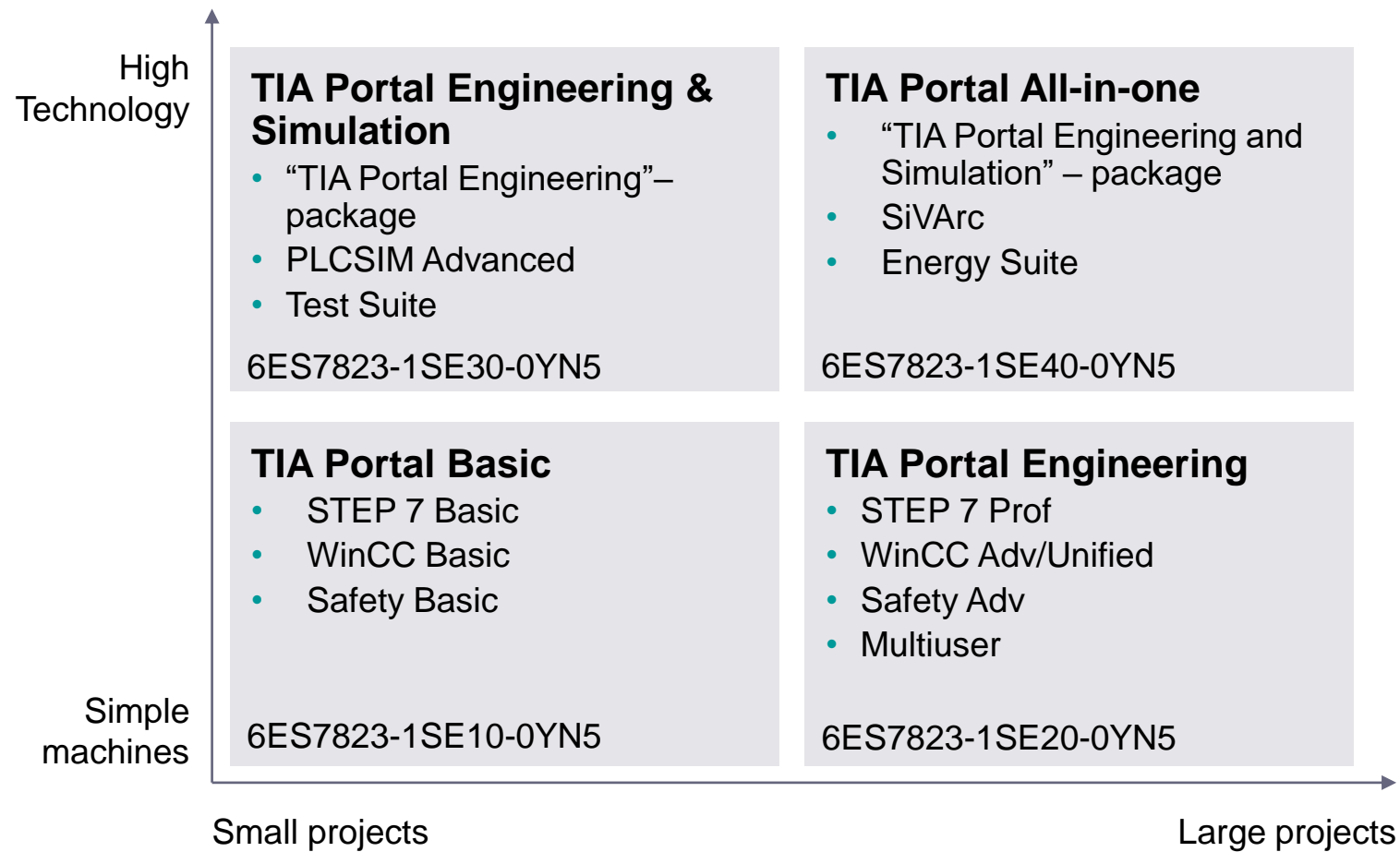


TIA Portal V17 – Highlights - PLC

November 2021

Subscription packages with TIA Portal V17

(TIA Portal V17 – on premise)



Summary

Introduction of “Easy-to-use” Subscription packages

Easy entry to the TIA Portal Framework

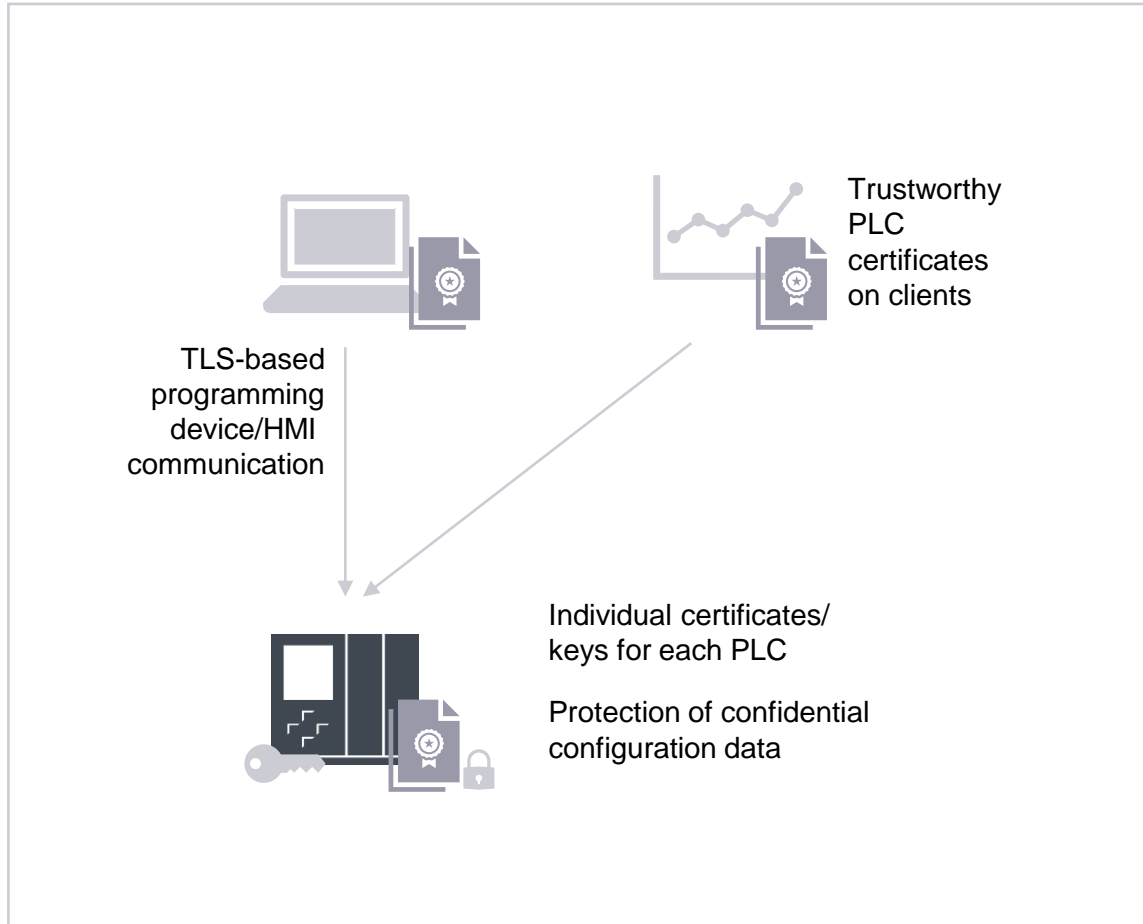
Packages tailored to needs and applications

Yearly subscription



System functions

Enhanced security for SIMATIC programming device/HMI communication



Security improvements for programming device/HMI communication between TIA Portal / HMIs and S7-1200/1500 CPUs

- Communication security based on Internet-standard TLS¹
- PLCs use certificates to identify or authenticate themselves to engineering or HMI systems
- Certificates are generated automatically via TIA Portal or can be imported from external sources
- A compatibility mode can be activated for the previous and the new TLS-based communication at the same time
- Protection of sensitive configuration data in TIA Portal and the CPU is possible by means of a user-defined password (optional)

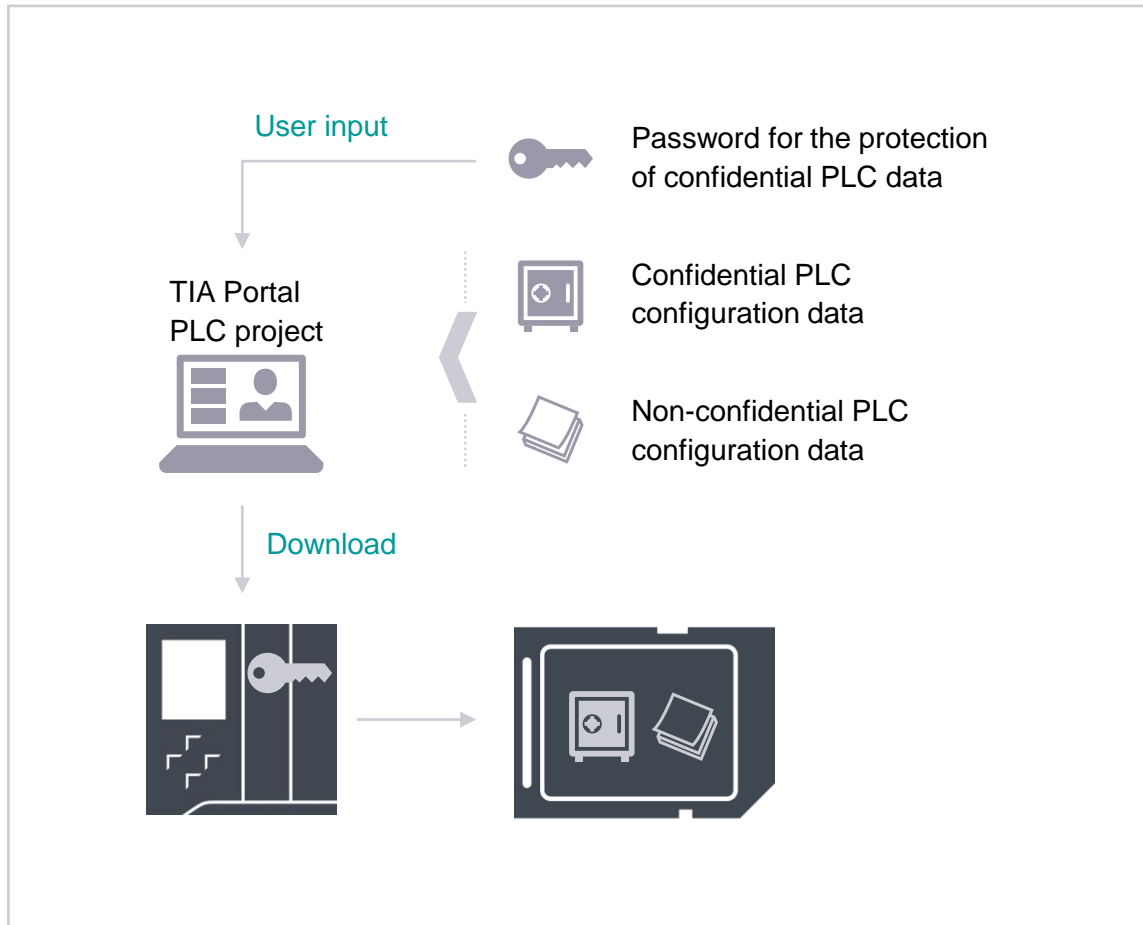
Benefits

- Enables unique identification of every PLC based on individual certificates
- Provides additional confidentiality protection by means of encrypted communication
- Protection of configuration data by means of individual passwords

