
- once available also the SWC V30.1 in TIA V19
- supports the synchronous ODK functionality as is since S7-PLCSIM Advanced V3.0 for ODK ready PLCs.

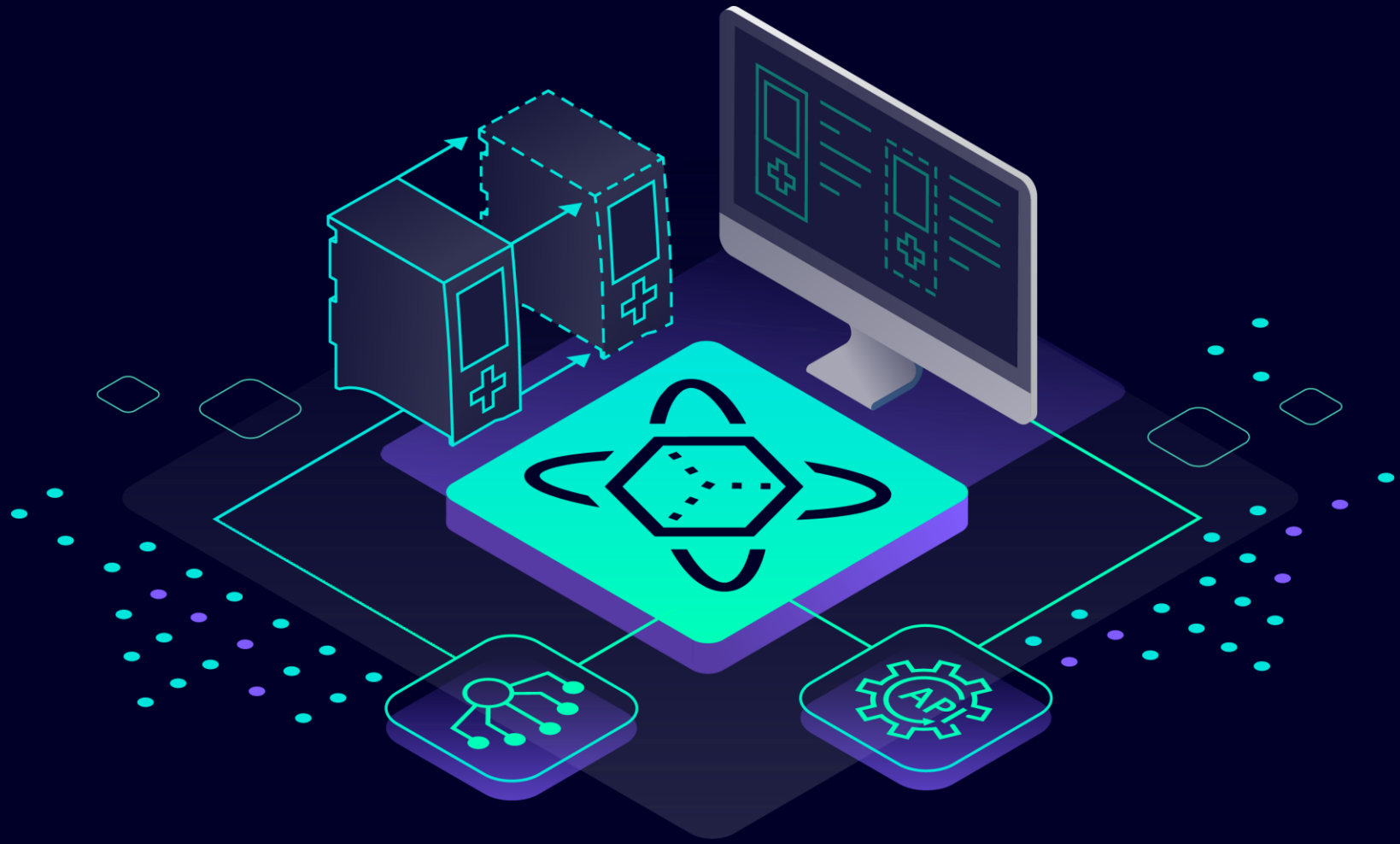
Customer Value

- No PLC change in the TIA project more needed, download project as is and simulate/ co-simulate
- Closing the last gap in supported PLC Family's of S7-1500
- Simulation Software Controller to foster the digitalization strategy
- Will be also supported by S7-PLCSIM Standard with limited functionality

SIEMENS

S7-PLCSIM Advanced V6.0
New Features and Compatibility

- All new S7-1500 PLC order numbers for TIA V19/ FW V3.1 are now supported, including RAIL and SIPLUS variants.
- TIA Portal projects from versions V14 to V19
- S7-1500 firmware support for V1.8 – V3.1
- Improved applicability of the network configuration trough the API
- Product manual split in application and API manual.



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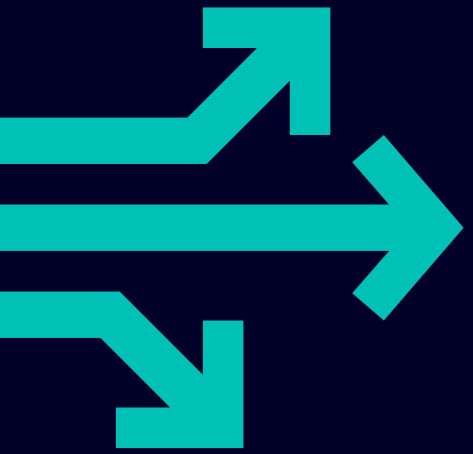
TIA Portal V19
SIMATIC Target for Simulink

Content



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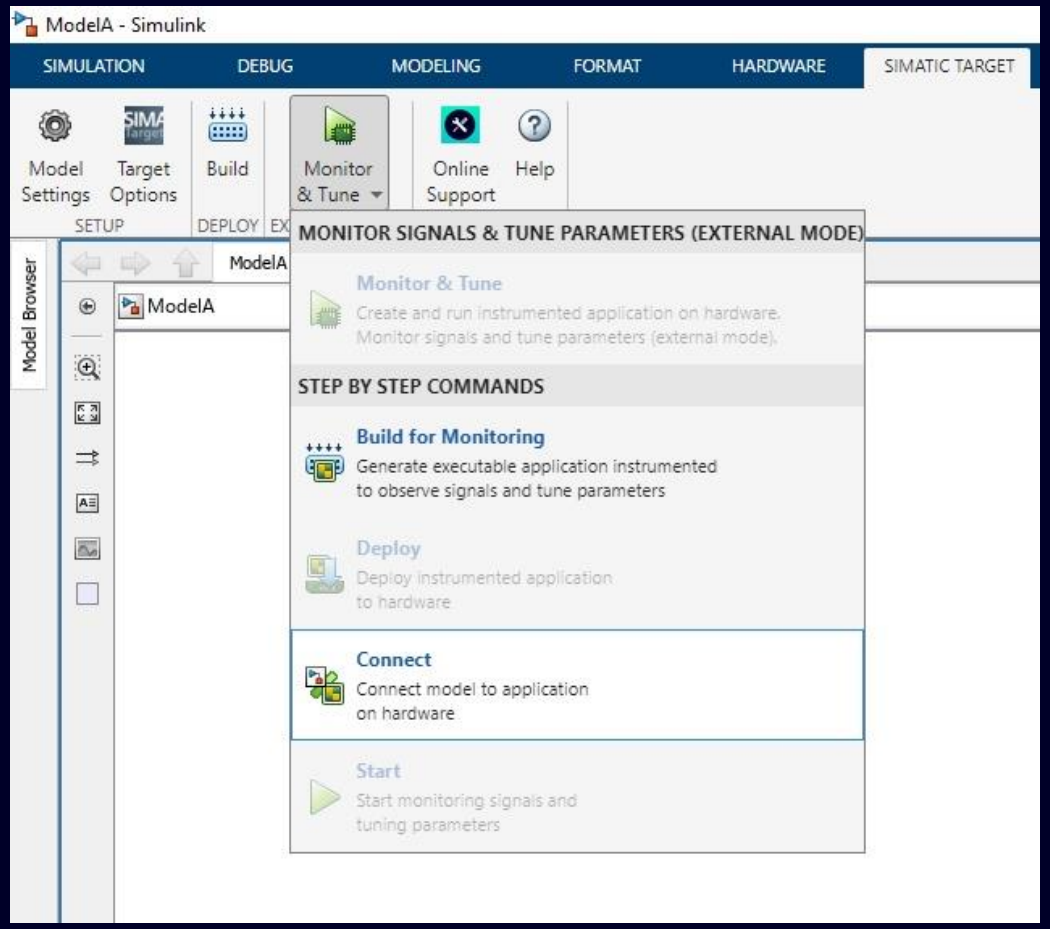
SIEMENS

SIMATIC Target™ for Simulink® V6.0 SP1
SIMTIC Target Toolstrip for Simulink

Enabled by SIMULINK® MathWorks



Easy access to important functions

- Available after SIMATIC Target installation
- Direct access to:
  - Model settings
  - SIMATIC Target options
  - Build model
  - External Mode
  - Online support (FAQs, downloads, …) for Target
  - Local help

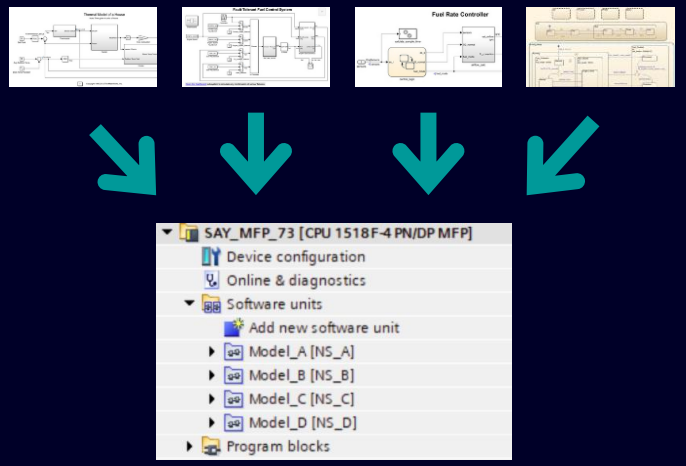
SIEMENS

SIMATIC Target™ for Simulink® V6.0 SP1
General Improvements

Enabled by SIMULINK® MathWorks

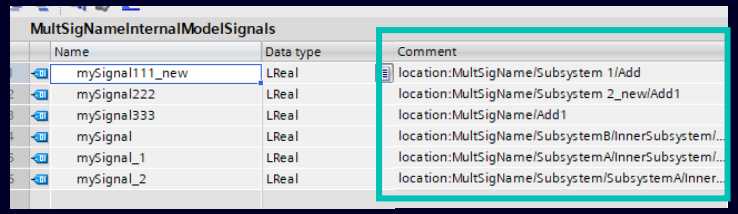
Namespace support for Software Units

- Multi Model support – Improved handling when running several Simulink models in parallel on the same PLC (for example for External Mode)
- Clear separation of generated model by usage of different namespaces



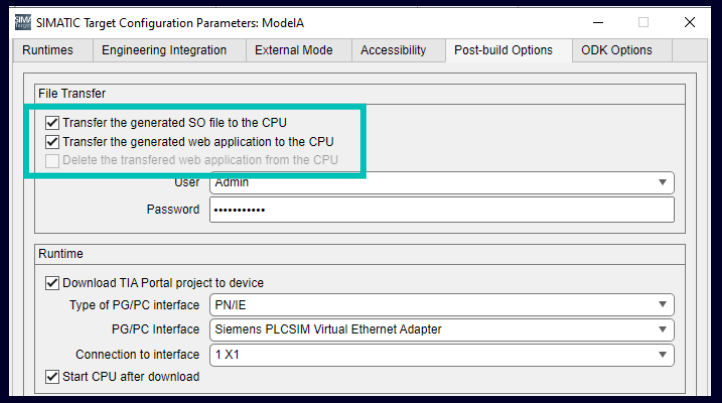
Showing internal signals location in the comments section.

- Location information of the internal signal is shown in the comments of the UDT
- Helpful when internal signals with the same name are used in a Simulink model



Automatic deletion of Web visualization

- On deactivation of the web visualization the web application is also removed on the PLC
- Only active web applications are stored on the PLC memory



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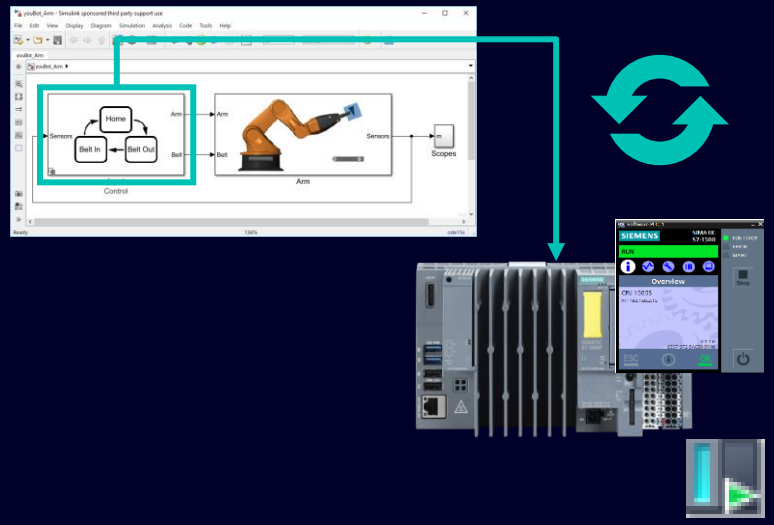
SIMATIC Target™ for Simulink® V6.0 SP1
General Improvements

Enabled by SIMULINK® MathWorks

Automated Load / Unload handling

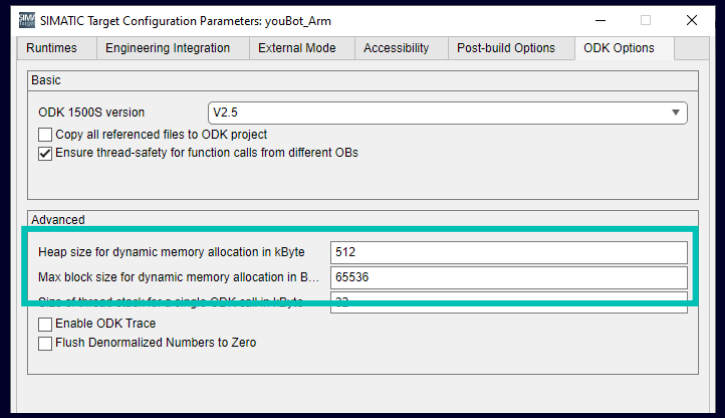
Improved stability

- “Download in RUN” behavior for Simulink models
- Handling of the Load and Unload ODK blocks is integrated in the generated PLC program blocks
- No RUN/STOP transition required to run updated model
- PLC program and other Simulink models are executed without any interruption