¹ TLS – Transport Layer Security

System functions

New mechanism to protect confidential PLC configuration data



User-defined protection of configuration data

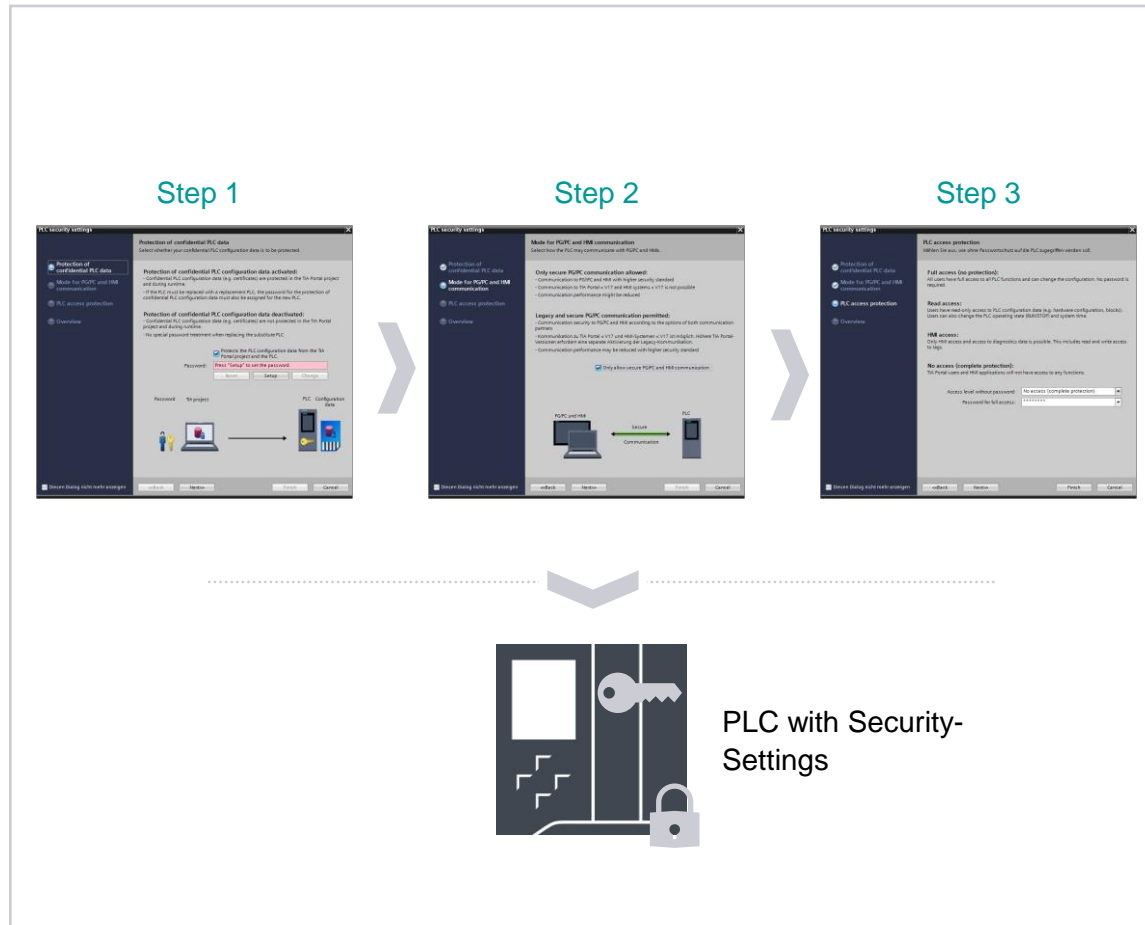
- Confidential PLC configuration data must be protected against unauthorized access in accordance with the deployment environment
- In this context, confidential configuration data specifically refers to private keys of certificates for programming device/HMI communication, web servers, OPC UA, etc. – but this has nothing to do with know-how protection
- The data is protected based on a user defined password
- The configuration of the protection is optional but it impacts handling when replacing devices as the password must also be configured for the replacement CPU:
 - Setup via initial download
 - Online configuration via TIA Portal
 - Configuration via separate SIMATIC memory card

Benefits

Protection of configuration data by means of individual passwords

System functions

Security Wizard for new PLC Security Mechanisms



Security Wizard

- The new Security Mechanisms are activated by default (Security-by-Default) in new PLC Firmware versions.
- When inserting a new CPU (S7-1500 FW v2.9, S7-1200 FW v4.5) a new Security Wizard appears automatically to configure the security mechanisms.
- Following configuration is done via the Security Wizard:
 - Protection of confidential PLC configuration data
 - Mode for secure PG/PC and HMI Communication
 - PLC Access Protection
- The Security Wizard can also be called again later from the Hardware Configuration.

Benefits

- Quick and easy configuration of the new PLC Security mechanisms in a single process step
- Supporting information to select suitable settings for own use case

SIMATIC WinCC Unified System – Overview – TIA Portal V17



Platform



SIMATIC WinCC Unified
View of Things
S7-1500



SIMATIC HMI
**Unified Comfort
Panels**



SIMATIC WinCC Unified
PC

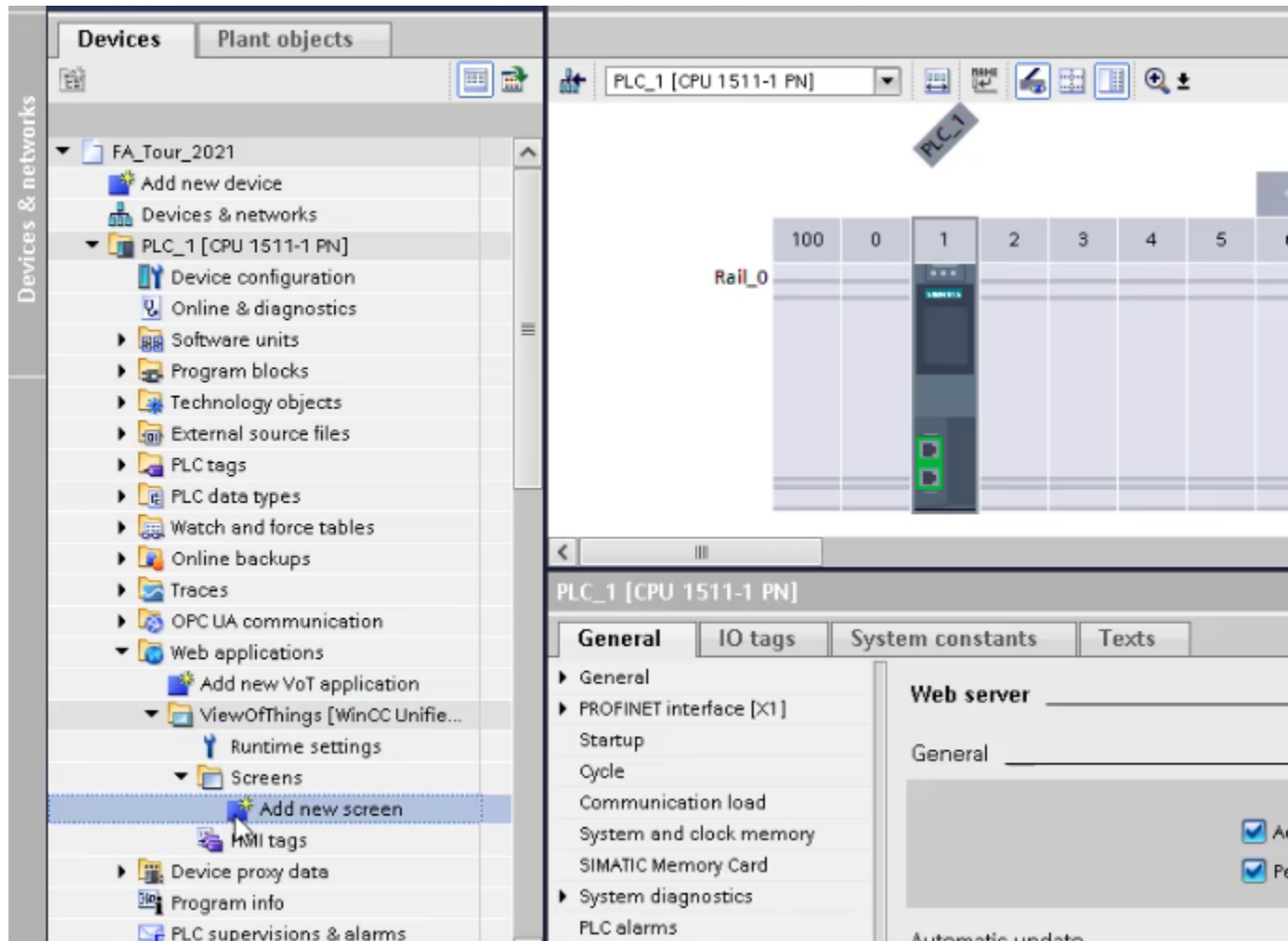
Engineering



**Engineering
(in TIA Portal)**

WinCC Unified View of Things

Comfortable editor in TIA Portal instead of web programming



Basic objects & Elements
(e.g. I/O field, button, gauge)

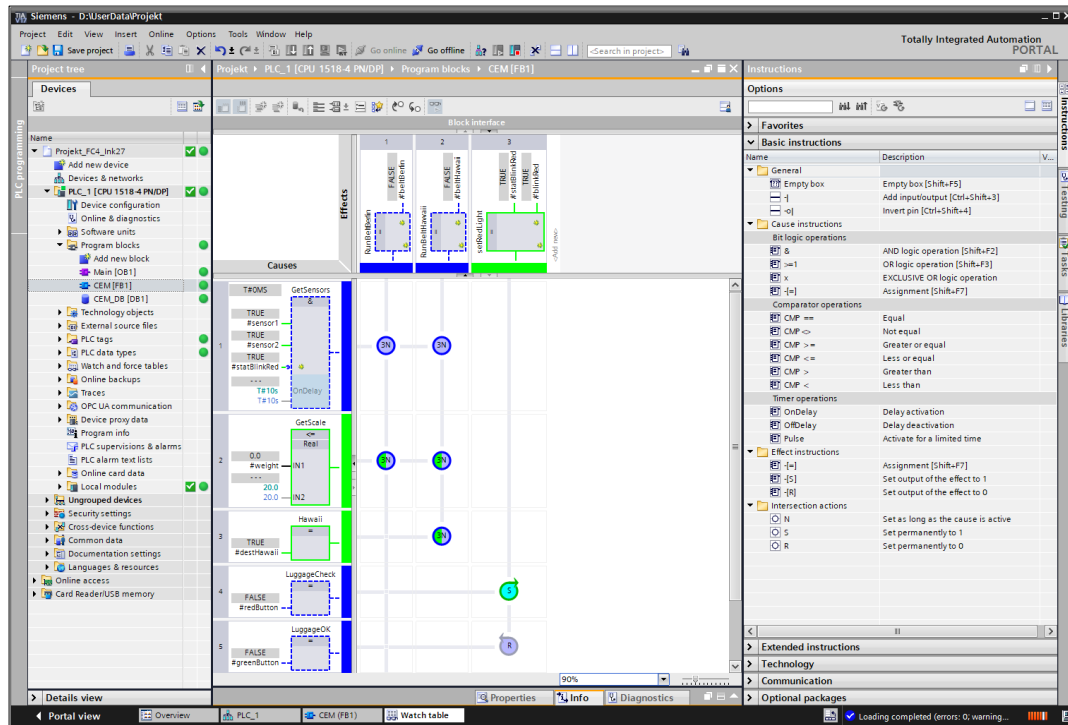
Graphics (incl. Dynamic SVG) as well as Screen
Windows to build screen architecture

Basic Scripting functionality with JavaScript in
screens

User Management with the S7-1500 Webserver

STEP 7 – innovations

Cause Effect Matrix (CEM)



What are the advantages of the CEM?

Efficient and simple programming

→ No need for high-level language expertise

Programming errors easy to detect

→ Perfect clarity thanks to matrix structure

Can be run on S7-1200 and S7-1500

→ Provides solutions for both small and large installations

Group supervisions

→ Programming of M out of N dependencies

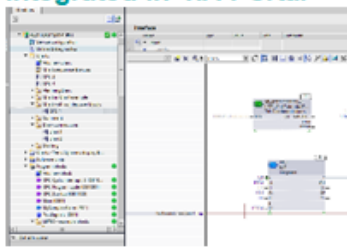
Unique portfolio element

→ CEM, a new innovative programming language in TIA Portal

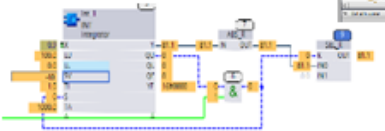
STEP 7 – innovations

SIMATIC STEP 7 CFC V17

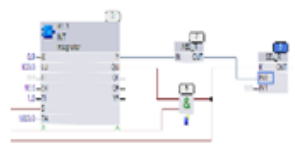
Integrated in TIA-Portal



Observe online

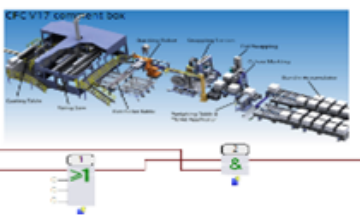


Graphical Program

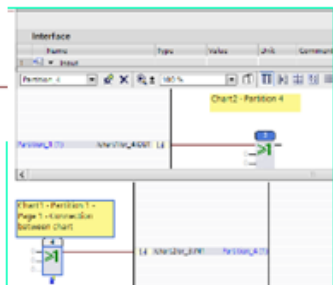


**SIMATIC Step7 CFC
Graphical Program Editor**

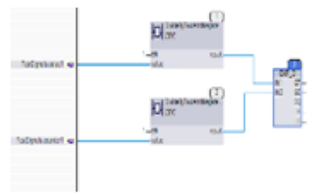
Use pictures as comments



Connect different charts



Re-use CFC logic



SIMATIC STEP 7 CFC

Graphical programming for SIMATIC S7-1500

Generation of automation programs by drawing a technology chart

→ **Solve automation tasks already in the configuration phase**

Parameterize technology functions by linking function blocks
(AND, OR, PID Controllers)

→ **Functions are created much faster than with conventional programming**

Use of “Chart in Chart” technology for a hierarchical structure

→ **Significantly less possible error sources**

Convert technical requirements into complete, executable automation programs by pressing a button