Improved External Mode communication

- Improved ODK memory allocation settings
- More detailed information message in diagnostic view



Support of latest versions for MATLAB, Simulink & ODK 1500S

Supported software:

- MATLAB R2023b
- ODK V2.5 SP4
- Windows 11

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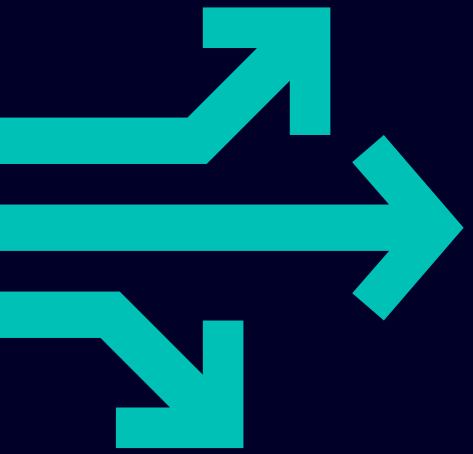
TIA Portal V19
TIA Portal Test Suite

Content



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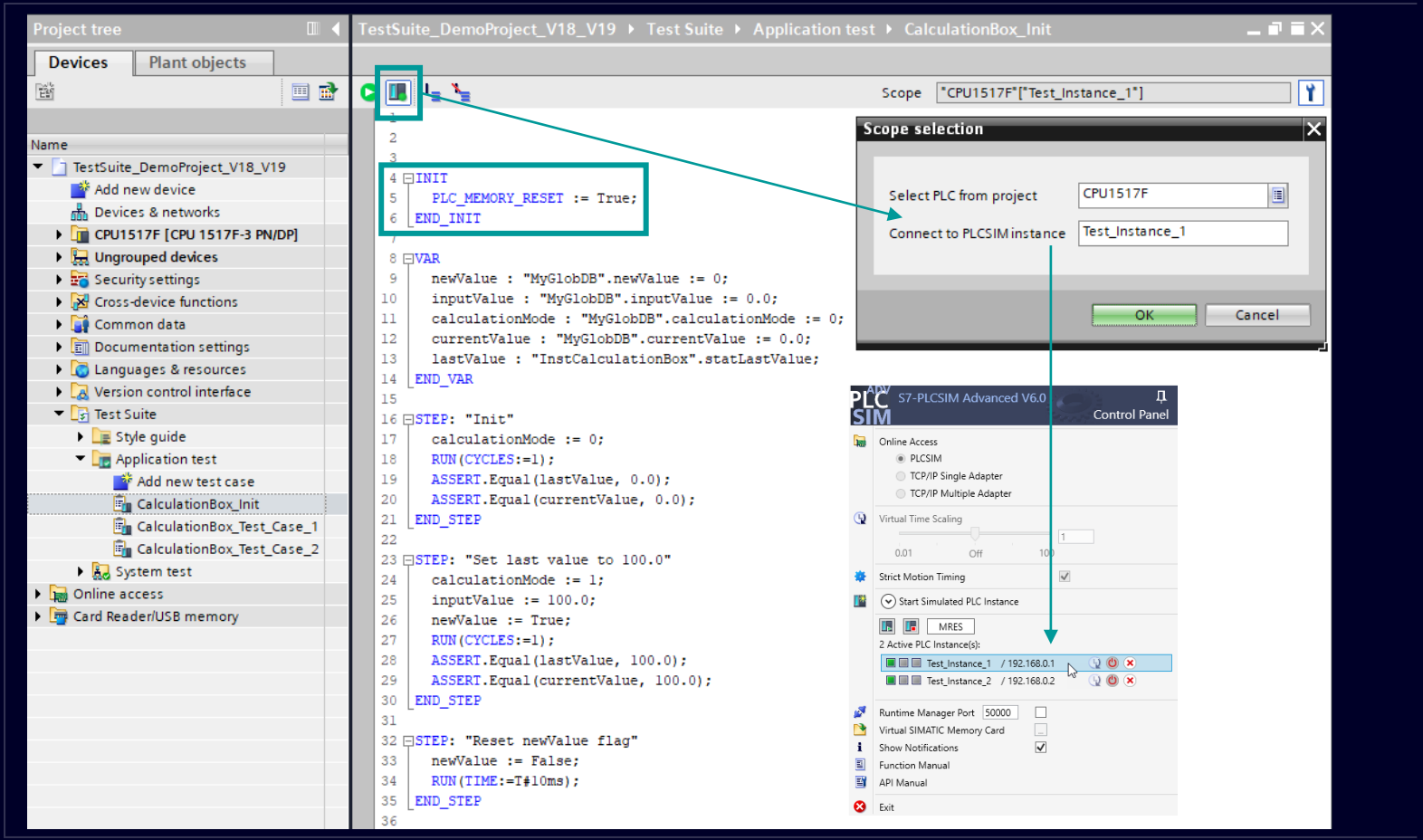
TIA Portal Test Suite V19
Application test with S7-PLCSIM Advanced



New mode “Run with pre-configured S7-PLCSIM Adv. Instance”

By enabling this new mode, the application test skips the steps of compiling and downloading into a newly created S7-PLCSIM Adv. instance for each test case. Instead, it simply connects to a pre-configured S7-PLCSIM Adv. instance and starts validating the S7-application.

New section “INIT”

For each test case, an additional INIT section can be defined to perform a memory reset before starting to execute the tests.

Benefits

- Testing the application is much faster because the S7-PLCSIM Adv. instance with the S7-application only needs to be prepared once for all test cases.
- Optional memory reset gives the user the flexibility to create both dependent and independent test cases.
- Perform parallel tests on different S7-PLCSIM Adv. instances.

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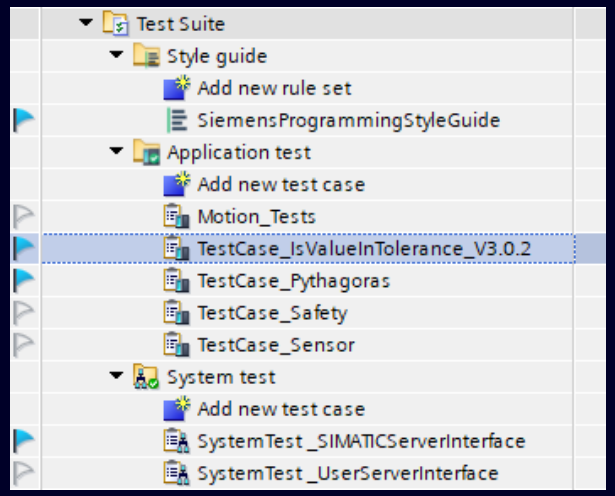
TIA Portal Test Suite V19
General Improvements

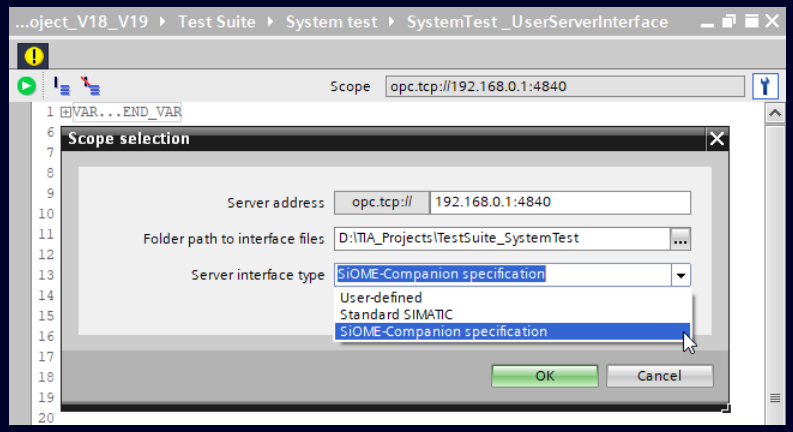
Support of Multiuser

Style guide, application and system test cases can be checked into a project server using multi-user mechanisms.



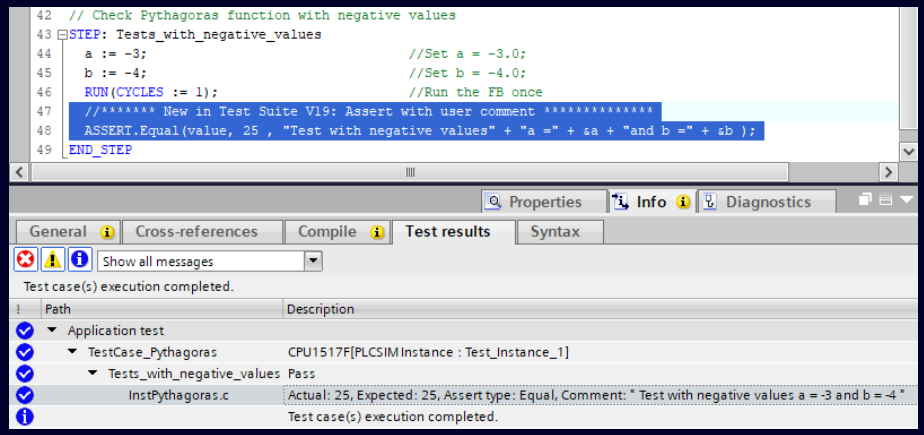
System test

- Support of OPC UA server files created with SiOME
- Improved execution performance
- Support of master copies
- Extended Openness feature set
  - Set/Get the scope of a test case
  - APIs to work with libraries (master copy)



Application test

- Assert statements with optional user comments
- In combination with S7-PLCSIM Adv. V6 also S7-1500 Software & Open Controller can be tested
- Tests with failsafe PLCs can now be automated by using the Openness function “Download PLC including Safety to SIMATIC memory card folder”



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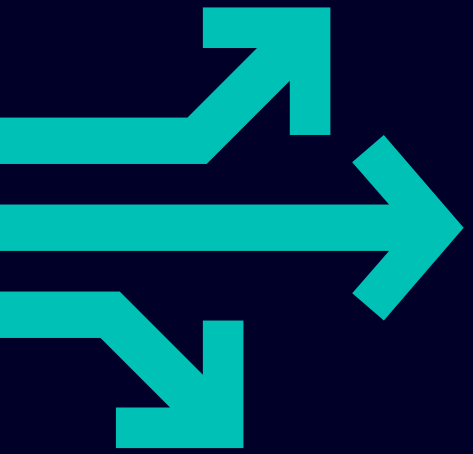
TIA Portal V19
SIMATIC Visualization Architect (SiVArc)

Content



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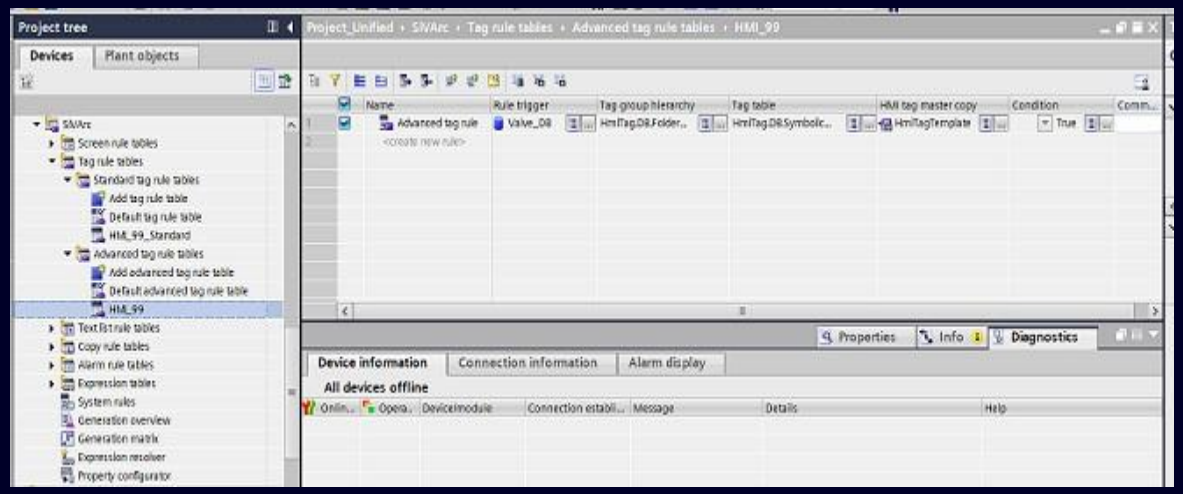
SIMATIC Visualization Architect V19
Advanced Tag rule editor (1)

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓
WinCC Professional ✓	WinCC RT Advanced ✓	WinCC classic Panels ✓



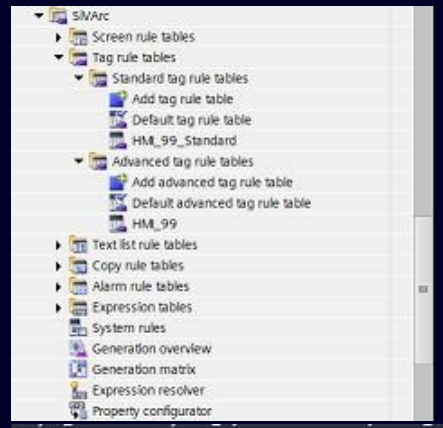
Advanced Tag rule editor

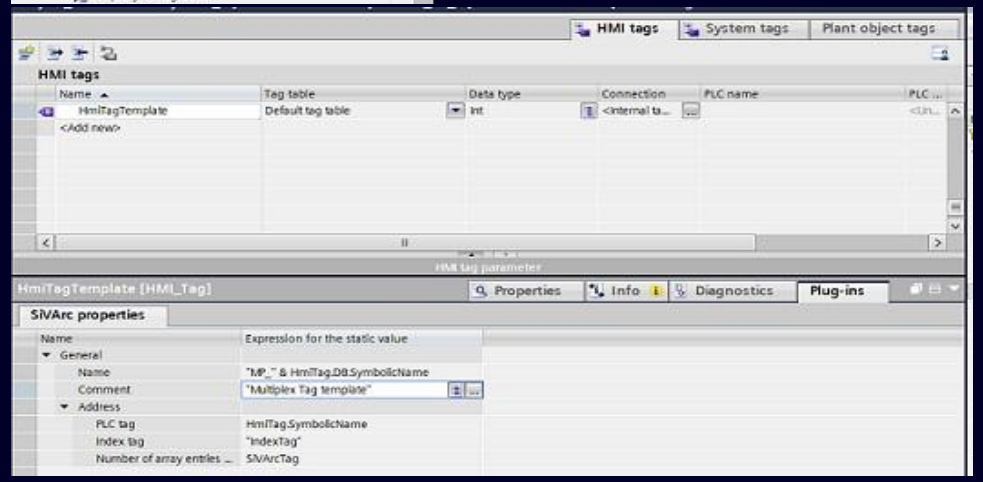
- Create Advanced Tag rules with rule conditions to generate only needed HMI tags
- Use the HMI tag templates to flexibly generate HMI tags.
- Generate pair of Multiplexing tags and index tags via Advanced Tag rules.
- For more flexibility, new SiVArc expressions have been introduced for the “Extended Variable Rule Tables”.