→ **The configuring data are converted automatically.**

Use the TIA Portal mechanisms for the transfer to the programmable controller

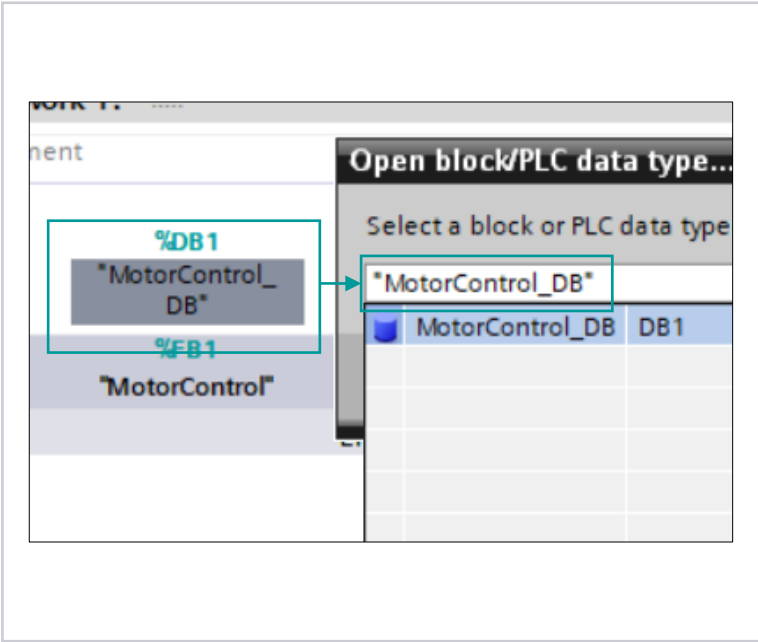
→ **More efficient engineering**

STEP 7 – innovations

General extended functions

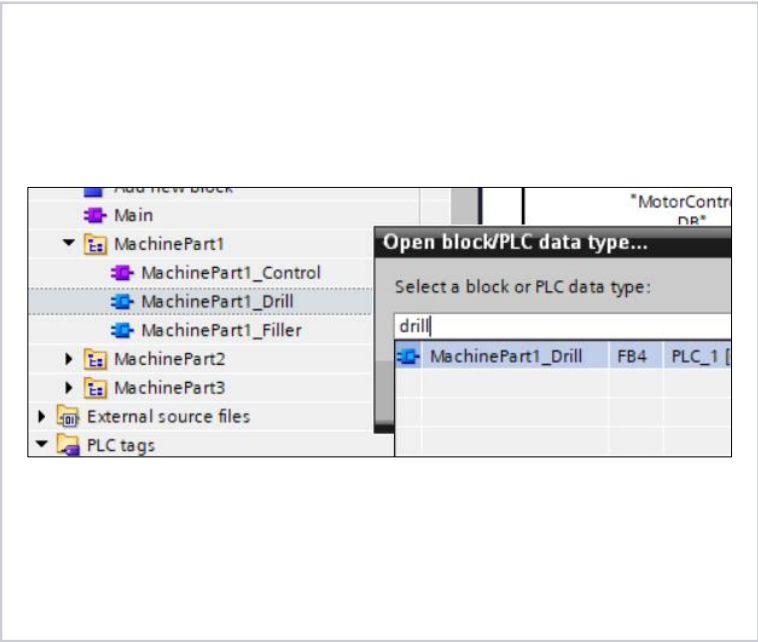
Ignore inverted commas in "Open block" dialog (F7)

This allows block names to be copied straight from an editor to the "Open block" dialog, where they can then be opened.



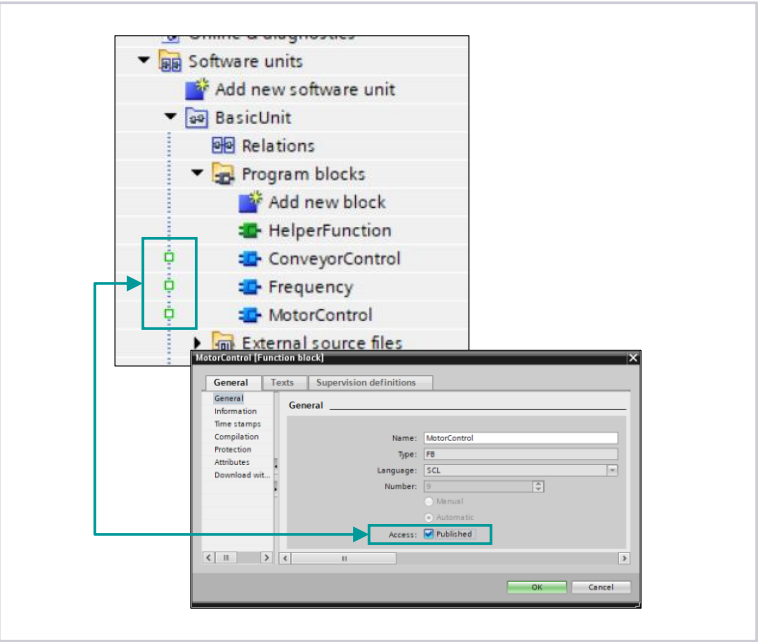
Partial search for block names in "Open block" dialog (F7)

Block search without entering prefix in "Open block" dialog.



Display of "Published" block property in project tree

The "Published" property is visualized in the project tree itself for blocks, PLC data types (UDT) and PLC tag tables within software units.

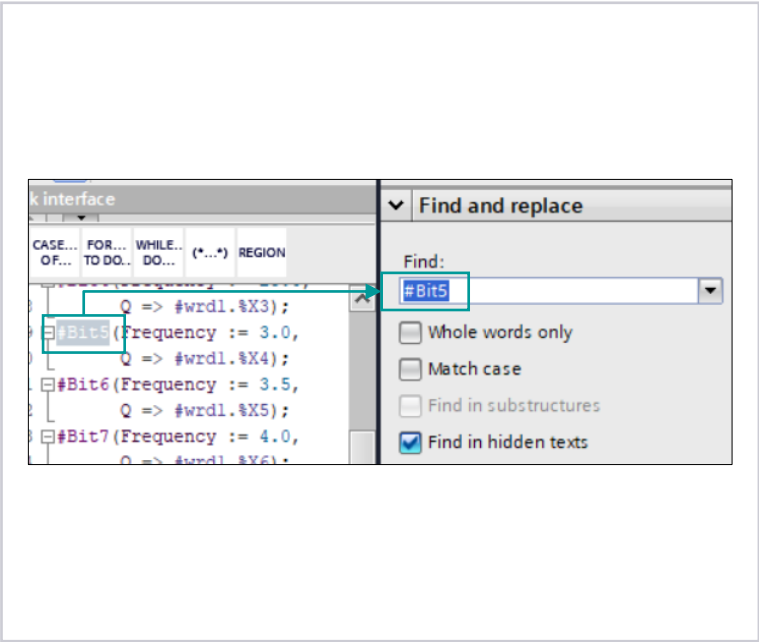


STEP 7 – innovations

General extended functions

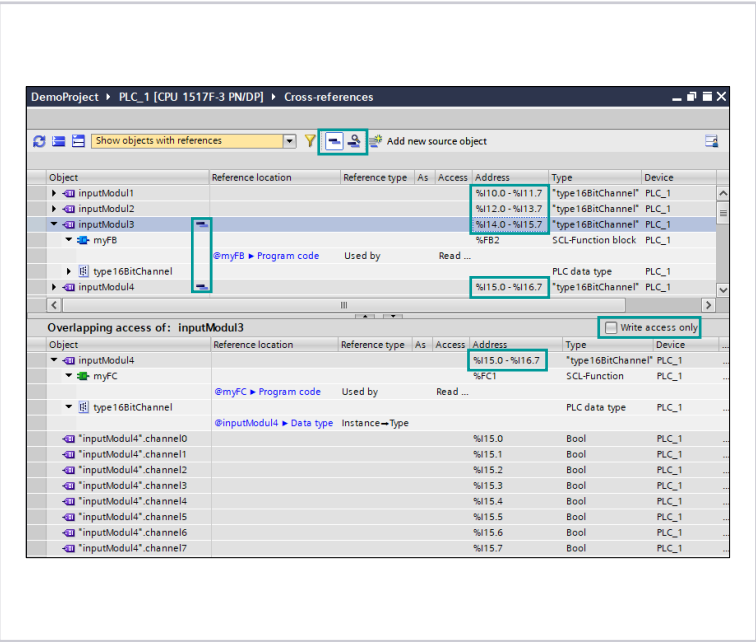
Simplified search with "Ctrl + F"

In many STEP 7 editors, "Ctrl + F" can be used to copy the marked text straight into the Find box of the local search function. A second "Ctrl + F" copies the search text to the global search.



Cross-reference editor

Improved visualization of overlapping input and output addresses.

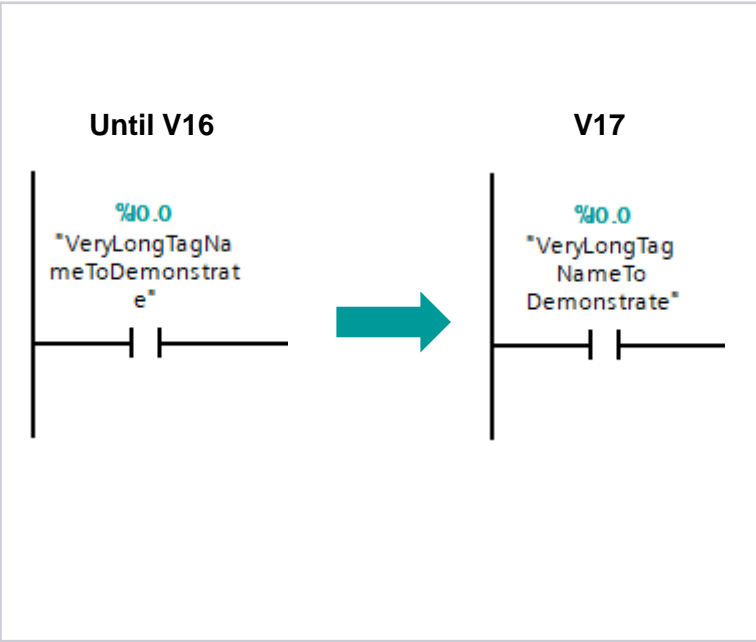


STEP 7 – Innovationen

General extended functions

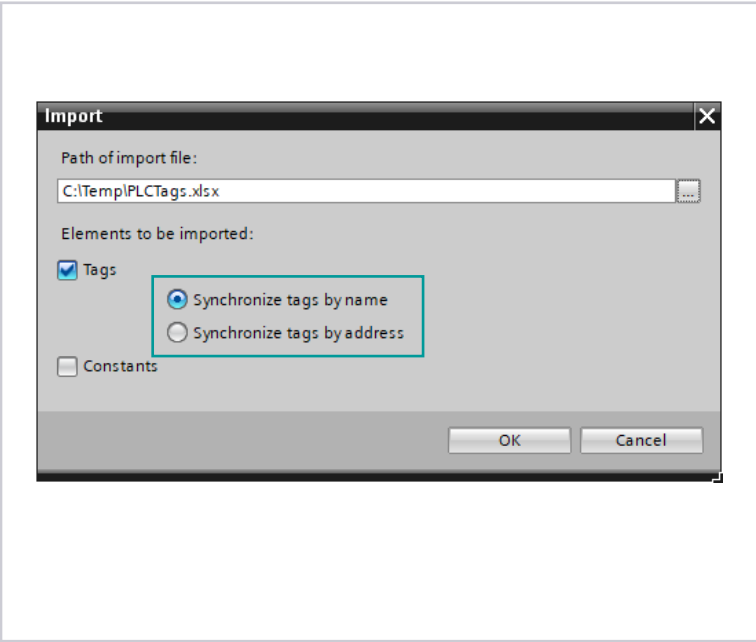
Improved line break at variable names

In LAD, FBD, GRAPH and CEM, at operands written in "camelCasing" or "PascalCasing" a line break is inserted before an uppercase letter if possible.



Synchronisation at tag Import

When importing PLC tag tables, e.g. from Microsoft Excel, it is possible to decide whether to synchronize by name or address. This makes it easy to distinguish between renaming or rewiring.



More one-finger keyboard shortcuts

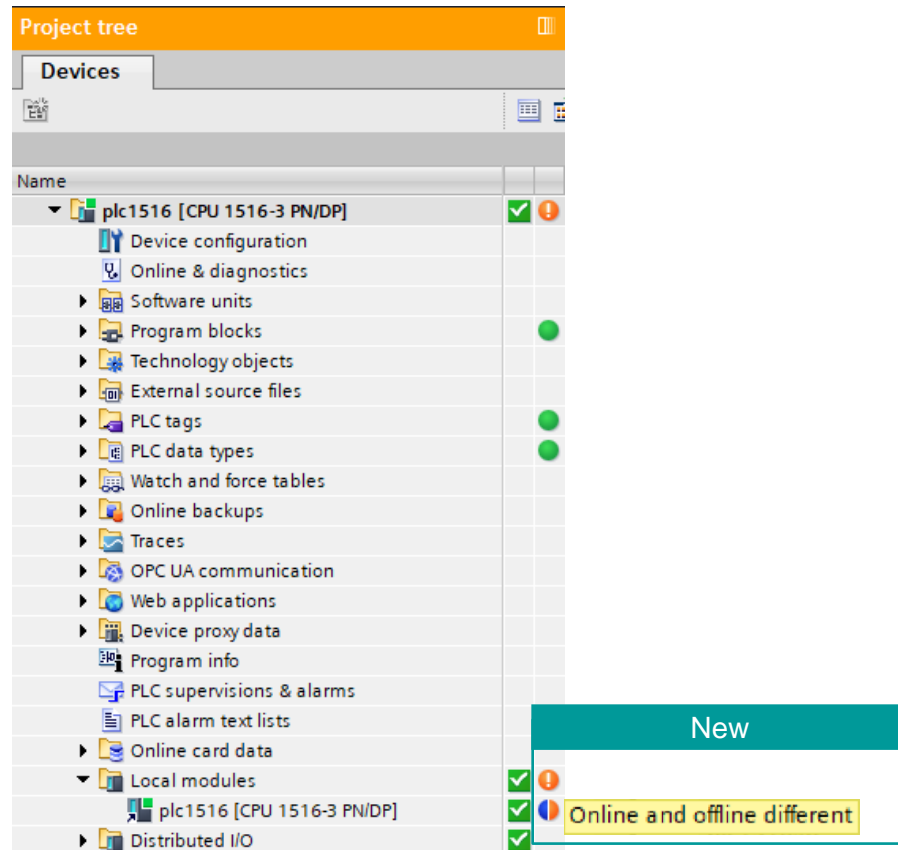
The keyboard shortcuts for LAD (empty box, normally closed, normally open) and FBD (empty box, AND, OR) can now be operated with one finger (F8, F9, F10).

LAD:		
Description LAD Editor Instruction	Existing Shortcuts (up to V16)	New Shortcuts (V17)
Empty box	Shift+F5	F8
Normally open contact	Shift+F2	F9
Normally closed contact	Shift+F3	F10

FBD:		
Description FBD Editor Instruction	Existing Shortcuts (up to V16)	New Shortcuts (V17)
Empty box	Shift+F5	F8
AND box	Shift+F2	F9
OR box	Shift+F3	F10

TIA Portal – hardware configuration

Global offline/online comparison



Function

Comparison of compiled offline hardware configuration in TIA Portal with the online hardware configuration on the device:

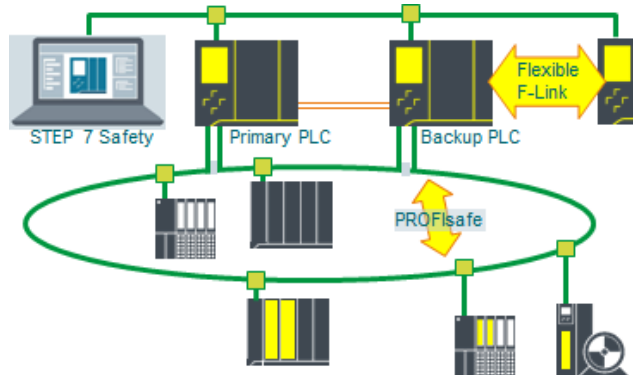
- Quick overview
- Distributed I/O for the PLC is taken into account
- Based on checksums and takes user inputs into account

Application

- Offline and online configurations are identical
- Offline and online configurations differ
- User inputs and compiled offline configuration differ:
 - Compiling the hardware configuration to apply changes
 - Unintentional inputs: "Undo" or re-open project

Advanced Controller

Redundant controller with Safety: CPU 1518HF-4 PN



New PLC: CPU 1518HF-4 PN

- Engineering in STEP 7 Professional (TIA Portal) V17 and STEP 7 Safety
- Safety programming similar to non-redundant fail-safe PLC
- Support of PROFIsafe communication
- Supports flexible F-Link for fail-safe controller/controller communication
- 3rd Ethernet interface (X3) for redundant “north-bound” connection

Benefits

- No additional failsafe PLC required
- High level of availability for applications in combination with Safety

Advanced Controller

CPU 1518 with extended configuration limits



CPU 1518 with existing hardware inf TIA Portal V17:

- **+50%** program memory
- **+200%** data memory

Increase in configuration limits for ET 200 and S7-1500 CPUs:

- 128 UDP multicast circuits for the CPUs 1517/1518
- Increase in the number of blocks for the controllers
CPU 1510SP up to CPU 1515 (including CPU 1513R/1515R)
Details are described in the technical specifications of each CPU

Benefits

Extensions e.g. for the usage of **structured** programming

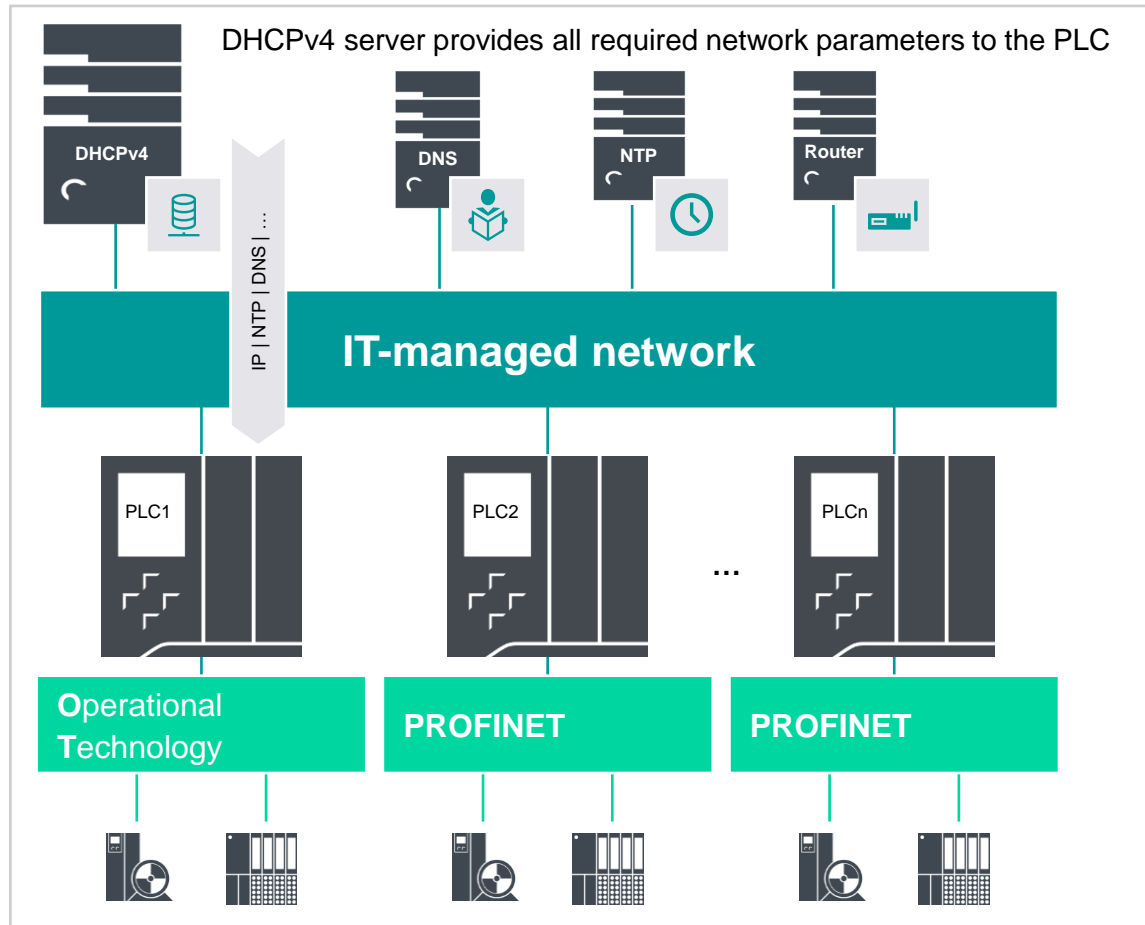
CPU 1518



■ TIA Portal V16 (FW 2.8) ■ TIA Portal V17 (FW 2.9)

DHCP for SIMATIC S7-1500- and ET 200-CPUs

Dynamic assignment of the network configuration



DHCP – Dynamic Host Configuration Protocol

- **New:** The CPU can be connected to an existing network without additional manual configuration of the CPU's network interface.
- **New:** The CPU can request network parameters from a DHCPv4 server according to RFC2131:
 - IP address and subnet mask
 - Default IP router address
- Optional:
 - DNS server addresses
 - NTP server addresses
 - Host and/or domain name¹

Possible application areas

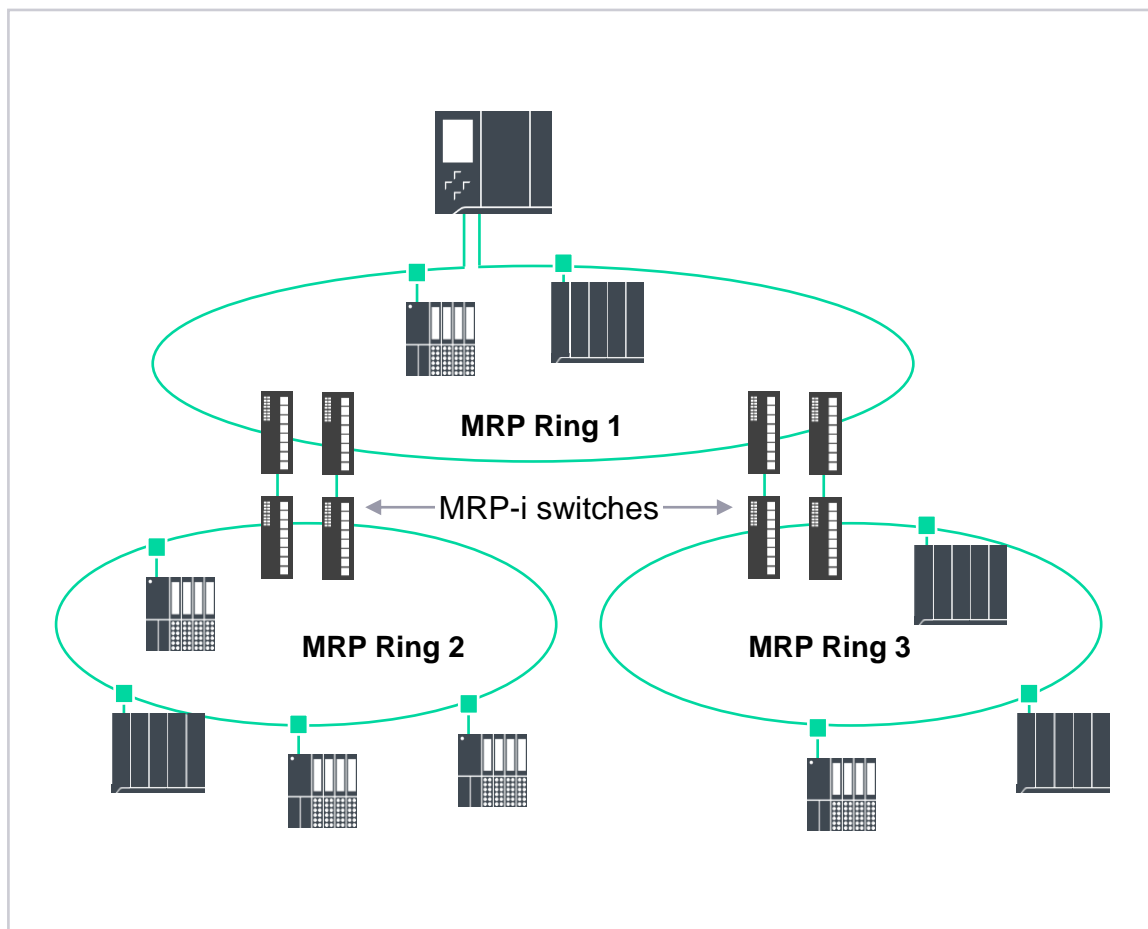
- Use of the CPU in IT-managed networks.
- Modular design of production plant (plug & produce)

Requirement: TIA Portal V17, CPU FW V2.9

¹ Parameters can also be supplied to the DHCP server by the CPU

SIMATIC S7-1500- and ET 200-CPUs – highlights with FW 2.9

Supports MRP Interconnect



MRP (Media Redundancy Protocol) Interconnect switches enable the coupling of multiple MRP rings

- Thanks to the redundant switch architecture, the coupled network is still able to function even if a switch fails.
- Coupling of up to 11 MRP rings.
- Can be used with the following SCALANCE switches: XR500, XM400, XC200, XF204-2BA, XP200

Advantage

In total, more accessible devices can be operated on MRP rings.

Hardware configuration S7-1200 highlights

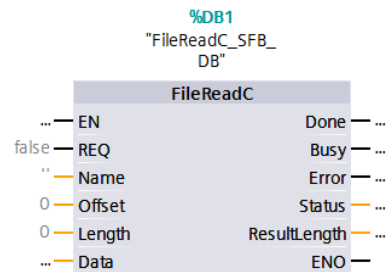


Key data concerning firmware V4.5

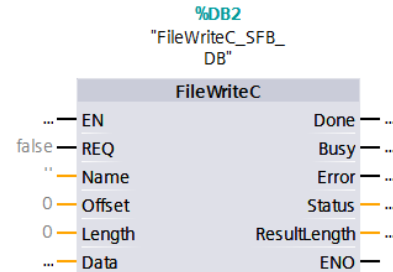
- New web server
- GetSMCInfo
- MRP master functionality for CPU 1215 and 1217
- 14k retentive memory

Import and export of ASCII files (files in binary format) S7-1200 V4.5 in TIA Portal V17

FileReadC



FileWriteC



Function

- Read data from an ASCII file of the SIMATIC memory card, for example
- Write data to an ASCII file onto the SIMATIC memory card, for example
- Deletes a file – "FileDelete"

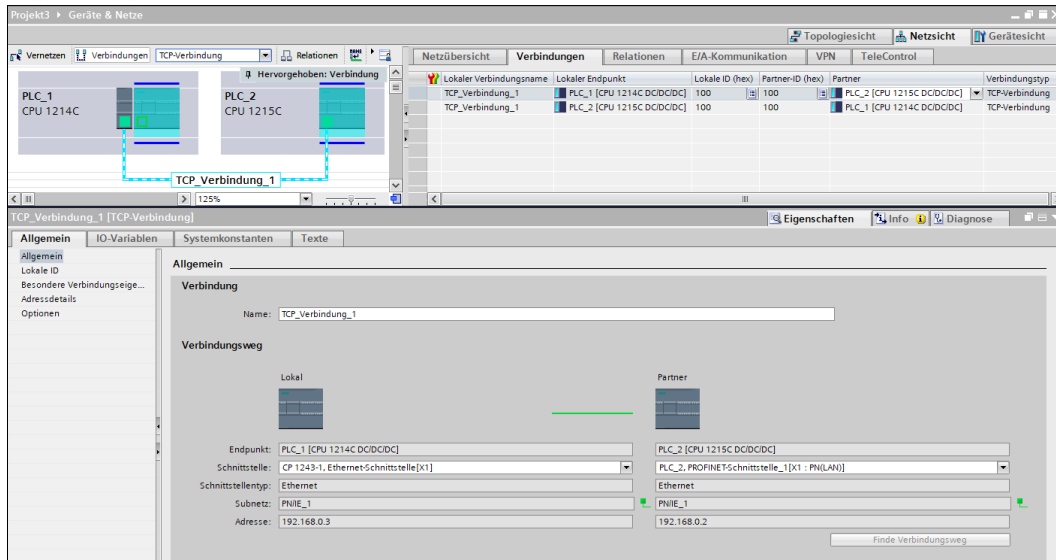
Customer benefits

Complex file structures are used in the free ASCII format on the SIMATIC memory card, e.g. to