SIEMENS

SIMATIC Visualization Architect V19
Advanced Tag rule editor (2)

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓
WinCC Professional ✓	WinCC RT Advanced ✓	WinCC classic Panels ✓





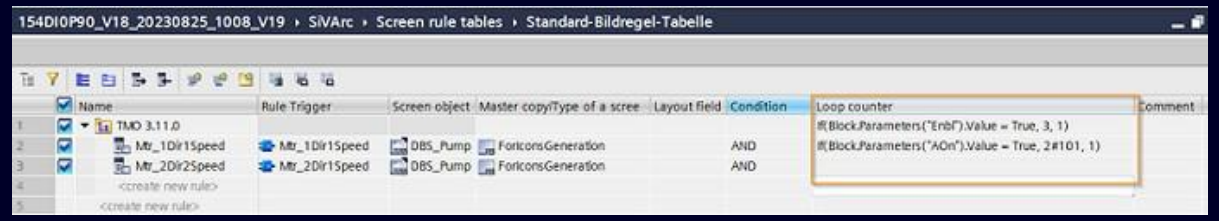
Advanced Tag rule tables & Tag templates

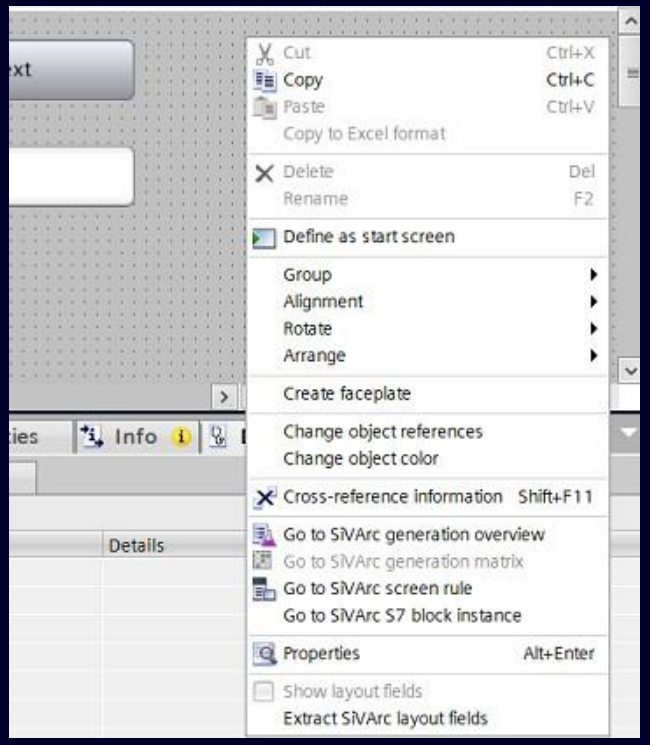
- Create Advance tag rule tables and arrange them in hierarchical folder structure.
- Advanced tag rule tables can also be versioned & stored in Library.
- Define own HMI tag template in HMI tag editor via SiVArc plug-ins
- Store your tag templates in Library to use them in Advanced tag rules.

SIEMENS

SIMATIC Visualization Architect V19

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓
WinCC Professional ✓	WinCC RT Advanced ✓	WinCC classic Panels ✓





SiVArc rules execution in Loop. [SCL blocks].

- Generate multiple instances of the same faceplate with respective data interfaces from array.
- Reduce number of screen rules by repeating a single rule.
- Execute SiVArc rules based on loop calls in a SCL block
- Access loop counter via a SiVArc expression

Automated layout extraction.

- Generate Layout templates from SiVArc generated screens/screen objects.
- Save the generated & modified position of objects on Layouts & re use them.

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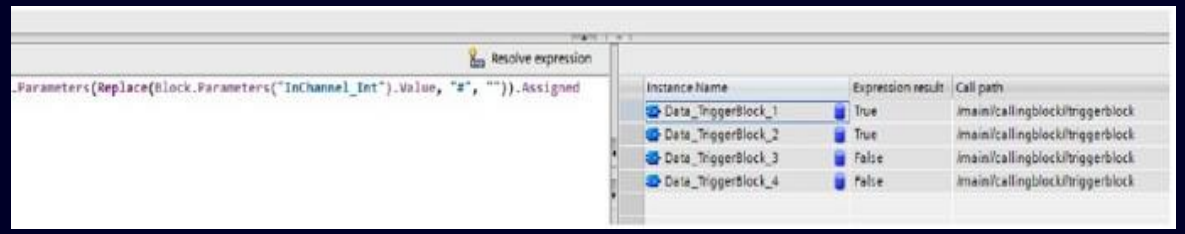
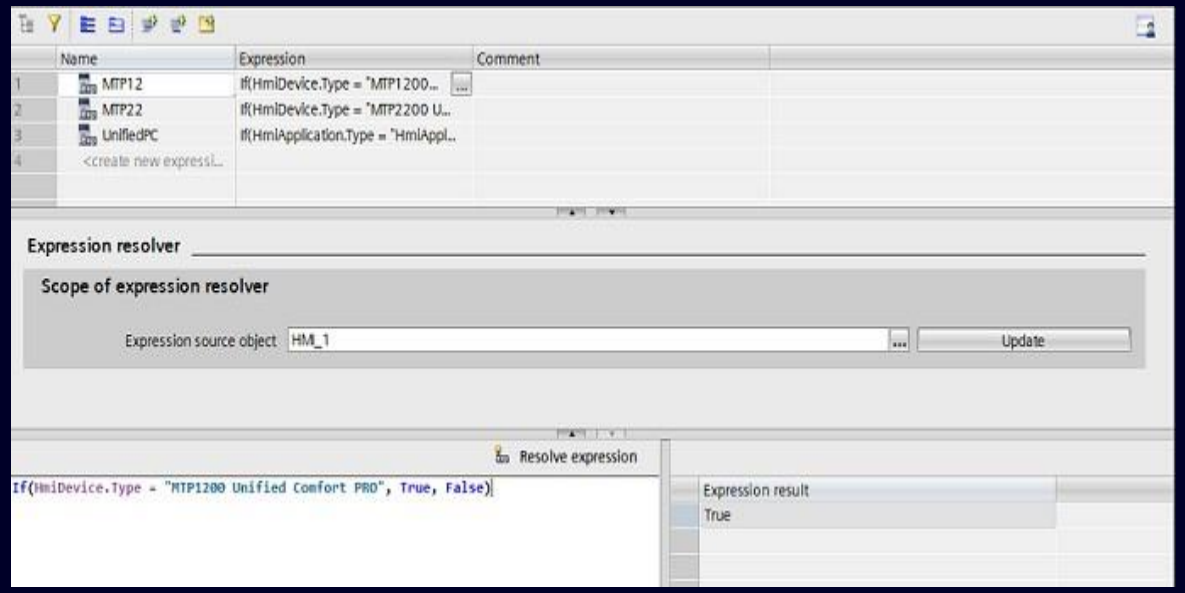
SIMATIC Visualization Architect V19
SiVArc expression enhancements

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓
WinCC Professional ✓	WinCC RT Advanced ✓	WinCC classic Panels ✓





New SiVArc expressions

- Nesting of SiVArc expressions is now possible.
- Split function now also supports strings to split texts.
- Global expressions can be combined with other expressions/functions
- The Expressions Resolver has been added to Expression Tables to make troubleshooting easier.
- New expression: “TagNaming.ReplacementChar”, for reading replacement characters from the HMI settings.
- Expressions have been optimized to evaluate Boolean FC/FB parameters independently of True/False notation

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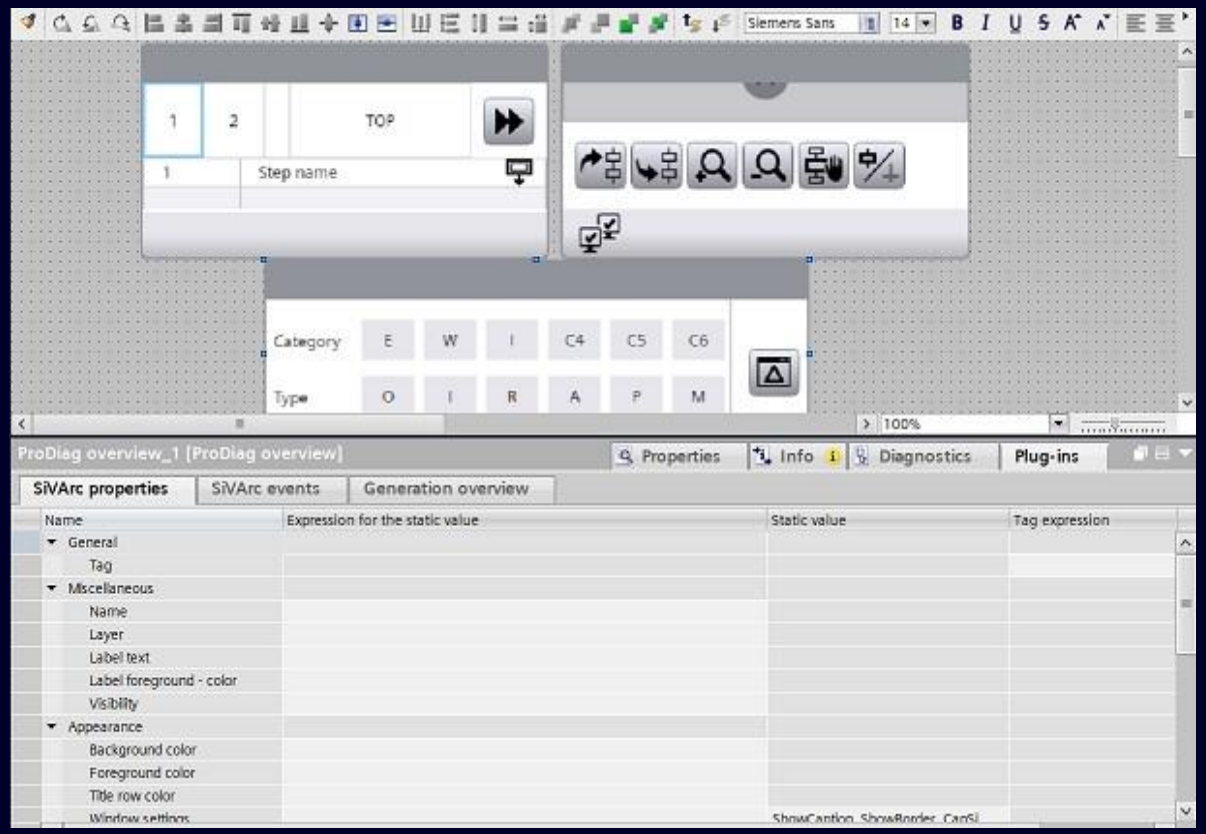
SIMATIC Visualization Architect V19
Improvement of the support for WinCC Unified

Unified Basic Panel ✓	Unified Comfort Panel ✓	WinCC Unified PC ✓



Support for Unified devices.

- Graph overview, PLC code view & Prodiag controls can now be generated via SiVArc rules.
- The rectangle object is now supported via Screen rules
- Unified faceplates support is enhanced.
- Additional system functions are supported via SiVArc events
- The layout has been improved for unified screens
- Dynamic parameters are now supported for HMI alarms.

Support for WinCC ONE EDITION.

- SiVArc is compatible with WinCC ONE EDITION
- SiVArc generation supports all HMI devices on ONE Edition.

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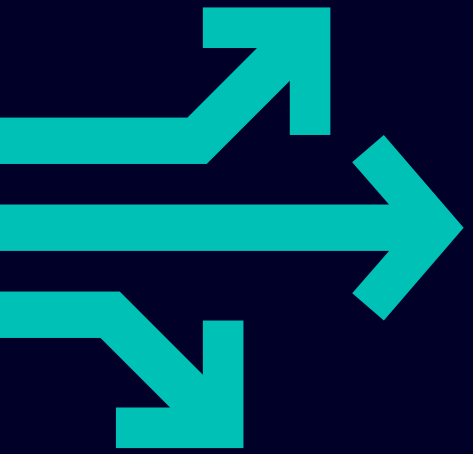
TIA Portal V19
SIMATIC Energy Suite

Content



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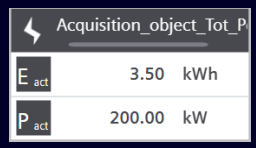
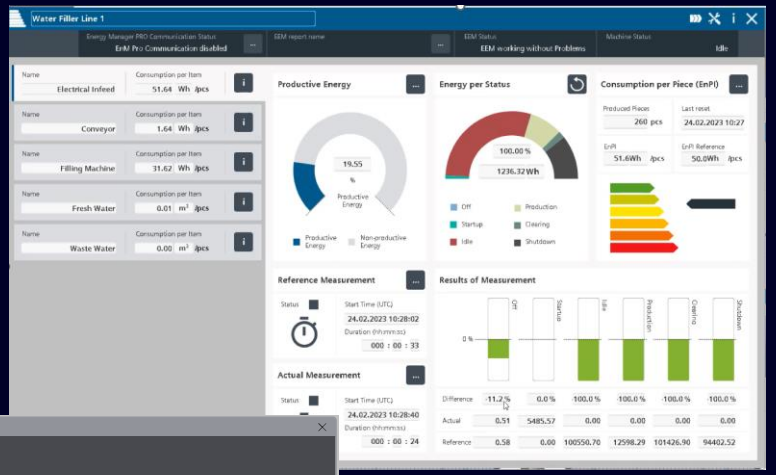
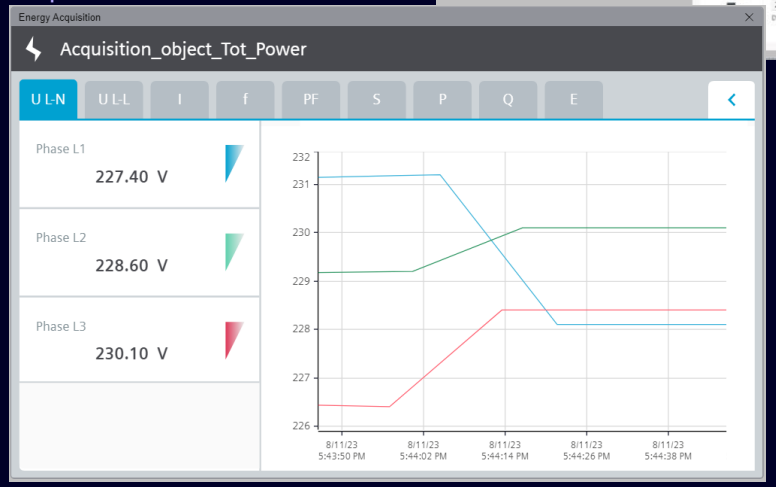
TIA Portal V19
SIMATIC Energy Suite