- read in recipes for which CSV is not flexible enough
- read in complex parameter assignments or configuration files
- output complex files for documentation



Configured OUC connections S7-1200 V4.5



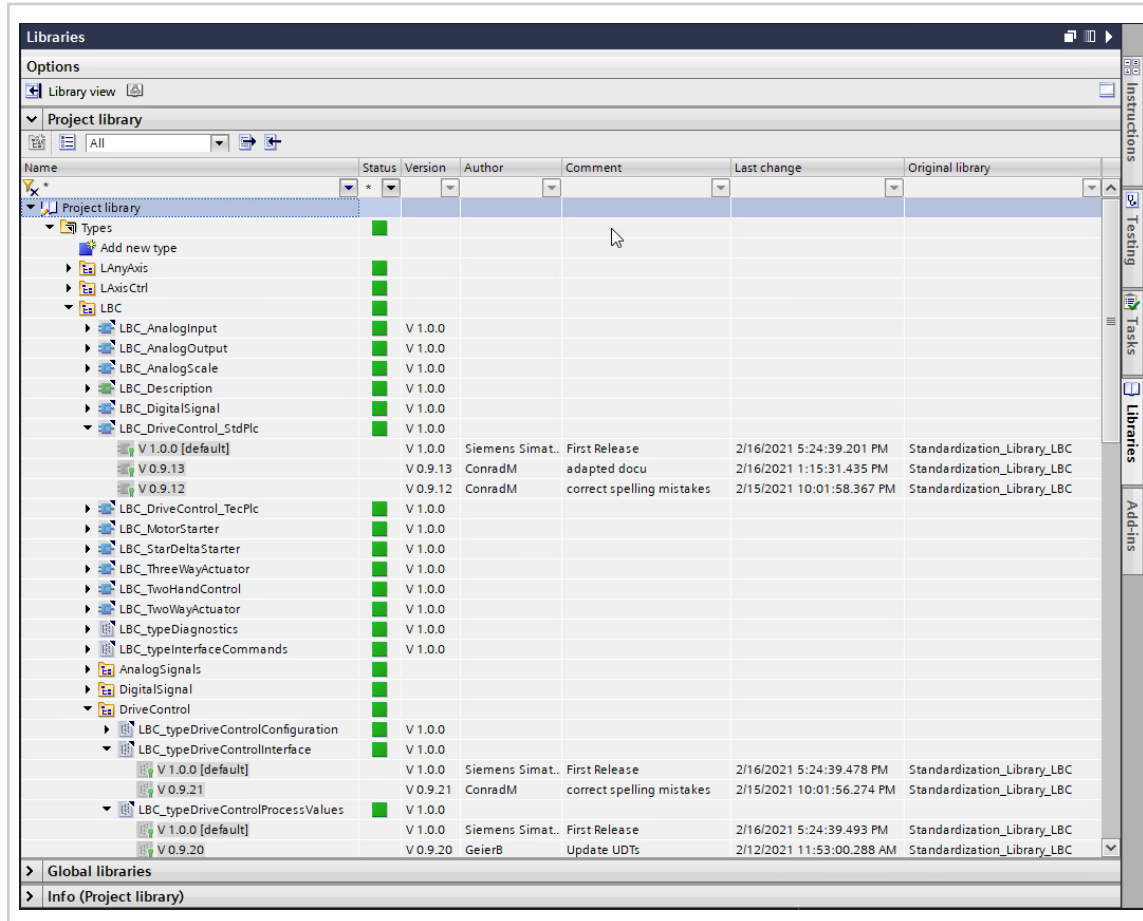
Connection configuration in HWCN for

- TCP
- UDP
- Iso-on-TCP

Enables connection to be established in RUN without TCON or T_DISCON

TIA Portal – system functions

Extended library functions – overview



The screenshot shows the 'Libraries' window in TIA Portal. The 'Project library' is expanded, showing a tree structure of library types. Below the tree, a table lists the details of these types.

Name	Status	Version	Author	Comment	Last change	Original library
Project library						
Types						
Add new type						
LAnyAxis						
LAxisCtrl						
LBC						
LBC_AnalogInput		V 1.0.0				
LBC_AnalogOutput		V 1.0.0				
LBC_AnalogScale		V 1.0.0				
LBC_Description		V 1.0.0				
LBC_DigitalSignal		V 1.0.0				
LBC_DriveControl_StdPlc		V 1.0.0				
V 1.0.0 [default]		V 1.0.0	Siemens Simat..	First Release	2/16/2021 5:24:39.201 PM	Standardization_Library_LBC
V 0.9.13		V 0.9.13	ConradM	adapted docu	2/16/2021 11:15:31.435 PM	Standardization_Library_LBC
V 0.9.12		V 0.9.12	ConradM	correct spelling mistakes	2/15/2021 10:01:58.367 PM	Standardization_Library_LBC
LBC_DriveControl_TecPlc		V 1.0.0				
LBC_MotorStarter		V 1.0.0				
LBC_StarDeltaStarter		V 1.0.0				
LBC_ThreeWayActuator		V 1.0.0				
LBC_TwoHandControl		V 1.0.0				
LBC_TwoWayActuator		V 1.0.0				
LBC_typeDiagnostics		V 1.0.0				
LBC_typeInterfaceCommands		V 1.0.0				
AnalogSignals						
DigitalSignal						
DriveControl						
LBC_typeDriveControlConfiguration		V 1.0.0				
LBC_typeDriveControlInterface		V 1.0.0				
V 1.0.0 [default]		V 1.0.0	Siemens Simat..	First Release	2/16/2021 5:24:39.478 PM	Standardization_Library_LBC
V 0.9.21		V 0.9.21	ConradM	correct spelling mistakes	2/15/2021 10:01:56.274 PM	Standardization_Library_LBC
LBC_typeDriveControlProcessValues		V 1.0.0				
V 1.0.0 [default]		V 1.0.0	Siemens Simat..	First Release	2/16/2021 5:24:39.493 PM	Standardization_Library_LBC
V 0.9.20		V 0.9.20	Geier8	Update UDTs	2/12/2021 11:53:00.288 AM	Standardization_Library_LBC

New functions

Easy development and maintenance of library types

- New filter functions for project library and global libraries
- Logic changes in the control program and comment changes do not require version adjustment of dependent types
- Change of type version behavior
 - The user can define a "default" type version for library types
 - The highest type version is thus no longer mandatory for library actions
 - The library functions (e.g. updating, ...) are executed on the "default" version
- Easy overview of the library status via status display
- Simple updating of selected types via the Global Library

Translating global libraries

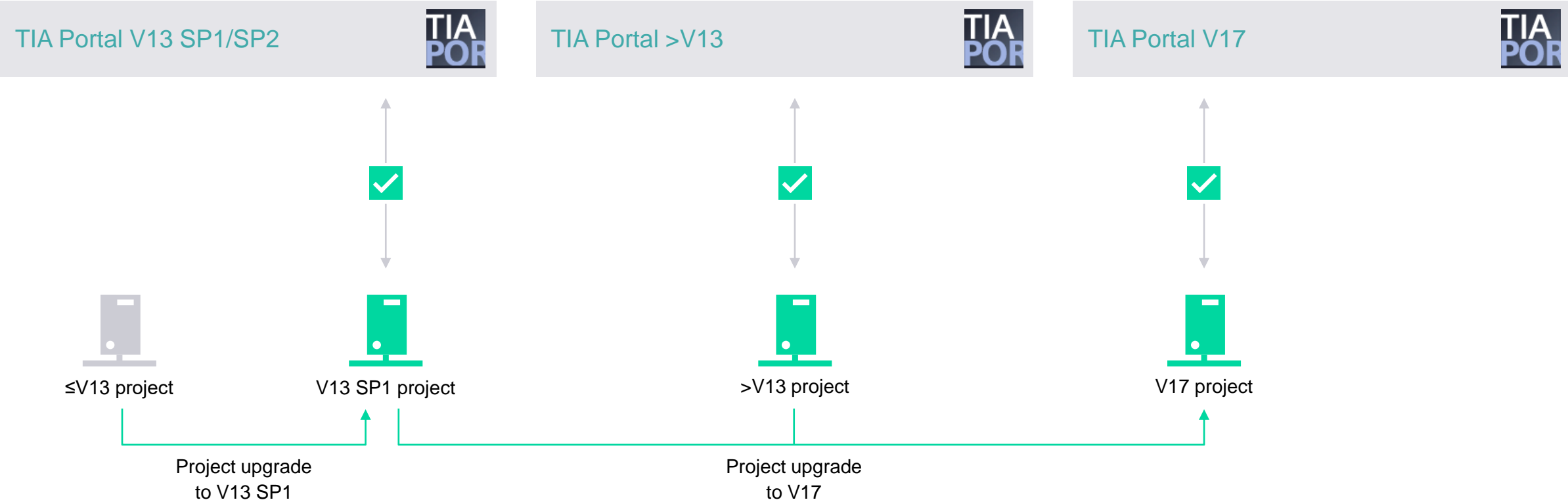
- When importing the translated types, a new version is created

Extended functions for creating copy templates

- When creating copy templates, the folder structures are retained

System functions

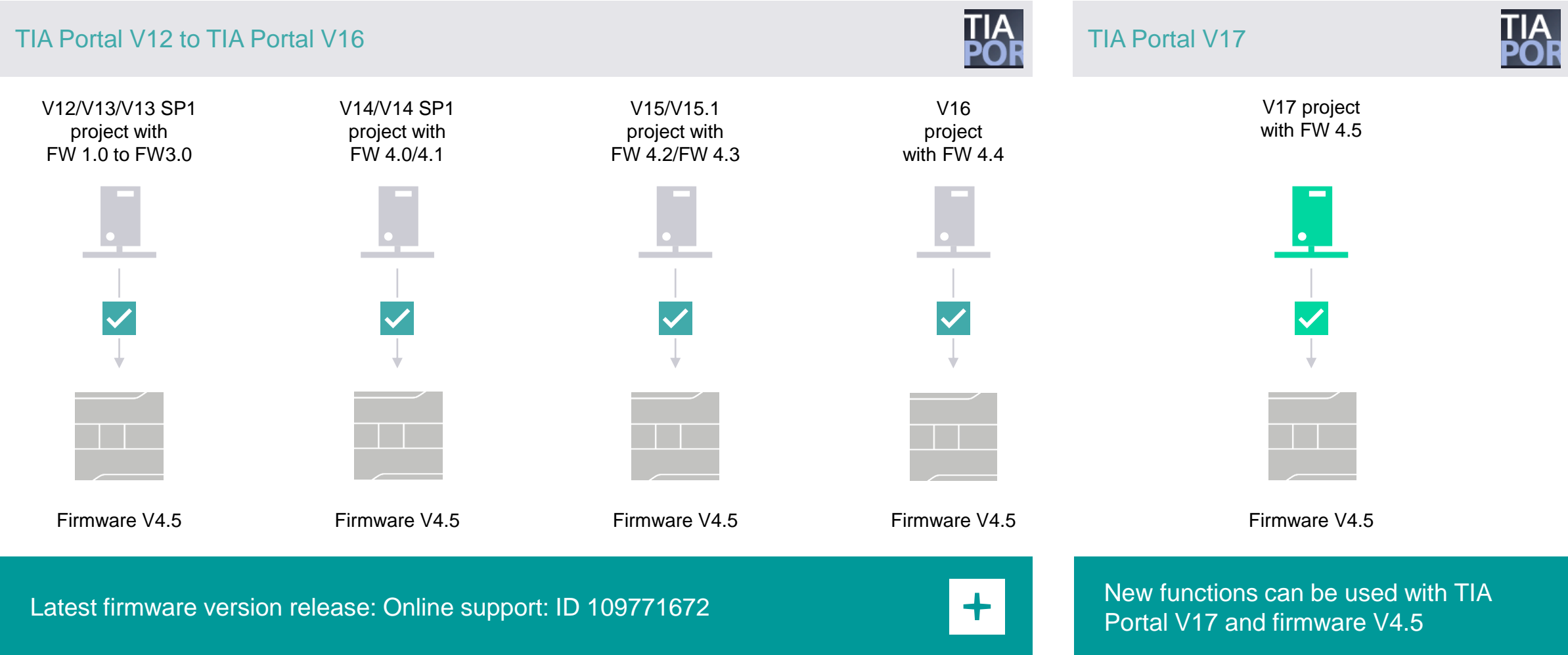
Upgrading projects



Side-by-side installation of V13 SP1/SP2 up to V17 allows access to all project versions.
The V17 license can be used for all available versions from V11.

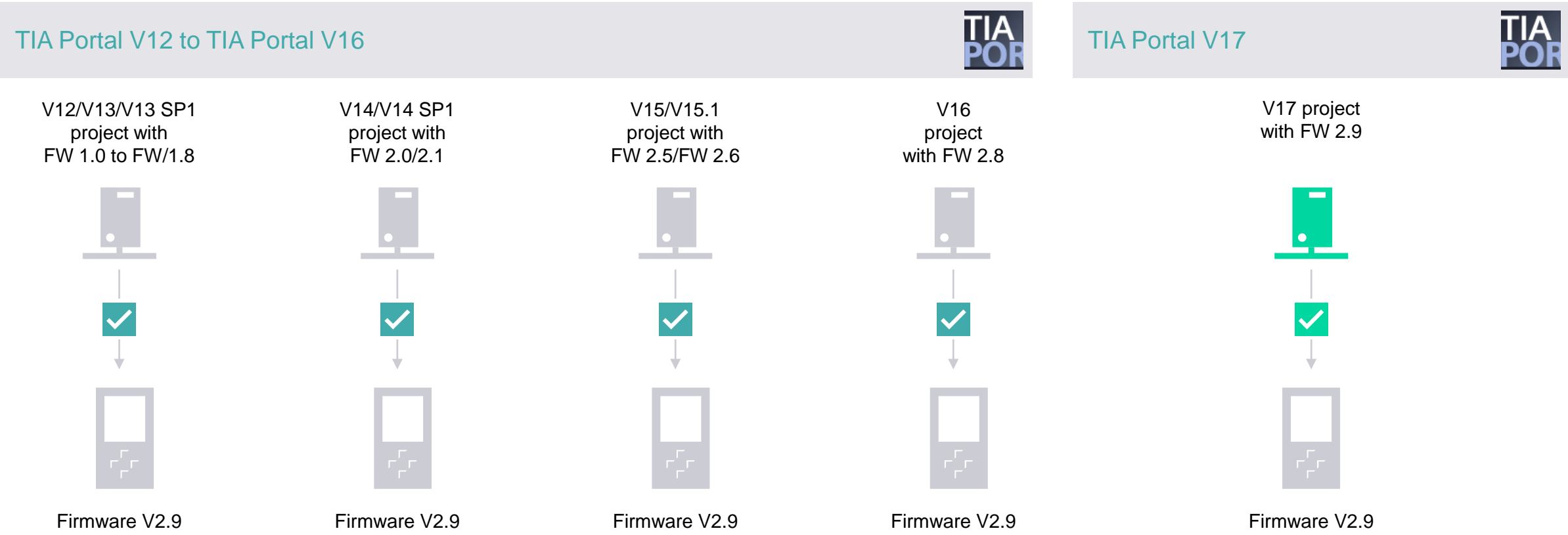
Spare Parts Compatibility

S7-1200 – FW 4.5 with older TIA Portal versions



System functions

Spare parts compatibility S7-1500 and ET 200 CPUs – FW 2.9 with older TIA Portal versions



Full spare part functionality: Online support: ID 109744163

New functions can be used with TIA Portal V17 and firmware V2.9

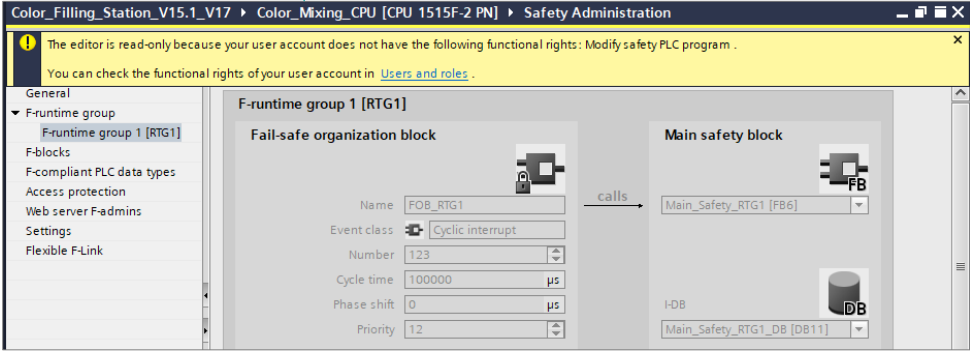
System functions

TIA Portal User Management & Access Control (UMAC)

Configuration of user-roles

Restricts actions and changes in editors

Engineering rights	
Name	Group
<input checked="" type="checkbox"/> Open the project read-only	General
<input checked="" type="checkbox"/> Open and edit the project	General
<input checked="" type="checkbox"/> Monitor PLC program	PLC
<input checked="" type="checkbox"/> Modify PLC program online	PLC
<input checked="" type="checkbox"/> Download PLC	PLC
<input checked="" type="checkbox"/> Edit PLC program	PLC
<input type="checkbox"/> Modify safety PLC program	PLC
<input type="checkbox"/> Edit security device configuration	Security
<input type="checkbox"/> View security device configuration	Security
<input checked="" type="checkbox"/> Edit hardware configuration	General
<input checked="" type="checkbox"/> Modify	HMI
<input checked="" type="checkbox"/> Maintenance	HMI
<input checked="" type="checkbox"/> Download	HMI
<input type="checkbox"/> Manage users and roles	General
<input type="checkbox"/> Upgrade project	General
<input checked="" type="checkbox"/> Edit project via Openness API	General
<input checked="" type="checkbox"/> Import project texts	General
<input checked="" type="checkbox"/> Download to other devices	General
<input checked="" type="checkbox"/> Change library type versions	General



New engineering function rights

The following user actions can be restricted by the new function rights:

- **General function rights:** Edit library types, edit hardware configuration, edit project via Openness API, import project texts, upgrade project
- **PLC:** Download, edit program, edit safety, monitor, modify online
- **HMI:** Download, configure, perform device maintenance
- **Drives:** Download, edit drive configuration

Benefits

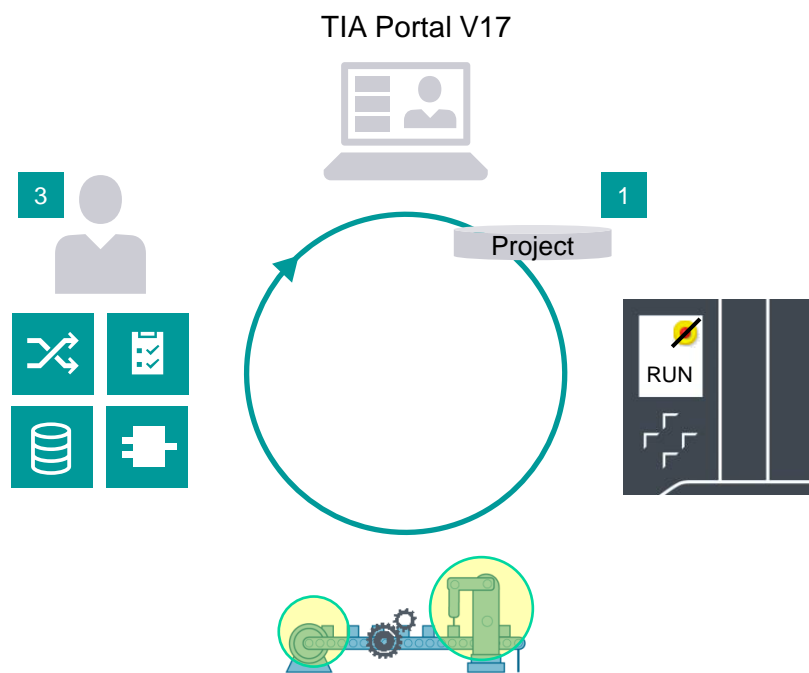
The previous access protection for the TIA Portal project differentiated between read and write access.

With the new function rights, user roles can now be adjusted even more specifically to responsibilities.

In engineering, this protects numerous actions and workflows against unauthorized users.

SIMATIC STEP 7 Safety V17

Fast Commissioning



Fast Commissioning workflow

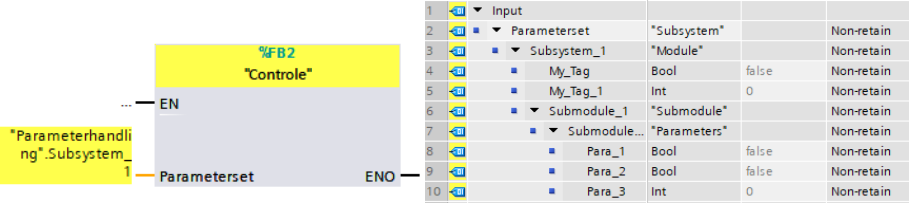
1. Download prepared project to controller.
2. Deactivate Safety mode and activate Fast Commissioning mode
3. Perform adjustments in safety program during operation
4. Finalize project by full compile
5. Final download of the safety program
6. Activation of Safety mode and re-initialization by STOP – START transition of CPU

Benefits

- Increased efficiency when commissioning the safety program
- Shorter compile times during commissioning
- Adjustments of safety program during deactivated safety mode
- More control due to time limitation of deactivated Safety mode

SIMATIC STEP 7 Safety V17

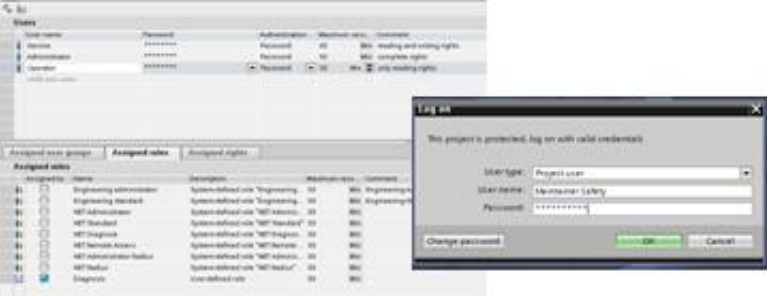
1.



2.

Description	Used and compiled	Function in safety program	Offline signature
Program blocks			
FOB_RTG1 [OB123]	Yes	F-OB	0xA7482493
Main_Safety_RTG1 [FB1]	Yes	F-FB	0xF308B915
FFB_used_DB [DB3]	Yes	I-DB for F-FB	0x27E959F6
Main_Safety_RTG1_DB [DB1]	Yes	I-DB for F-FB	0x27E959F6
tmp			Not available.
unused			0x7B3E1951
FFC_unused [FC1]	Yes	F-FC	0xD379BA50
FDB_unused [DB2]	Yes	F-DB	0x27E959F6
used			0x9B96C7CD
FFC_used_5 [FC7]	No	F-FC	Not available.

3.



1. Nested F-compliant PLC data types

Optimum structuring of data in the safety program can now be achieved by creating F-compliant data types up to a nesting depth of 8. All data types allowed in the safety program can be used as F-PLC data.

2. Group signature

Changes in structure of safety program can be localized more quickly. Acceptance procedures can do more efficiently by comparing the group signature of the changed and the already accepted safety program.

3. UMAC

It's possible to realize access protection for the F-program based on user-specific/role-specific UMAC rights.

Acknowledgment of failsafe warn cycle time

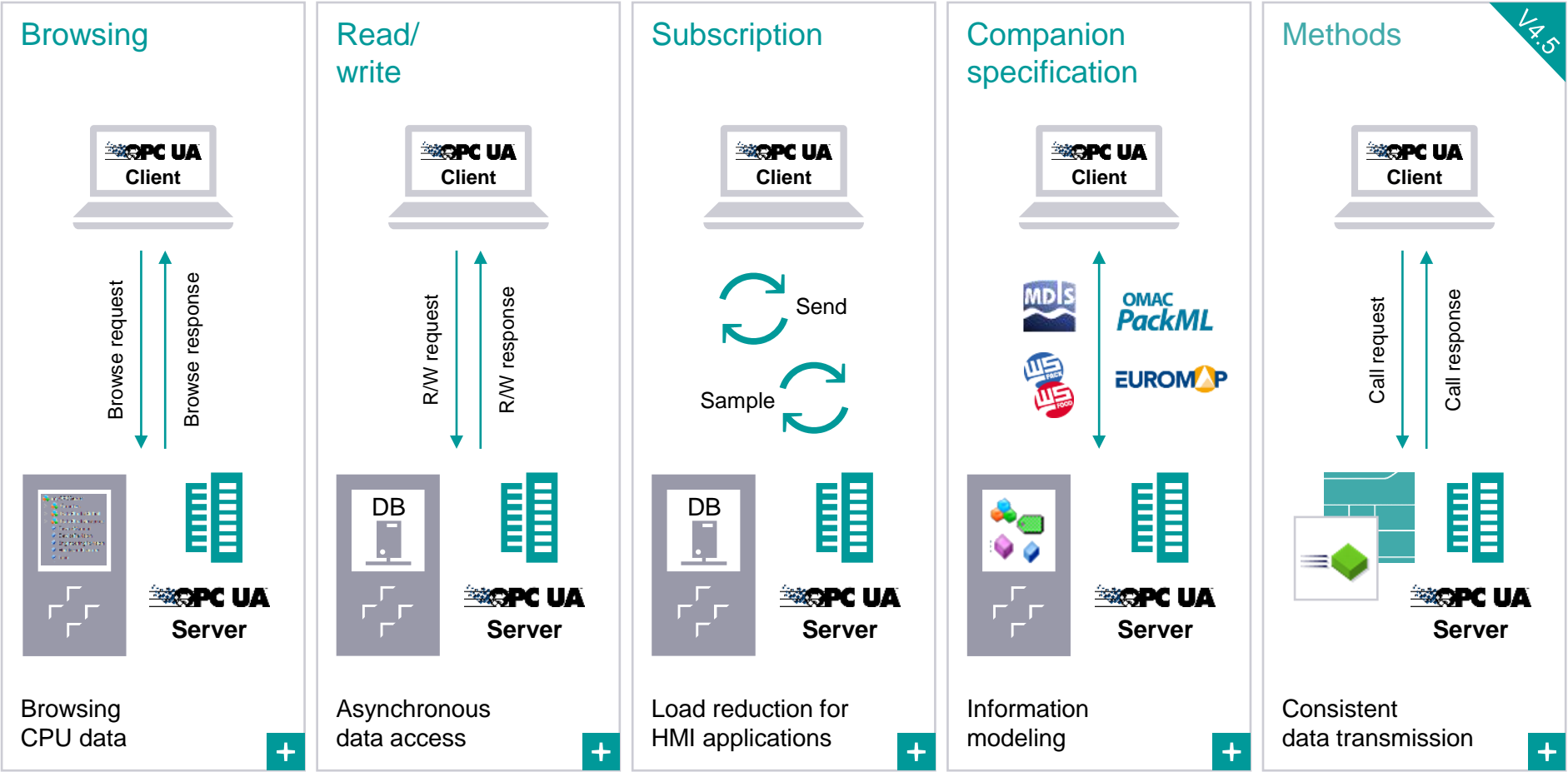
With block ACK_FCT_WARN it's possible to acknowledge the message for exceeding failsafe warn cycle time.