Acquisition



EE-Monitor



Energy Efficiency Monitor for Machines

- Full integration of S7 Energy Efficiency Monitor for Machines into the Energy Suite
- Automatic programm generation of the PLC program for S7-1500 controllers
- Generation of the visualization with SiVArc (no additional SiVArc license required)

WinCC Unified

- Improved user experience by revision of WinCC Unified visualization
- Evaluation of energy data and automatic creation of reports with the
  Energy Suite Export Tool for WinCC Unified

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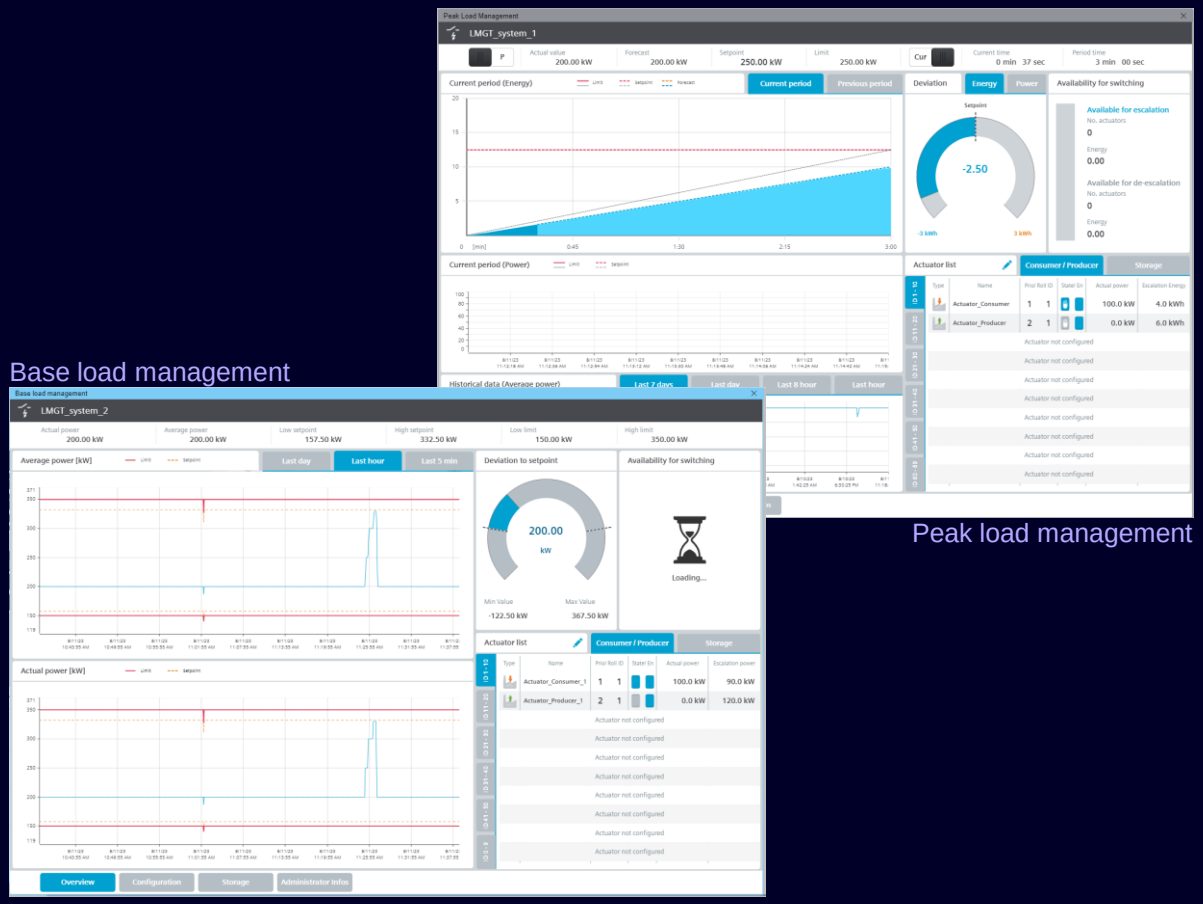
TIA Portal V19
SIMATIC Energy Suite



Integration of Modbus TCP devices

- Extended support of Modbus TCP devices (Siemens and third-party) by automatic driver generation for communication
- Templates for multiple use of Modbus-TCP devices of one type
- Display of extended energy data for Modbus-TCP devices in WinCC Unified

Support of redundancy concepts

- S7-1500 R/H supports the Energy Suite

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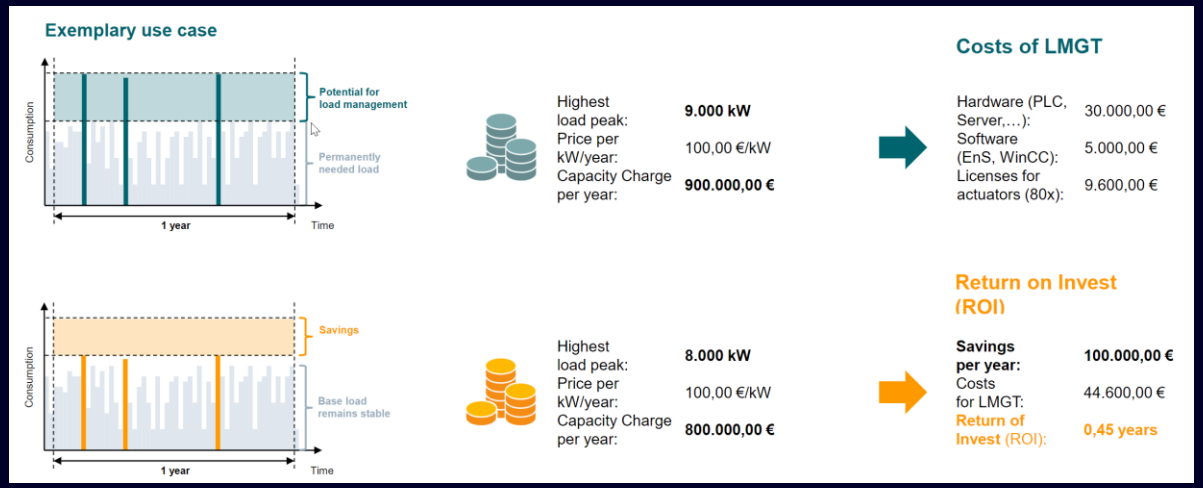
TIA Portal V19
SIMATIC Energy Suite



License concept

- Change the number of Energy Objects for actuators (1 actuator = 9 EnOs)
  Advantage: one EnO 10-pack for 1 actuator and one measuring point.

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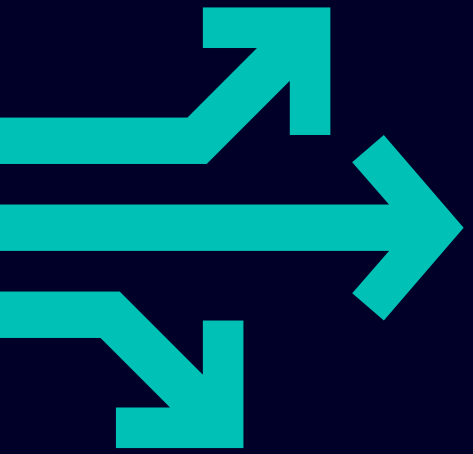
TIA Portal V19
Central User Management (UMC)

Content



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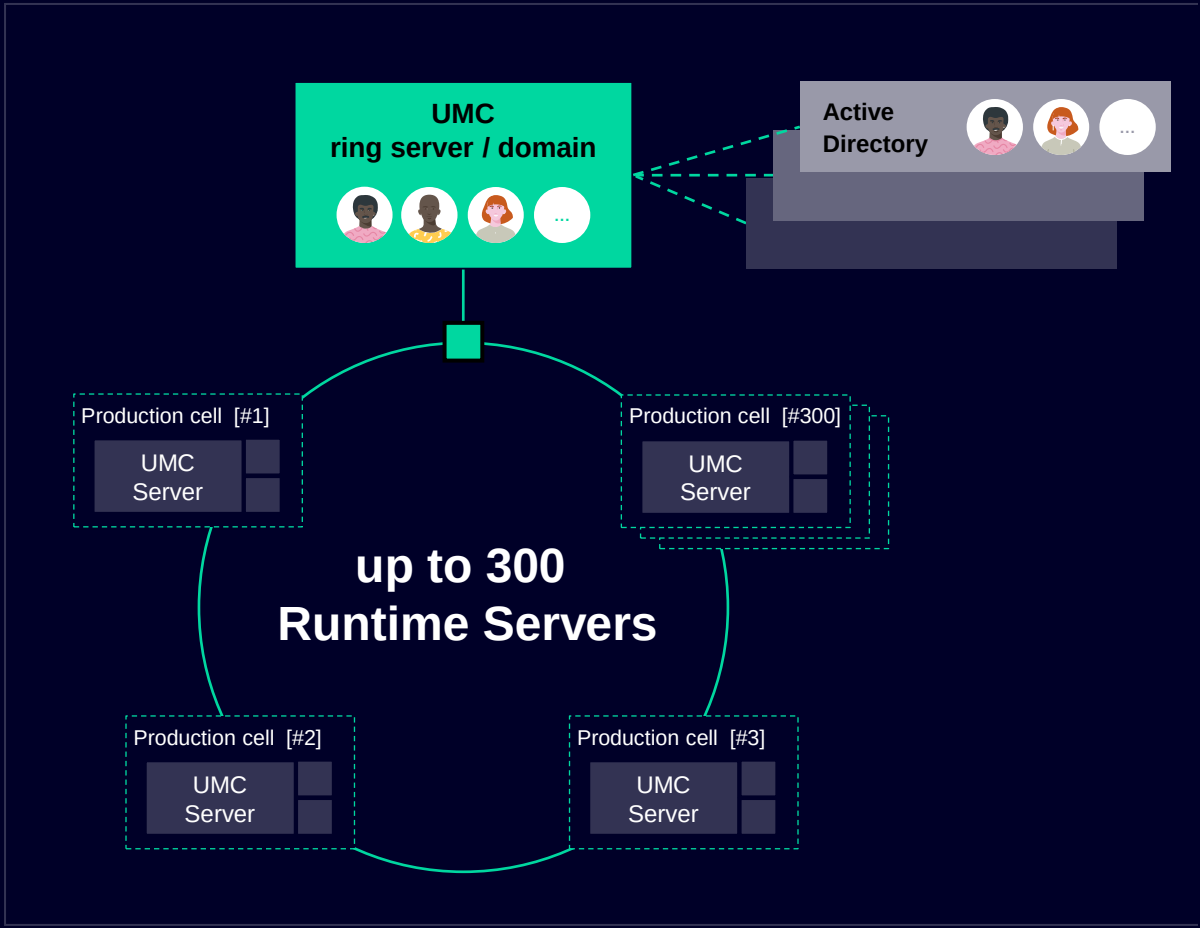
Central User Management (UMC)
Expanded quantity structure for Runtime Servers



Expanded quantity structure

- For larger infrastructures UMC is able to synchronize in a network of multiple Runtime-Servers per Ring-Server.

  The quantity structure for running UMC in larger infrastructures has been expanded, so that UMC can now synchronize in a network of **up to 300 Runtime Servers per Ring Server**.

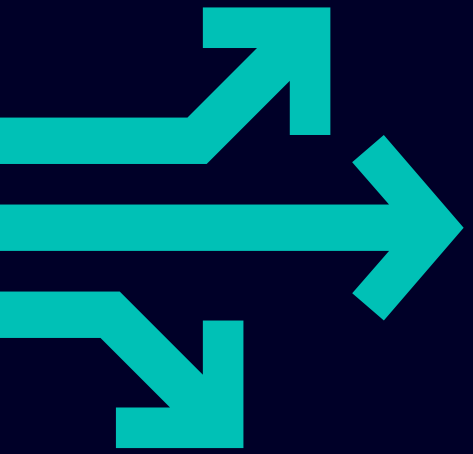
Benefit

- More flexibility in the design of the UMC infrastructure, e.g. one UMC Ring server per production unit, even in large structures.

SIEMENS

TIA Portal V19
Modular Application Creator

Content



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Modular Application Creator enables the automatic generation of TIA Portal projects

Hardware configuration

ECAD/HWCN

NEW: Free of Charge with V17.2

Modular Application Creator

- Management of **projects and versioned/signed equipment modules**
- Easy configuration with **technological view** and **graphical guided assistance** as well as **automatic validation**
- **Generating instead of programming** TIA Portal projects

Equipment Modules

Weihen-stephan	OMAC	Intelligent Belt	MCS Creator	Printing Standard	Converting Toolbox	Technology Object Generator
WS	OMAC		Update	Update	Update	Update

Module Builder

New

Visual Studio Extension to create your own **custom modules**

TIA Portal Project

HMI & Drives (via Openness)

SIMIT

New

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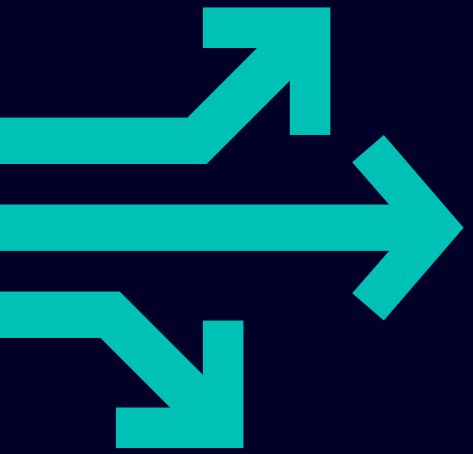
TIA Portal V19
SIMATIC ProDiag/SysDiag

Content



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ProDiag
Customer Benefits: Key questions to make decisions

> You are faced with the task of adapting your process diagnostics very often and do not want to change your library function blocks every time?

> You want to cycles granularly record all process errors in order to identify causalities?

> You want to reliably identify sporadic errors and display them on the HMI?

> You want to handle your supervisions centrally in a separate view, independent of your user program?

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ProDiag
Availability

+ SIAMTIC S7-1500 family

+ SIMATIC HMI WinCC Unified/Unified Comfort Panels

WinCC Adv.

+ SIMATIC HMI WinCC Advanced/Comfort Panels

WinCC Adv.

+ SIMATIC HMI WinCC Professional/WinCC Scada (ab V.8)

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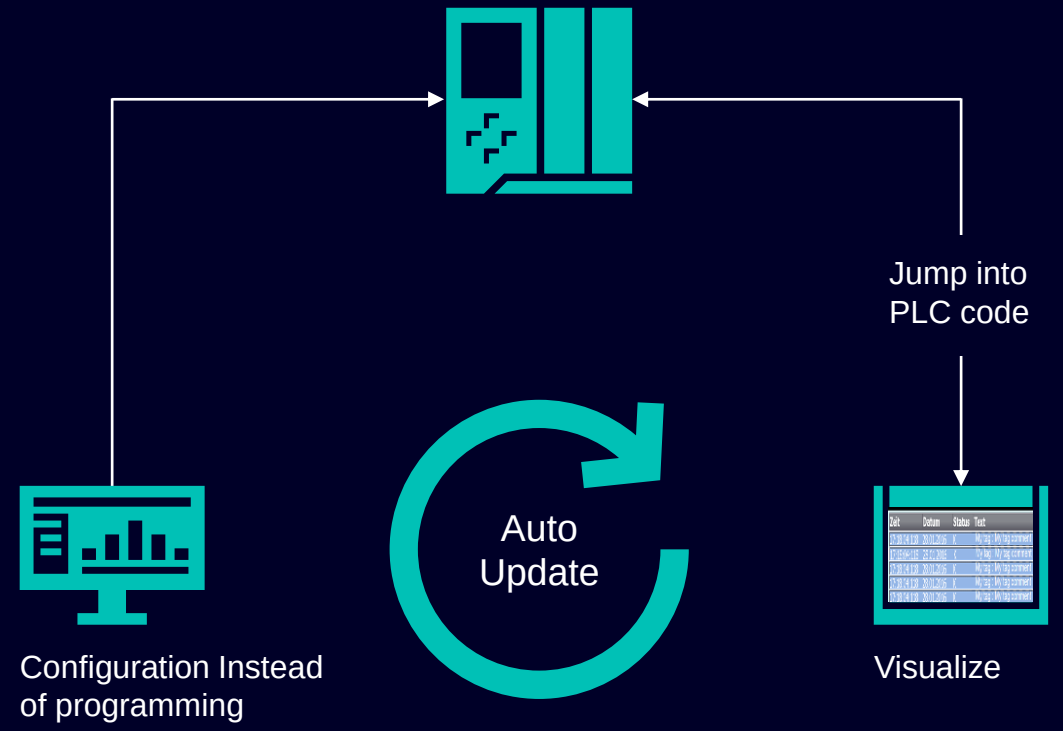
System advantage: Automatic Update of the HMI during runtime

- PLC is available as a central alarm server for 3 languages
- System ensure the data consistency
- No consideration of different engineering steps required
  → Download to PLC → ready
- Easy maintenance
  → No specialist staff for HMI required
- Changing alarms during operation



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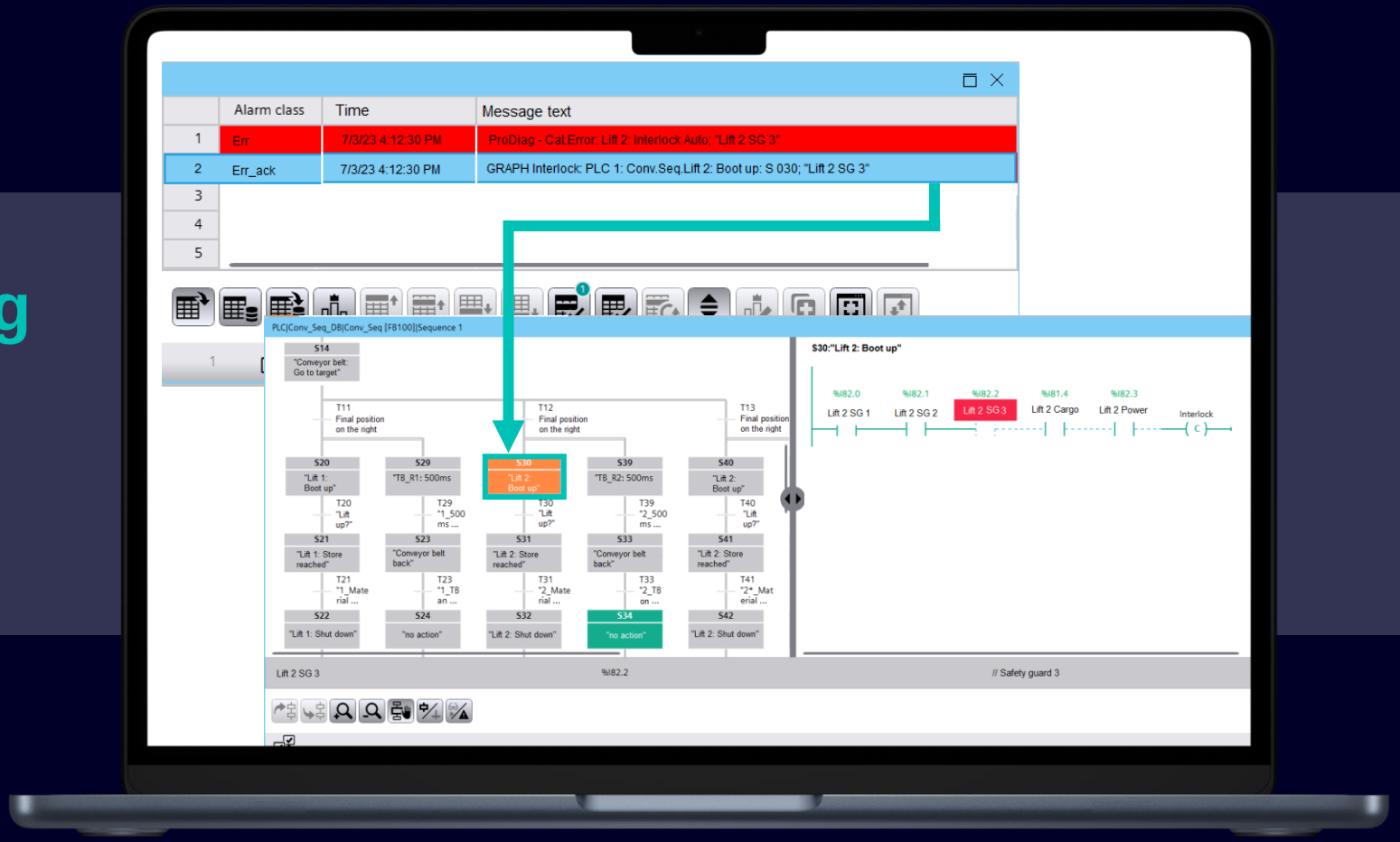
ProDiag
Initial value acquisition and Criteria Analysis



Continuous recording of signal states

→ It is possible to determine which monitoring tag triggered first

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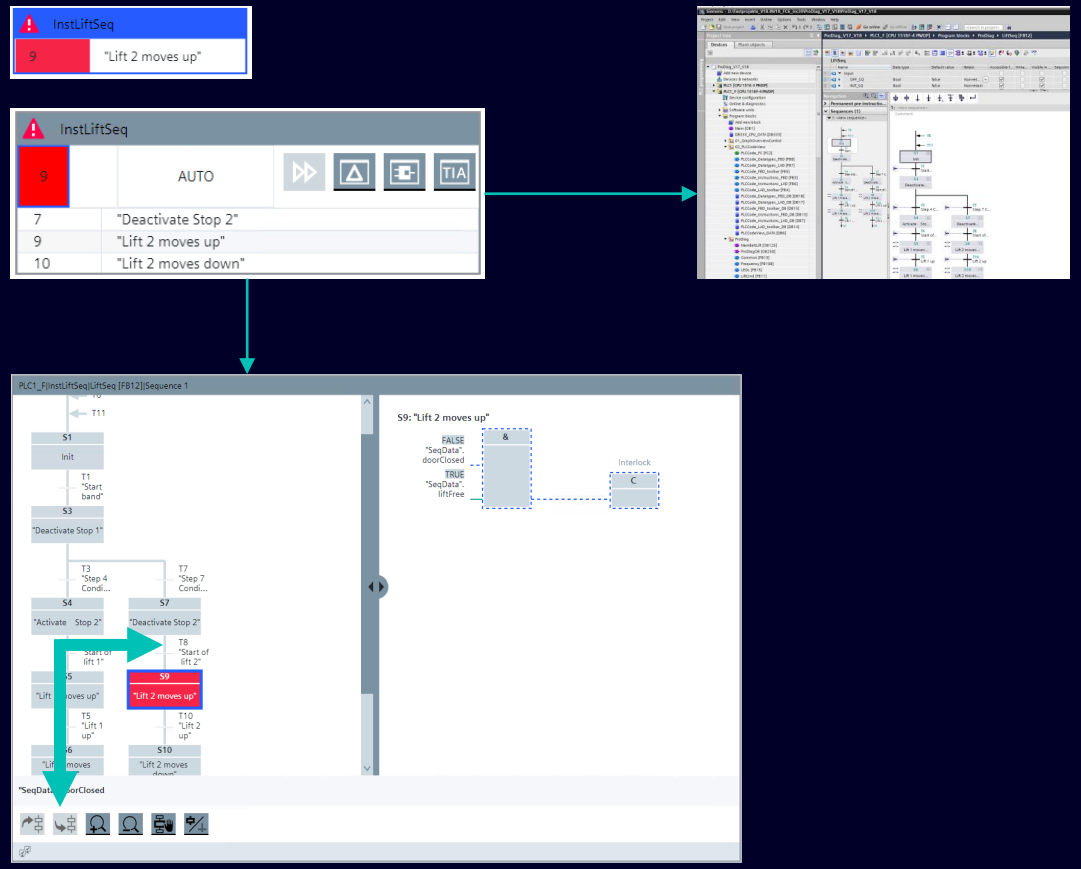
ProDiag
Comprehensive error monitoring of production process



Predefined generic views

- GRAPH Overview Control: Overview over the current steps
- ProDiag Overview Control: Technological view of the process
- PLC Code View Control:
  - GRAPH sequencer
  - Detail view on LAD/FBD

Scripting

- Jump from GRAPH Overview Control to the PLC Code View or into the TIA Portal
- Jump from GRAPH Alarm to PLC Code View
- Jump from ProDiag Alarm to PLC Code View
- System functions to operate PLC Code View

1. Planned for V18 Update

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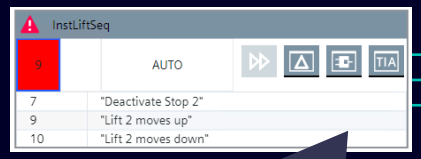
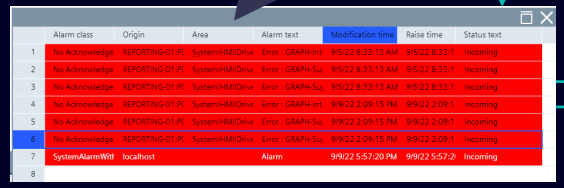
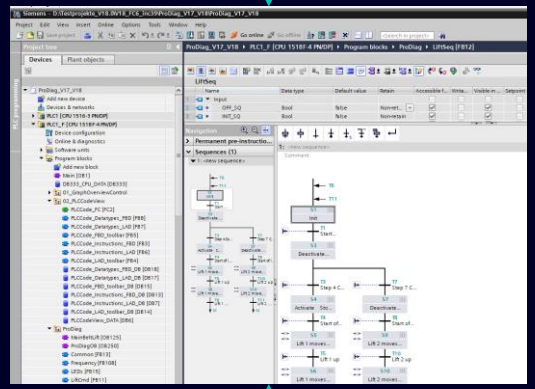
ProDiag
Monitoring a machine or plant, diagnosing errors in the process



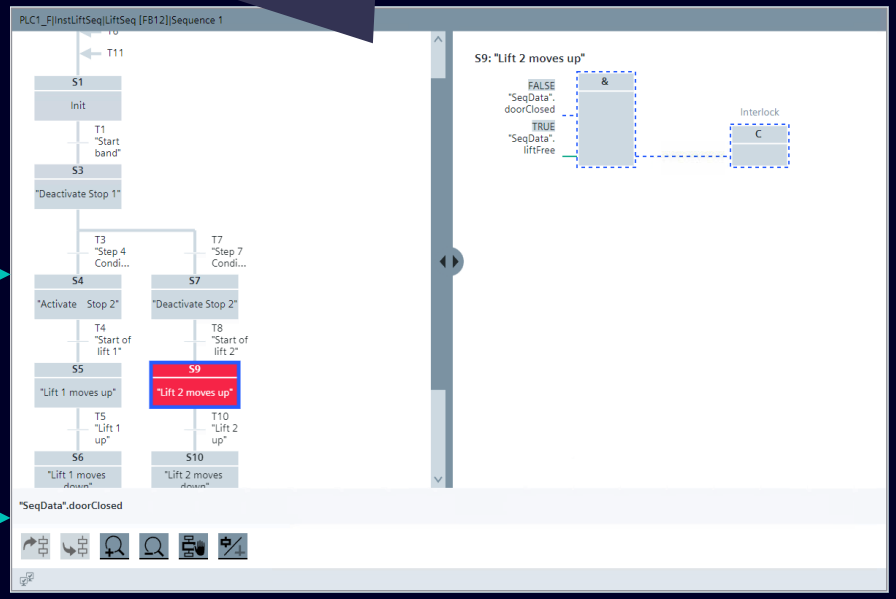
GRAPH Overview:
Current state overview of a GRAPH sequence