Think green – paperless safety printout

The requirement concerning handling the safety printout has been modified in the manual and now allows paperless storage and archiving – which means a paper printout is no longer necessary.

OPC UA - Extended range of functions

S7-1200 V4.5



Support of

- OPC UA Server diagnostics in TIA Portal
- Structured data types and arrays

OPC UA

S7-1500 – server interface modeling in TIA Portal

OPC UA server interface

Name	Node type	Access level	Local data
Server interface_1	Interface	---	
Robot_Object	Object	---	
Robot_Type	Byte	RD	"Robot"."Jobs"."Type"
Robot_Reference	Byte	RD	"Robot"."Jobs"."Reference"
Robot_Jobs	RobotJob	RD	"Robot"."Jobs"
Used	Bool	RD	"Robot"."Jobs"."Used"
Type	Byte	RD	"Robot"."Jobs"."Type"
Reference	Byte	RD	
Started	Bool	RD	
Error	Bool	RD	
Done	Bool	RD	
<Add new>			

OPC UA Elements

Project data
Software units
Program blocks
Robot [DB1]
RobotName
MoveEnable
ReleaseProd
Jobs
Used
Type
Reference
Started
Error
Done
Screw [DB2]
Valve [DB3]
Technology objects

1. Creating objects and folders
2. Using drag-and-drop with PLC elements
3. Using drag-and-drop with entire nodes

OPC UA highlights for SIMATIC S7-1500 and ET 200 CPUs

OPC UA server – Alarms & Conditions

PLC_4 [CPU 1516-3 PN/DP]

Properties

GeneralIO tagsSystem constantsTexts

Entry page

Overview of interfaces

Display

Multilingual support

Time of day

Protection & Security

OPC UA

General

Server

General

Options

General

Accessibility of the server

Activate OPC UA server

'Alarms And Conditions'

Enable 'Alarms And Conditions' on the OPC UA server

Allow message acknowledgment by OPC UA client

Events

AlarmsEvent History

A

C

Time

Severity

Server/Object

SourceName

Message

EventType

Active

14:14:55.884

500

Quickstart Alar...

Internal

Events Raised

AuditEventType

14:14:55.884

500

Quickstart Alar...

EastTank

The alarm severity has increased.

NonExclusiveLevelAlarmType

LowActive

14:14:55.884

500

Quickstart Alar...

NorthMotor

The alarm severity has increased.

ExclusiveDeviationAlarmType

High

14:14:55.884

500

Quickstart Alar...

SouthMotor

The alarm severity has increased.

TripAlarmType

Active

14:14:56.898

500

Quickstart Alar...

Internal

Raising Events

SystemEventType

14:14:56.898

500

Quickstart Alar...

Internal

Events Raised

AuditEventType

14:14:57.912

500

Quickstart Alar...

Internal

Raising Events

SystemEventType

14:14:57.912

500

Quickstart Alar...

Internal

Events Raised

AuditEventType

14:14:57.912

900

Quickstart Alar...

EastTank

The alarm severity has increased.

ExclusiveDeviationAlarmType

High

14:14:57.912

900

Quickstart Alar...

WestTank

The alarm severity has increased.

TripAlarmType

Active

14:14:57.912

900

Quickstart Alar...

SouthMotor

The alarm severity has increased.

NonExclusiveLevelAlarmType

LowLowActive

Details

Name

Value

Identifier

1:Metals/SouthMotor/Silver

AckedState/Id

False

ActiveState

"en-US", "Active"

ActiveState/EffectiveDisplayName

"en-US", "LowActive"

ActiveState/Id

True

ConditionName

Silver

ConfirmedState/Id

False

EventId

len=16, 0xf43d7759d2d0f4438a08baf449d7583f

EventType

ModelId

Message

"", "The alarm severity has increased."

Retain

True

Severity

500

SourceName

SouthMotor

Time

14:14:41.682

CPU messages can be transferred to OPC UA clients

Supported SIMATIC alarm types

- Programmed alarms/messages
- ProDiag messages
- System events

Per subscriptions Alarms, Conditions & Events can be subscribed by the client.

Program messages incl. associated values are provided by the OPC UA server.

Alarms requiring acknowledgement can be acknowledged from the OPC UA client (can be deactivated).

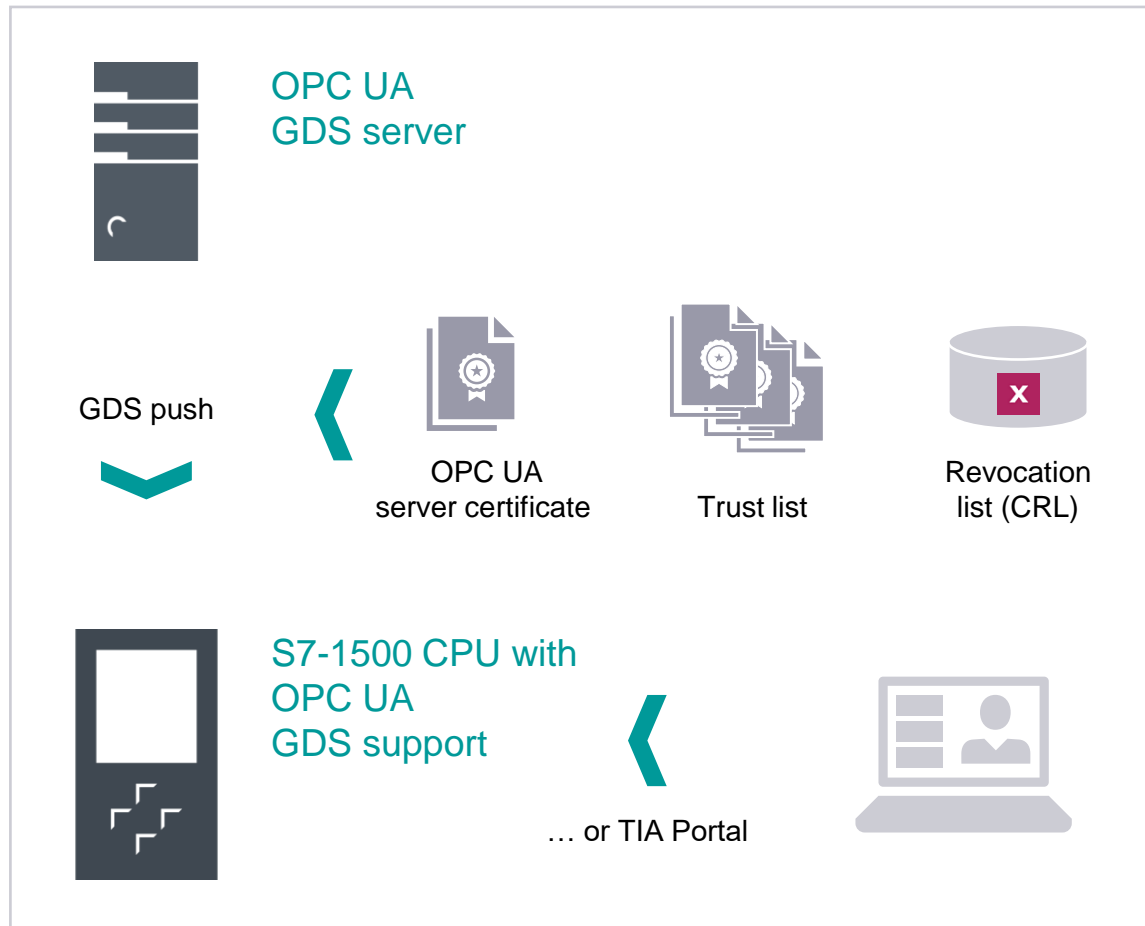
A "message burst" is displayed as "overload" and messages can be refreshed from the client.

Number of simultaneous messages:

PLC Type	Small	Middle	Big
System Diagnostics	50	100	200
Program Alarms	100	200	400

OPC UA for Advanced and Distributed Controller

Certificate management via OPC UA



- ✓ Certificate update during running
 - ✓ Supports CRLs (revocation lists)
 - ✓ Access protection for certificate management
 - ✓ Commissioning mode
- Currently only for OPC UA and internal CPU interfaces, later also for other services and CP/CMs

PLCSIM V17

Improvements in the new version



Compatibility maintained

- Compatible with TIA Portal V17 and projects from versions V14 to V17
- Support of user-defined protection of configuration data from TIA Portal
- Supports S7-1500 CPU firmware versions V1.8 – V2.9
- Supports S7-1200 CPU firmware versions up to V4.5

Functionality extended

PLCSIM now supports the TIA Portal multilingual concept thanks to the subsequent loading of additional languages

CPU support extended

The control code for the following SIMATIC PLCs can now be loaded directly and simulated with PLCSIM

- SIMATIC Drive Controller 1504 D TF and 1507 D TF
- SIMATIC ET 200pro CPUs
- SIMATIC S7-1500 H(F)/R CPUs
- SIMATIC CPU 1518 T/TF
- SIMATIC S7-SIPLUS CPUs
 - Equivalents of the supported standard CPU types

Performance improved

Improvements in user performance and memory usage thanks to removal of the redundant device view in PLCSIM. Customers use the device view in TIA Portal.

S7-PLCSIM Advanced V4.0

Supports SIMATIC S7-1500 R/H systems

Redundant – S7-1500R



Highly available – S7-1500H/HF



CPU 1513R	CPU 1515R	CPU 1517H	CPU 1518 H/F
✓	✓	✓	✓
–	–	–	✓
6ES7513-1RL00-0AB0	6ES7515-2RM00-0AB0	6ES7517-3HP00-0AB0	6ES7518-4JP00-0AB0

Consistent concept– Identical simulation mode

- Using **the original project** allows the simulation to be performed in RUN solo mode **without**
- The "ECPUType" API function has been expanded to include the new PLC family S7-1500 R/H and the order numbers.
- The control panel has been expanded to include the new "S7-1500R/H" PLC family.



CPU type
Primary (RUN solo)
Safety
Article numbers

S7-PLCSIM Advanced V4.0

Enhanced PLC Support SIMATIC ET 200pro



Function

S7-PLCSIM Advanced V4.0 support from now on also the simulation of the PLCs side of SIMATIC ET 200pro PLC based on S7-1500.

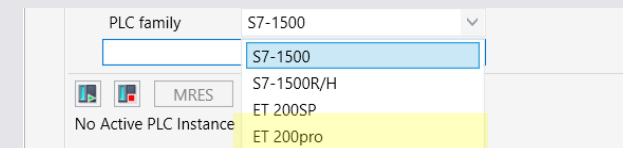
Supported PLCs

S7-PLCSIM Advanced V4.0 supports now the following SIMATIC ET200 pro Controller:

- **CPU 1513pro-2 PN** | 6ES7513-2PL00-0AB0
- **CPU 1516pro F-2 PN** | 6ES7516-2PN00-0AB0
- **CPU 1516pro-2 PN** | 6ES7513-2GL00-0AB0
- **CPU 1516pro F-2 PN** | 6ES7516-2GN00-0AB0