From GRAPH Alarm:
open PLC Code View/ TIA Portal





PLC Code View:
GRAPH sequence and step details



ProDiag Runtime Controls and Jump Features

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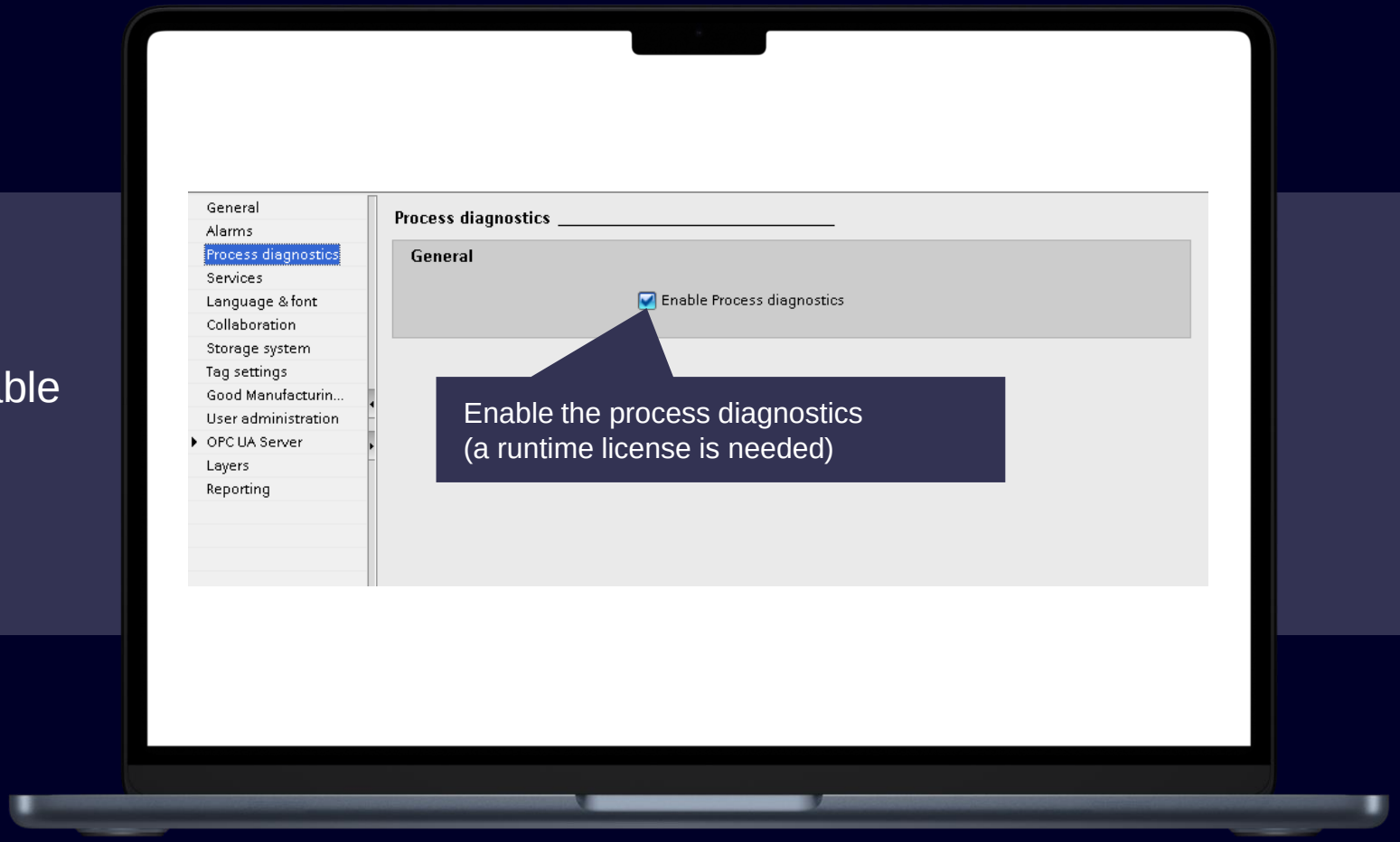
To use the ProDiag

controls in runtime you need to enable the process diagnostics



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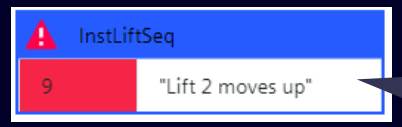
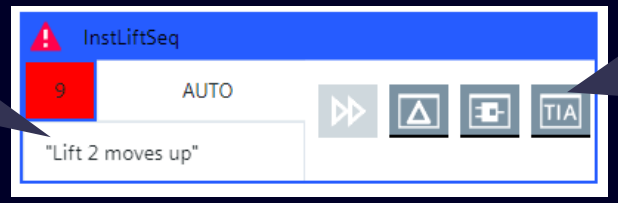
ProDiag
GRAPH Overview Control



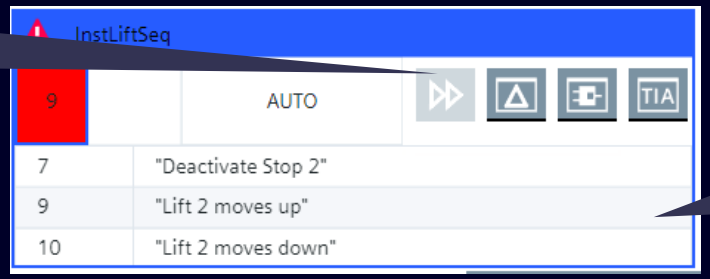
Current step state in given sequence

Responsive, depending on size, more information is shown.



Use buttons to configure i.e., to jump to an Alarm screen, open the sequence in PLC Code View, open TIA Portal

Move between simultaneous steps in a sequence



Previous, current and next step

GRAPH Overview Control

- **Overview over the current steps**
- **Options:**
  - Single line mode
  - Initial step
  - Simultaneous step
  - Operation mode
  - Previous and next step

GRAPH Overview Control

Display of the current state for executed steps of a S7-GRAPH sequencer

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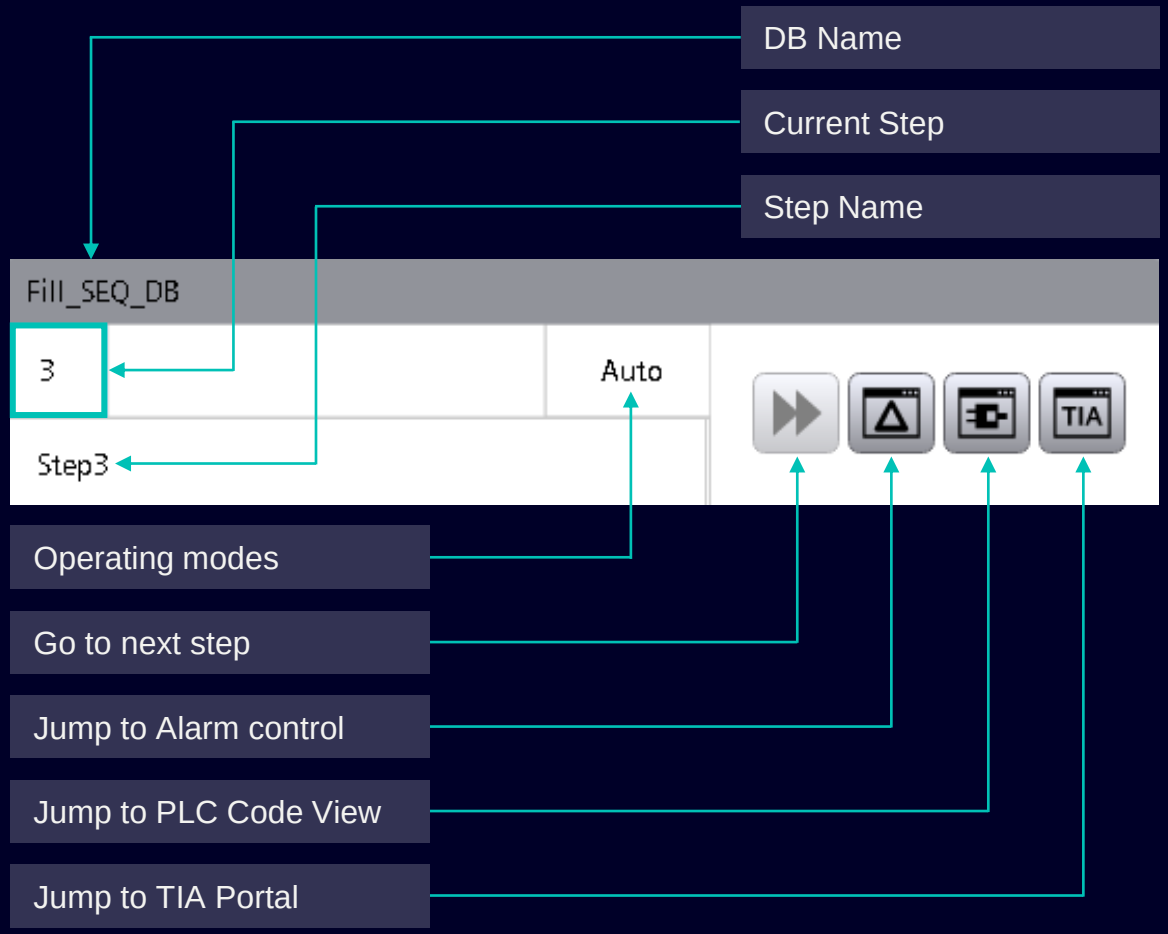
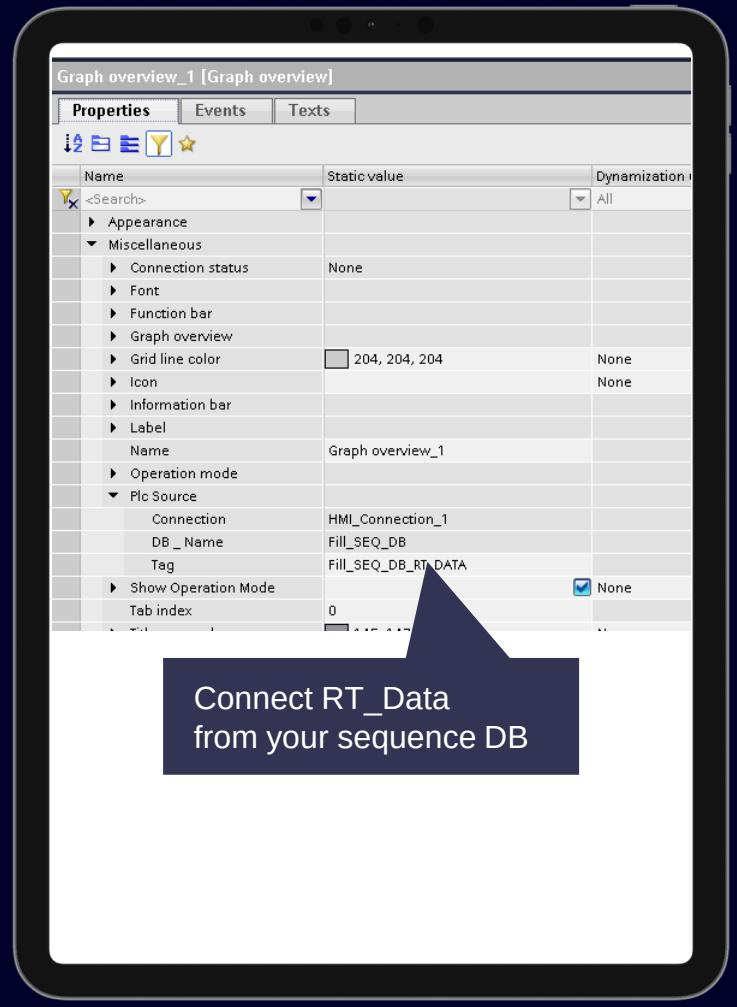
ProDiag
GRAPH Overview Control





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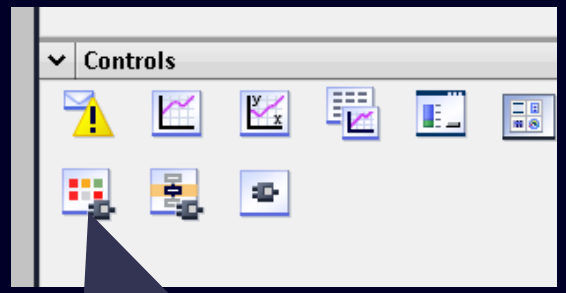
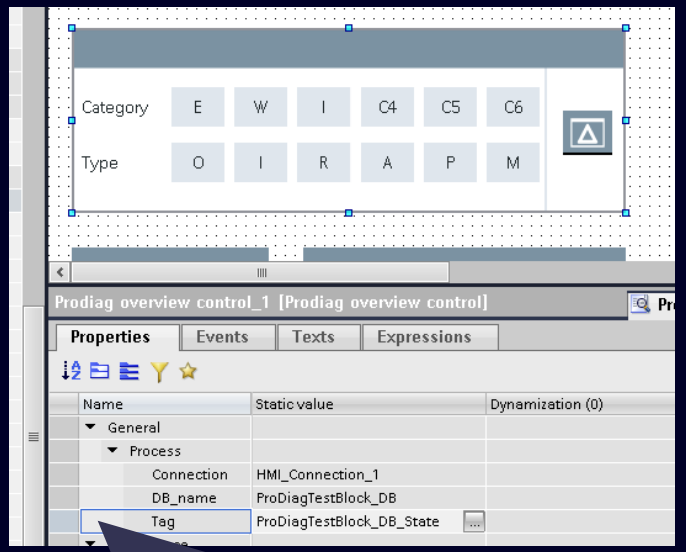
ProDiag
ProDiag Overview Control

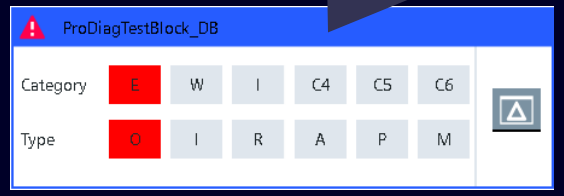


ProDiag Overview Control



Connect it to the State tag of ProDiag Supervision DB

Runtime shows if there are errors (including category and type)



ProDiag Overview Control

- **Overview over the current supervisions of an ProDiag Supervision FB**
- **Options**
  - Category (user defined, e.g., error, warning, info, ...)
  - Type (interlock, reaction, ...)

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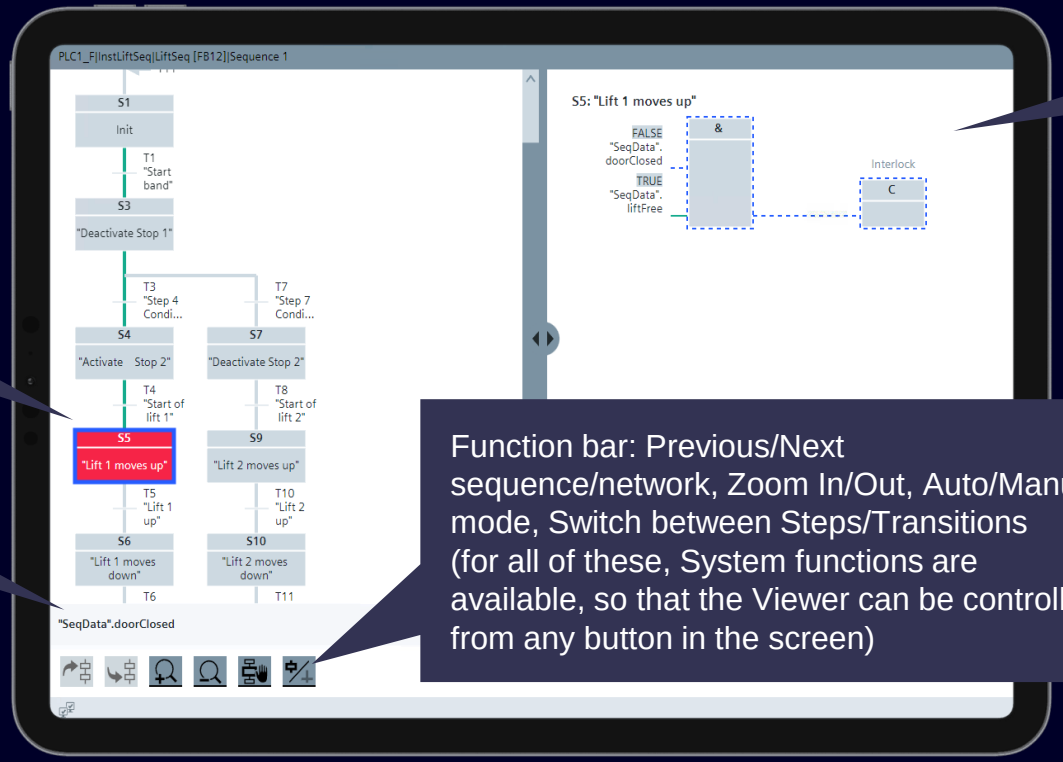
ProDiag
PLC Code View Control



GRAPH Sequence with Step state, Transition information and Back trace.

Symbol line

Step or Transition details (FBD/LAD) with power flow

Function bar: Previous/Next sequence/network, Zoom In/Out, Auto/Manual mode, Switch between Steps/Transitions (for all of these, System functions are available, so that the Viewer can be controlled from any button in the screen)

Visualization of a GRAPH sequence

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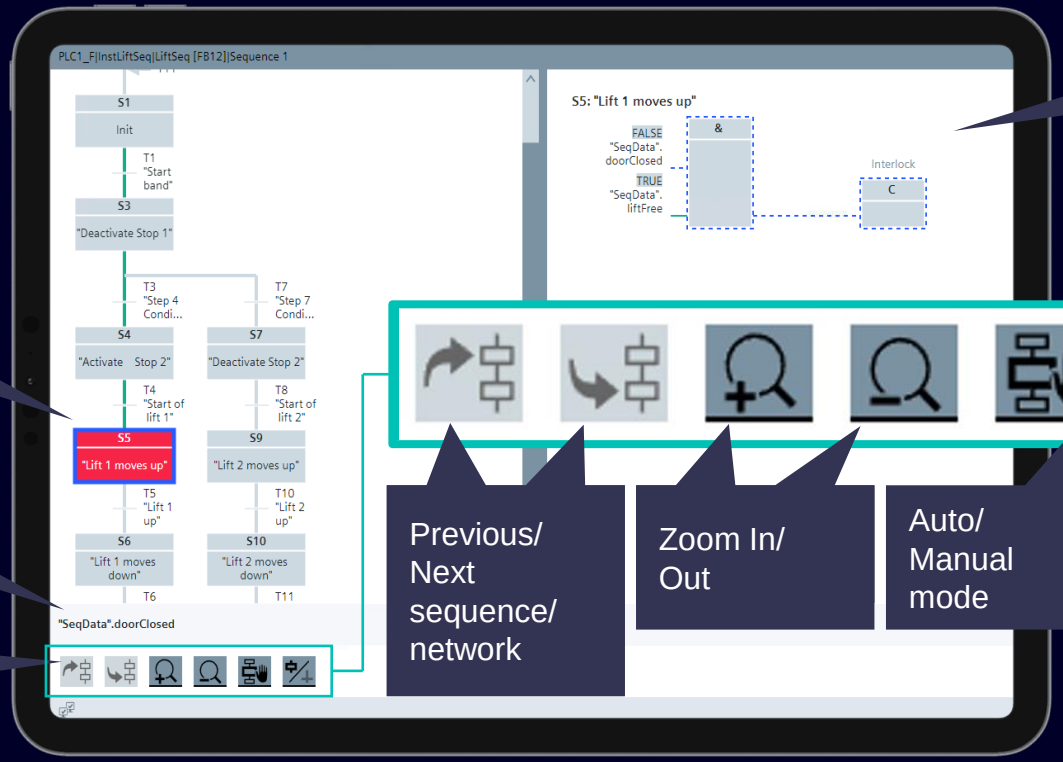
ProDiag
PLC Code View Control



Step or Transition details (FBD/LAD) with power flow

Step state, Transition information and Back trace.

Symbol line

System function bar

Previous/ Next sequence/ network

Zoom In/ Out

Auto/ Manual mode

Switch between Steps/ Transitions

Visualization of a GRAPH sequence

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ProDiag
PLC Code View Control

CodeView Control can show Graph, LAD and FBD blocks

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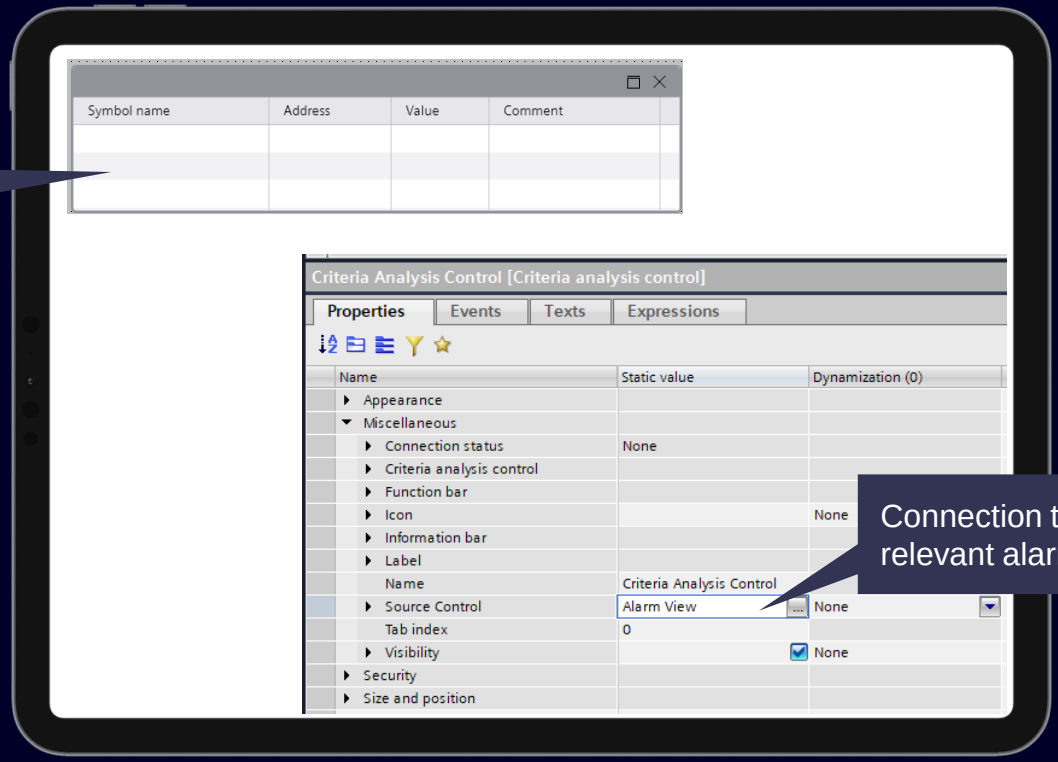
ProDiag
PLC Code View Control

Listing of all initial values with Symbol name, Address, Value, Comment



Connection to the relevant alarm control

Display of all initial values for a selected alarm

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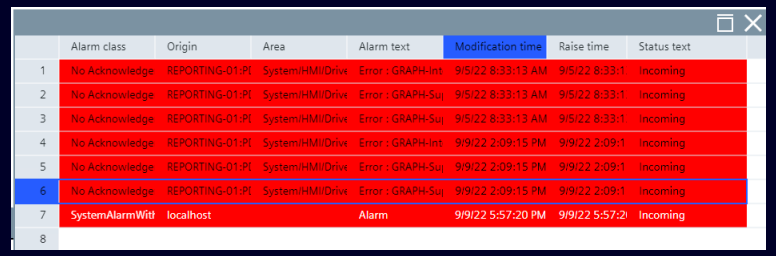
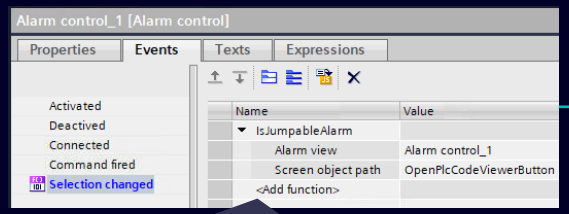
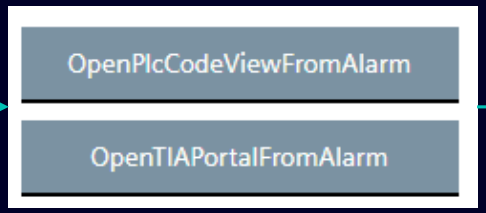
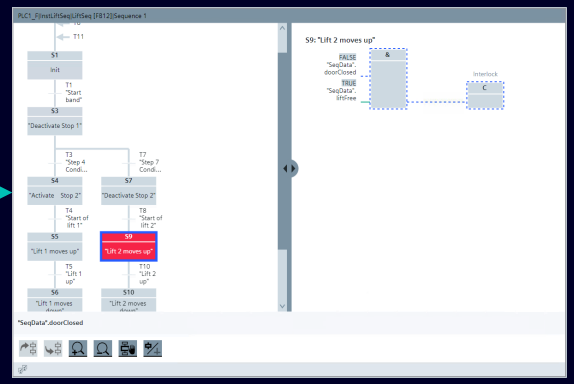
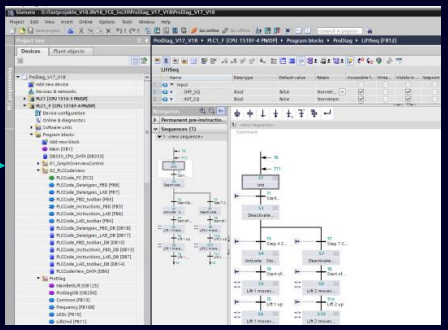
ProDiag
Jump from GRAPH Alarm to PLC Code View/Open TIA Portal











Example: Use IsJumpableAlarm to enable Button, then use Open*FromAlarm to see the corresponding GRAPH sequence in the Plc Code Viewer or in TIA Portal

SystemFunctions: IsJumpableAlarm, OpenPlcCodeViewerFromAlarm
Script Function: OpenTIAPortalFromAlarm

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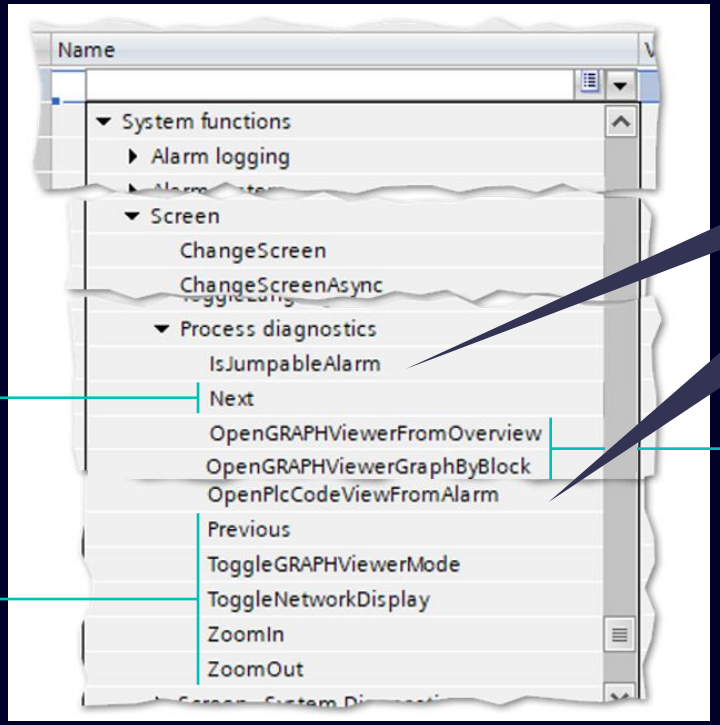
ProDiag
System functions



External control of Plc Code Viewer

Jump functionality from Alarm

External control of Plc Code Viewer

Multiple System functions for Process Diagnostics available

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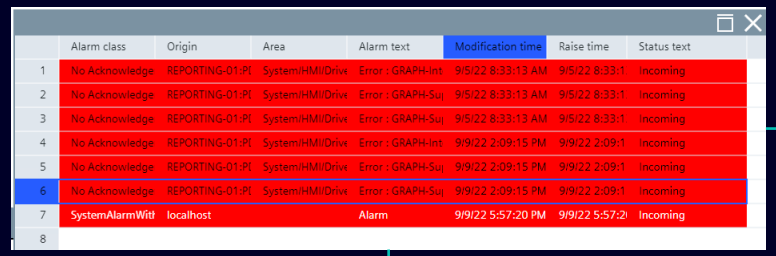
ProDiag
Get information of selected alarm



Script Function:
GetSelectedAlarmAttributes
(“Alarm control_1”)

```
*** GetSelectedAlarmAttributes ***

ID:54
ModificationTime: 2022-09-13 12:48:25.678
AlarmClassName: No Acknowledgement
Name: PDIAG_0::PDIAG_0_Con_PLC1_F_CentralAlarm:"PDIAG_0_Con_PLC1_F:CentralAlarm"
InstanceID: 224
AlarmClassSymbol:
State: 1
StateText: Incoming
RaiseTime: 2022-09-13 12:48:25.678
AcknowledgmentTime:
ClearTime:
ResetTime:
SuppressionState: 0
Priority: 0
EventText: Error : GRAPH-Supervision :  : PLC1_F : LiftSeq : Lift 1 moves up : S005
AlarmText1: ##Text missing##
AlarmText2: ##Text missing##
AlarmText3: ##Text missing##
AlarmText4: ##Text missing##
AlarmText5: ##Text missing##
AlarmText6: ##Text missing##
AlarmText7: ##Text missing##
AlarmText8: ##Text missing##
AlarmText9: ##Text missing##
ProcessValue1: 5
ProcessValue2: 109
ProcessValue3: 0
ProcessValue4: 0
ProcessValue5: null
ProcessValue6: null
ProcessValue7: null
ProcessValue8: null
ProcessValue9: null
ProcessValue10: null
Origin: REPORTING-01:PDIAG_0_Con_PLC1_F
Area: System/HMI/DriverCommunication
Value: 0
ValueQuality: 0
ValueLimit:
UserName:
LoopInAlarm:
AlarmGroupID: 0
Duration: 00:00:00.0000000
HostName: REPORTING-01
InfoText:
Frequency: undefined
AverageActiveActive: undefined
SumActiveActive: undefined
AverageActiveAcknowledged: undefined
SumActiveAcknowledged: undefined
AverageActiveInactive: undefined
SumActiveInactive: undefined
```

```
*** Alarm control SelectedRowData ***

AlarmClass = No Acknowledgement
 AlarmId = 54
 Area = System/HMI/DriverCommunication
 EventText = Error : GRAPH-Supervision :  : PLC1_F : LiftSeq : Lift 1 moves up : S005
 InstanceId = 224
 ModificationTime = 9/13/22 2:48:25 PM
 ModificationTimeNS = 1663073305678.0684
 Origin = REPORTING-01:PDIAG_0_Con_PLC1_F
 RaiseTime = 9/13/22 2:48:25 PM
 StateText = Incoming
 SystemID = 1
```

Alarm Control Event:
OnSelectionChanged
(item, SelectedRowData)

Alarm Control: OnSelectionChanged
Script Function: GetSelectedAlarmAttributes

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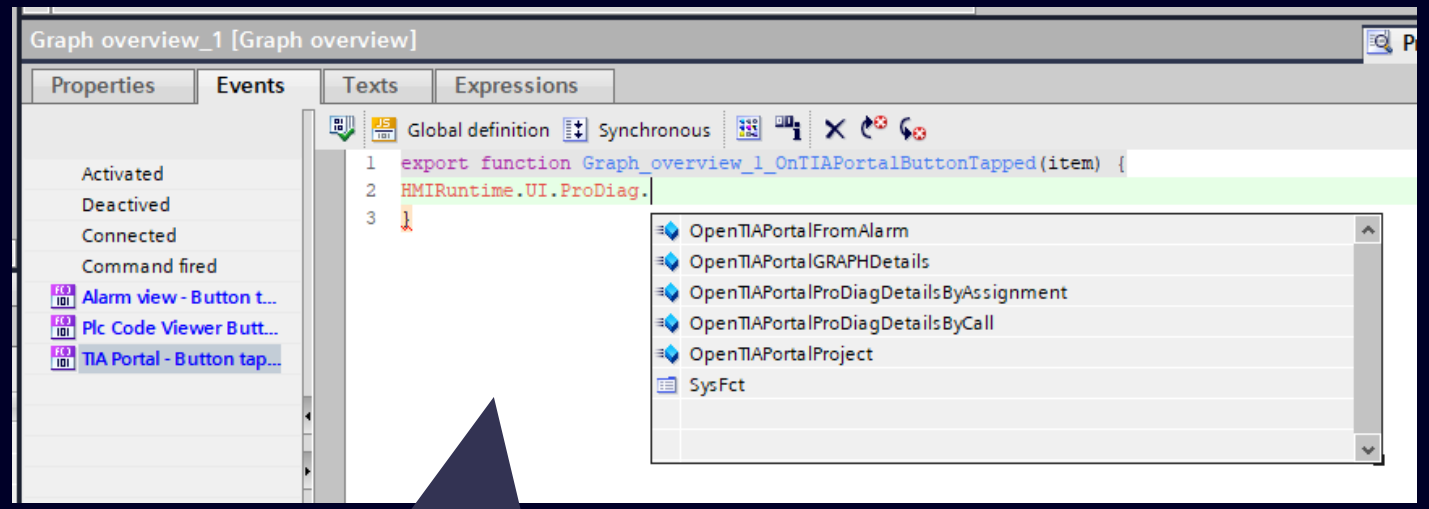
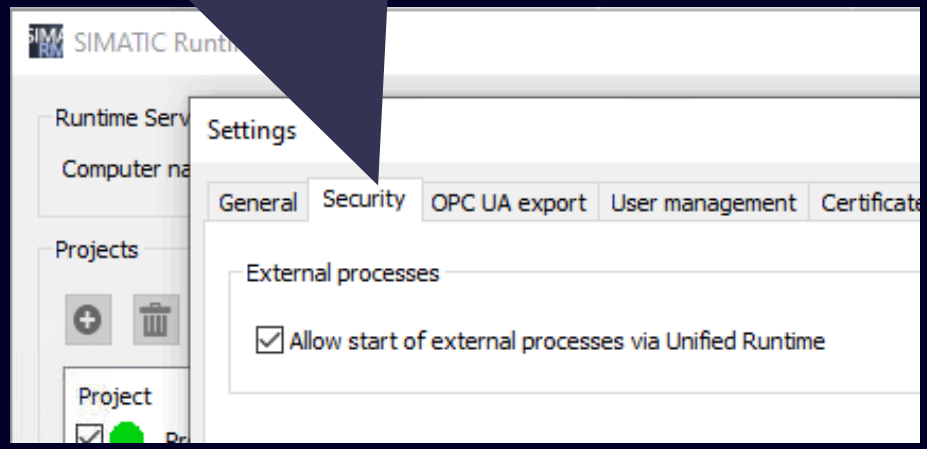
ProDiag
Open TIA Portal script functions



Multiple ways to open TIA Portal

Prerequisites:

- TIA Portal and Unified Runtime installed on same machine
- “Allow start of external processes via Unified Runtime” enabled in SIMATIC Runtime Manager



Multiple Script Functions OpenTIAPortal for PLC Runtime available

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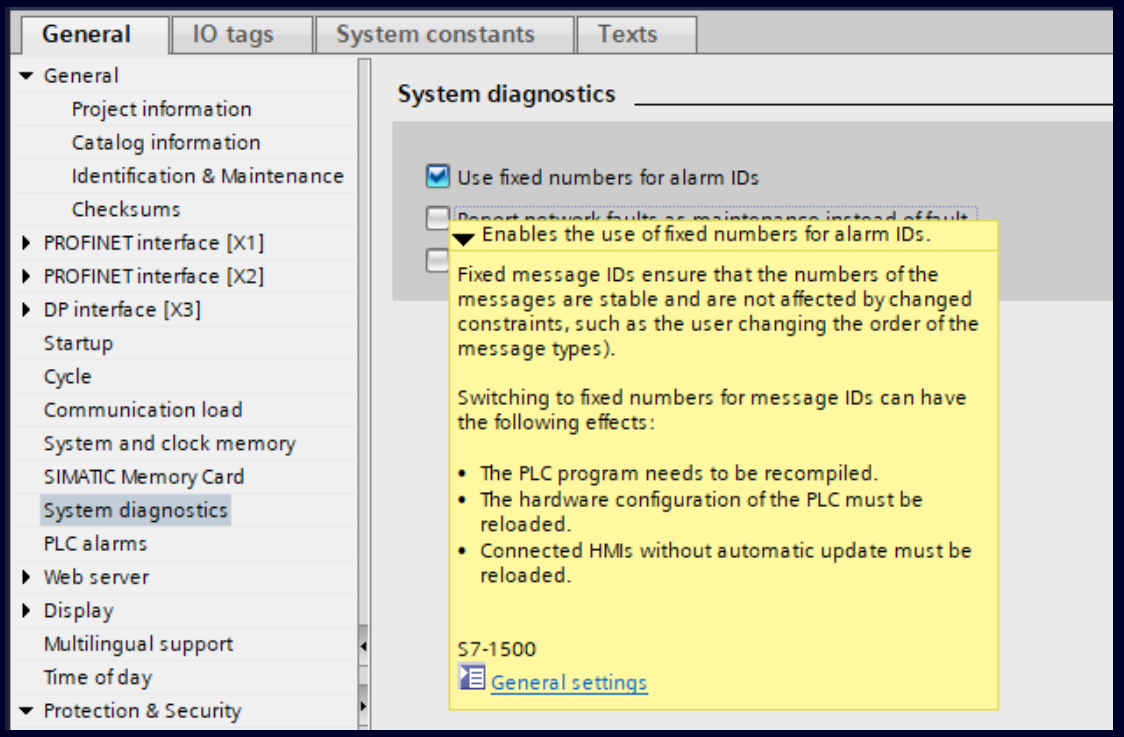
SIMATIC SysDiag



Fixed numbers for System Diagnostic Alarms

From Version 19 onwards, the system diagnostic alarms for certain system diagnostic categories get a fixed ID (Default).

The user can adapt older projects accordingly.

Compatibility with old projects can still be maintained.

Benefits

- **Easy way to create a file-based help system for corresponding System Diagnostic Alarms**
- **Easy way to interact with a foreign language hotline to identify an error**

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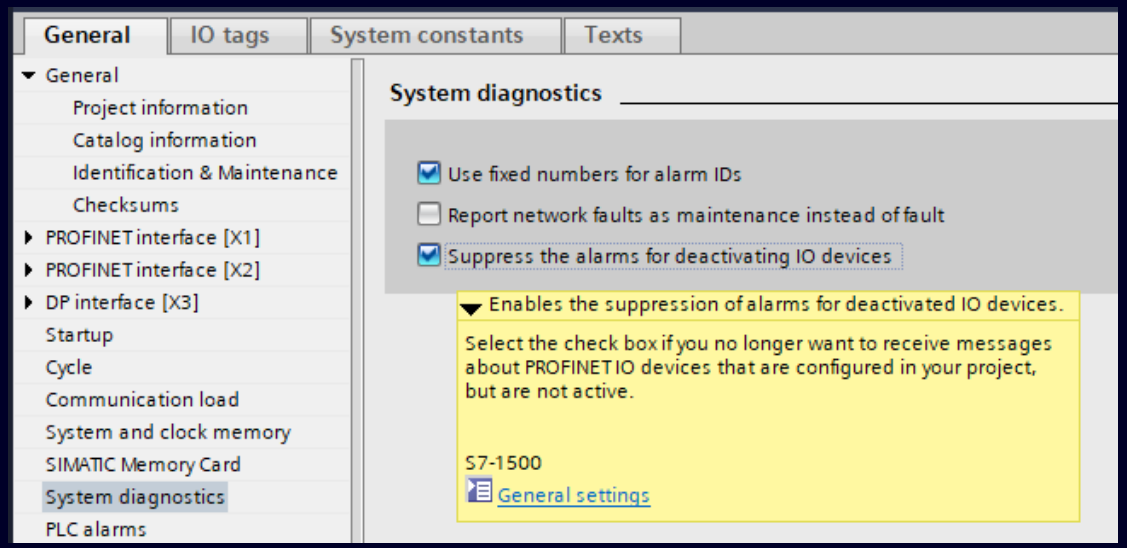
SIMATIC SysDiag



Suppress of alarms of deactivated PROFINET IO devices

From Version 19 (FW 3.0) onwards it is possible that alarms of deactivated devices will no longer be displayed in the PLC buffer also in the HMI alarm view.

Benefits

Important for customers who configure their machine using the user program. In this case you don't want to offer a machine with error entries.

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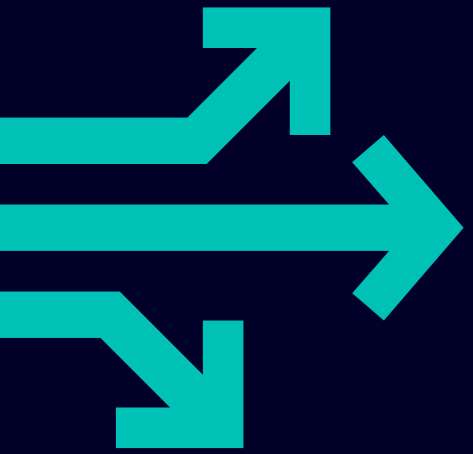
TIA Portal V19
TIA Portal Teamcenter Gateway

Content



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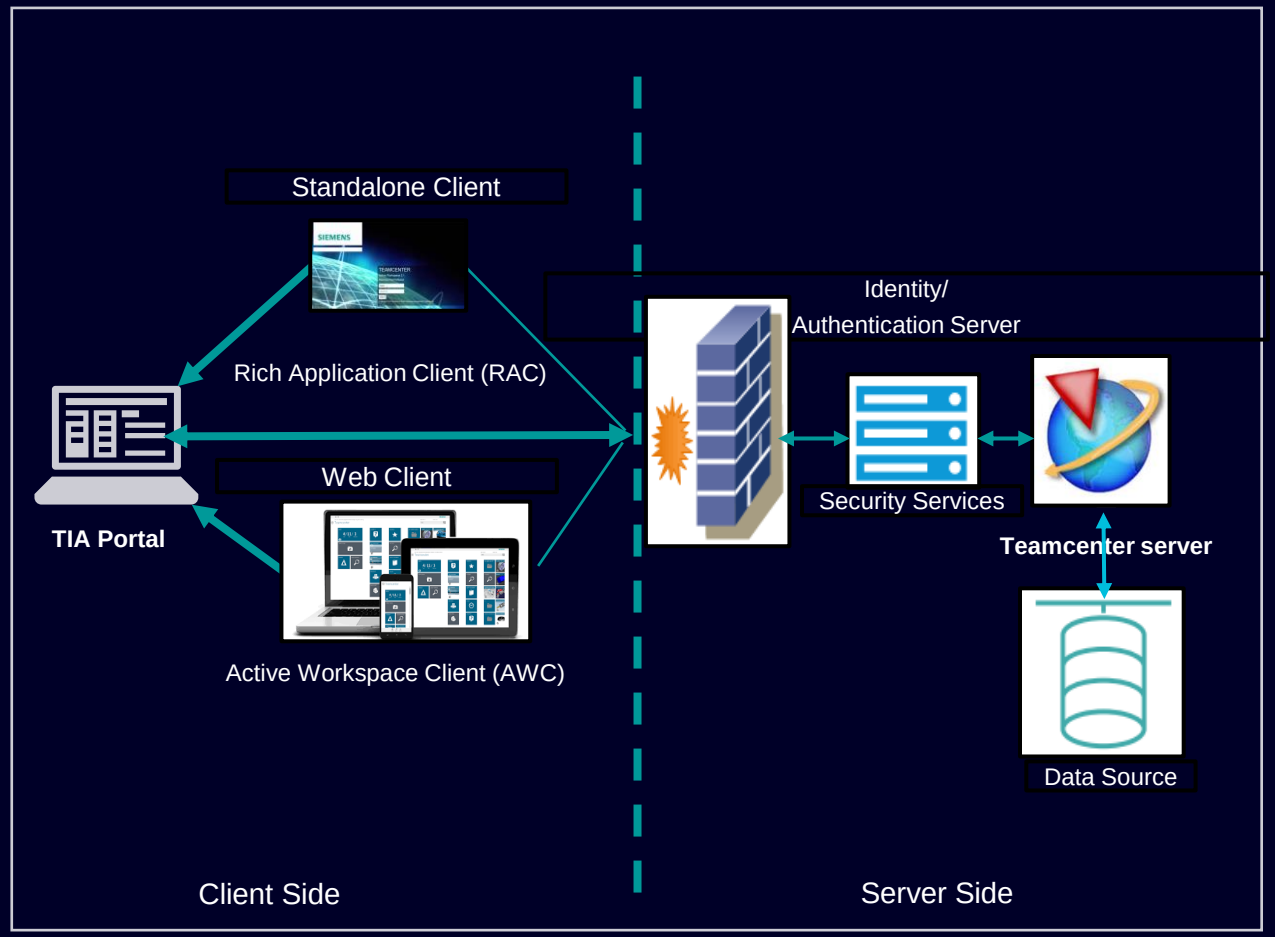
TIA Portal Teamcenter Gateway
Integration of TIA Portal with Active Workspace Client (AWC)



Integration of TIA Portal with Active Workspace Client

- View TIA Portal Project data in Web Client i.e., Active Workspace Client.
- Ability to Open TIA Portal application from Active Workspace Client.
- Zero Installation in TIA Portal Client side.

Benefits

- Enables communication to Teamcenter from TIA Portal Teamcenter Gateway using Active Workspace Client.
- User not really required to install and use Rich Application Client (RAC) to view TIA Portal project in Client side.
- Easy way to open TIA Portal project (or) program block from Active Workspace Client.
- User able to customize TIA Project structure view as per need in Active Workspace Client.

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Disclaimer

Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

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