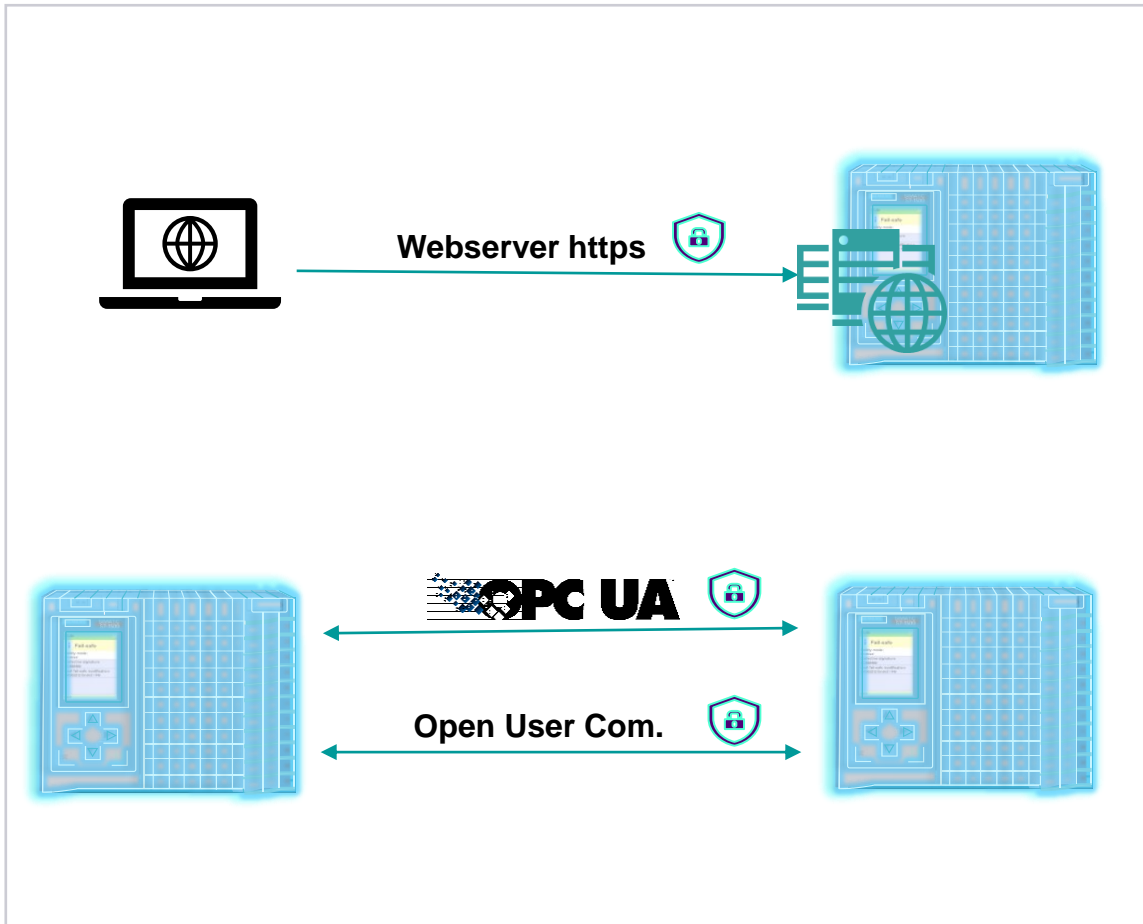
Details

- By using the original project, the simulation can be carried out without changing the program.
- The “ECPUType” API function has been expanded to include the “ET 200pro” PLC family and the order numbers.
- The control panel has been expanded to include the new "ET 200pro" PLC family.



S7-PLCSIM Advanced V4.0

Simulation of secured communication connections



Function

Expansion of the communication options to include secure connections analogous to the hardware CPU with firmware version V2.9 and STEP 7 V17

OPC UA

- Secured OPC UA connections

Webserver

- https – now also simulation of projected https connections
- Webserver User Management is supported

„**open user communication**“ (secured TCP communication)

- New instructions TSEND_C / TRCV_C and secured TCON

Details

Secure communication

TIA Portal V17 projects with V17 CPU firmware version V2.9 can also be loaded and executed on the S7-PLCSIM Advanced in secure, encrypted mode. This means that safe communication can be tested in the virtual controller without making changes to the automation project.

Compatibility mode

TIA Portal V17 projects with firmware versions V1.8-V2.8x can still be simulated in the previous mode.

S7-PLCSIM Advanced V4.0

New delivery form and new helpful SIOS articles



Yearly Software Subscription Service

New

- New Order number 6ES7823-1FE00-0YN5 (SW-Download)
- Year / monthly billed / automatic extended
- Also within SISW Sales channel orderable and to combine with DI SW Products
- Pricebook #: **PLCSIM365** 1 Year Subscription

New helpful SIOS articles

- [How can you communicate with S7-PLCSIM Advanced in the cloud?](#)
- [SIMATIC Virtual Commissioning of the Multi-Carrier-System](#)
- [How many PLC instances can you simulate with S7-PLCSIM Advanced on an ESXi CPU core?](#)
- [Digitalization with TIA Portal: Virtual Commissioning with SIMATIC and Simulink](#)
- [How to simulate a S7-1200 PLC with TIA Portal S7-PLCSIM & SIMIT in Co-Simulation](#)

Advantages

- Can be canceled annually
- Automatic contract renewal
- Software update service
- Easy start for new customers
- Low entry barrier

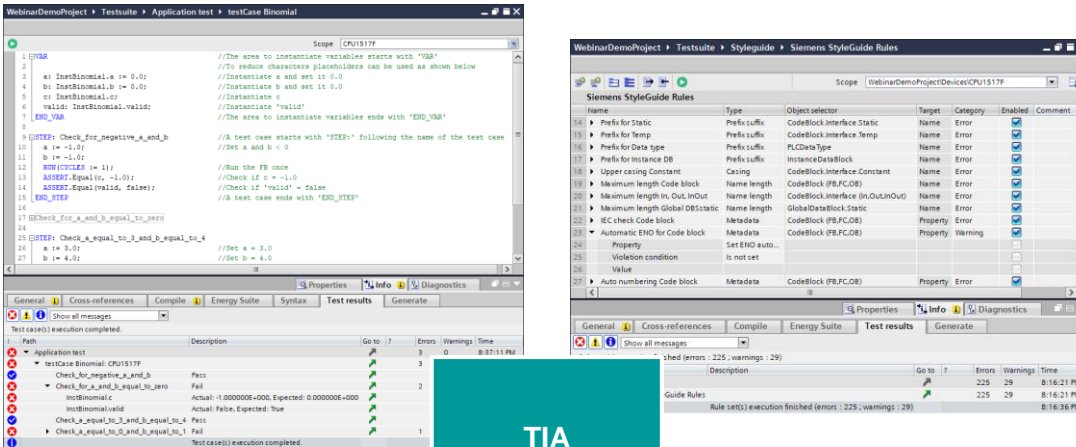


Advantages

- Always new tips and tricks about virtual commissioning

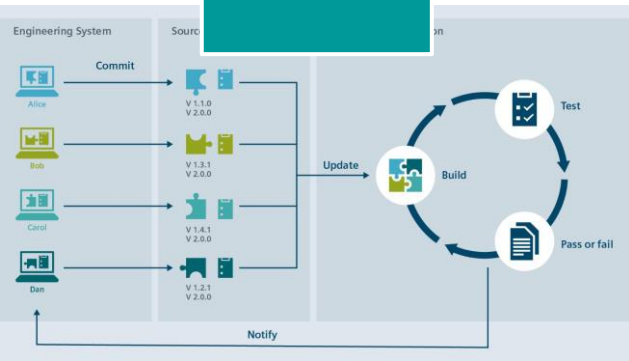
TIA Portal Test Suite Advanced V17

Openness support



The screenshot displays two windows from the TIA Portal Test Suite Advanced V17. The left window, titled 'WebinarDemoProject - Testsuite - Application test - testCase Binomial', shows a test case script with comments and execution results. The right window, titled 'WebinarDemoProject - Testsuite - Styleguide - Siemens StyleGuide Rules', shows a list of style guide rules with columns for Name, Type, Object selector, Target, Category, Enabled, and Comment. A teal box with the text 'TIA Portal Openness' is overlaid on the test results table.

TIA Portal Openness



The diagram illustrates the TIA Portal Openness workflow. It shows an 'Engineering System' with four users (Alice, Bob, Carol, Dan) committing their work. The work is then updated to a central 'Source' system. The workflow includes 'Commit', 'Update', 'Build', 'Test', and 'Pass or fail' steps, with a 'Notify' step at the end.

Function

Openness support for the following functions

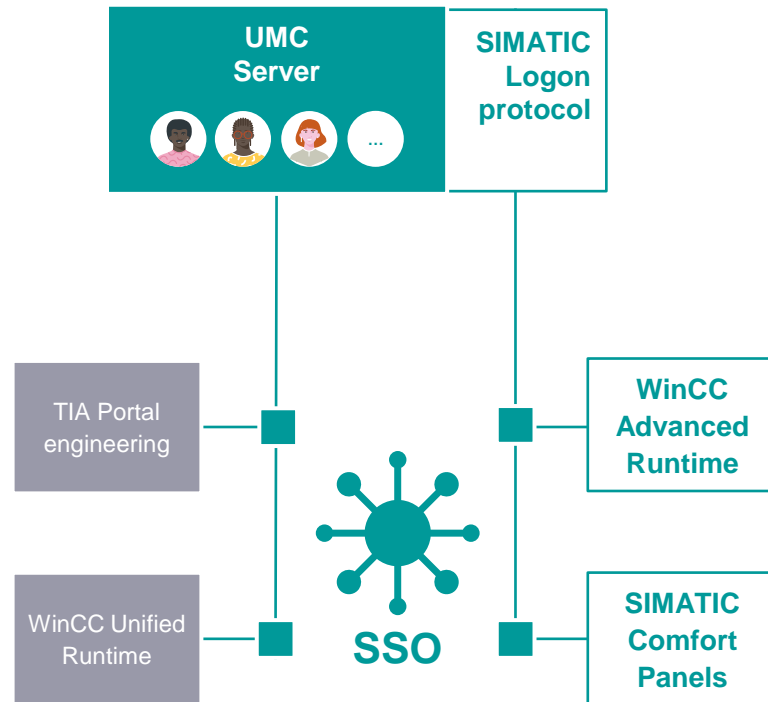
- XML/ASCII file export and import for rule sets and test cases
- Export and import from libraries (master copies)
- Running of style guide checker and application test
- Test results are provided as .NET objects in the Openness application and can thus be exported with a user-defined export format.

Customer benefits

- Supports continuous integration workflows
- Export of test results in customized file reports

Central user management (UMC)

Overview of new functions (from UMC V2.9 SP3)



SIMATIC Logon support

- The UMC server supports the SIMATIC Logon protocol
- This enables central user management for WinCC Runtime Advanced and Comfort Panels via UMC

Benefits

Integration of the SIMATIC Logon protocol enables use of an existing HMI Runtime system within a UMC domain.

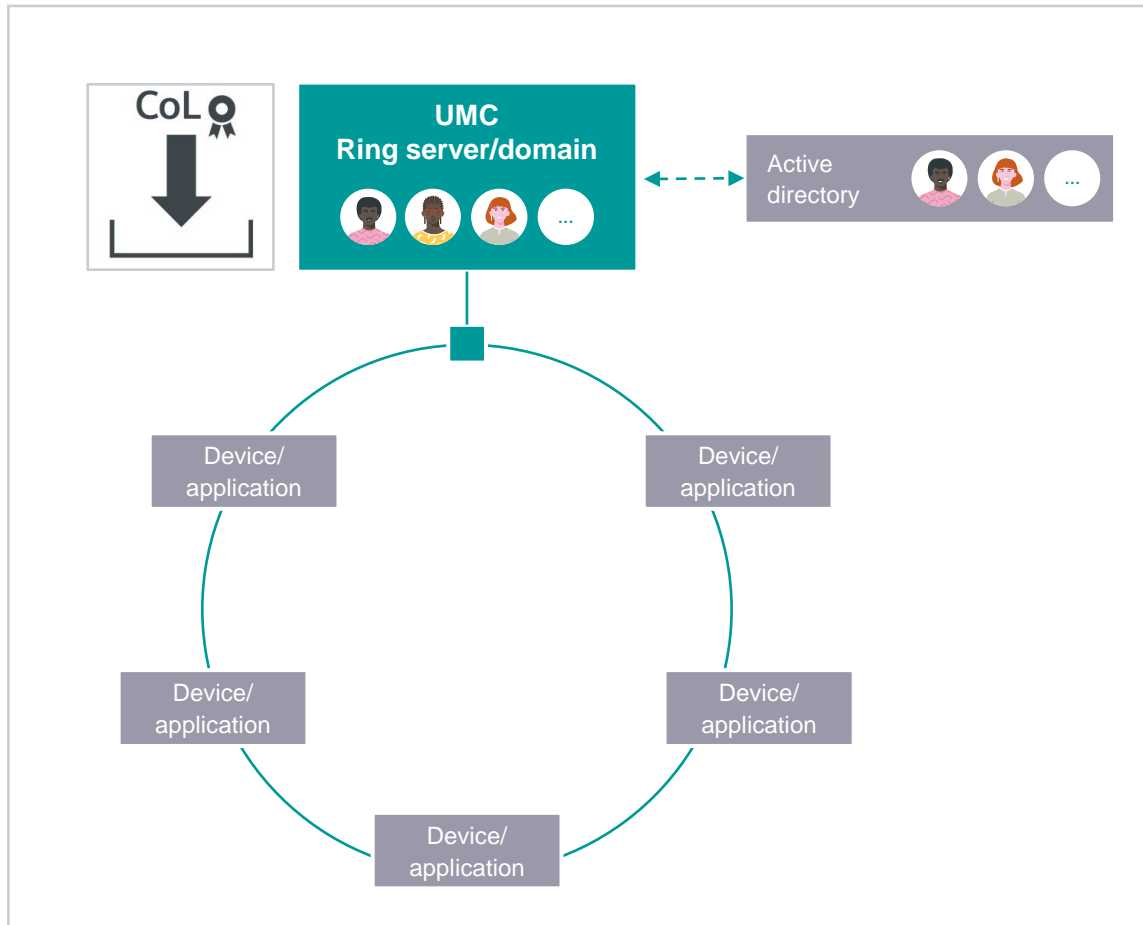
Single sign-on (SSO)

- TIA Portal and HMI Runtimes support the connection to single sign-on

Benefits

Single sign-on enables seamless authentication between a protected TIA Portal project and an HMI Runtime on the same operator station. Once authenticated, the application can take over the existing single sign-on user session.

Central user management (UMC) Licensing



License model

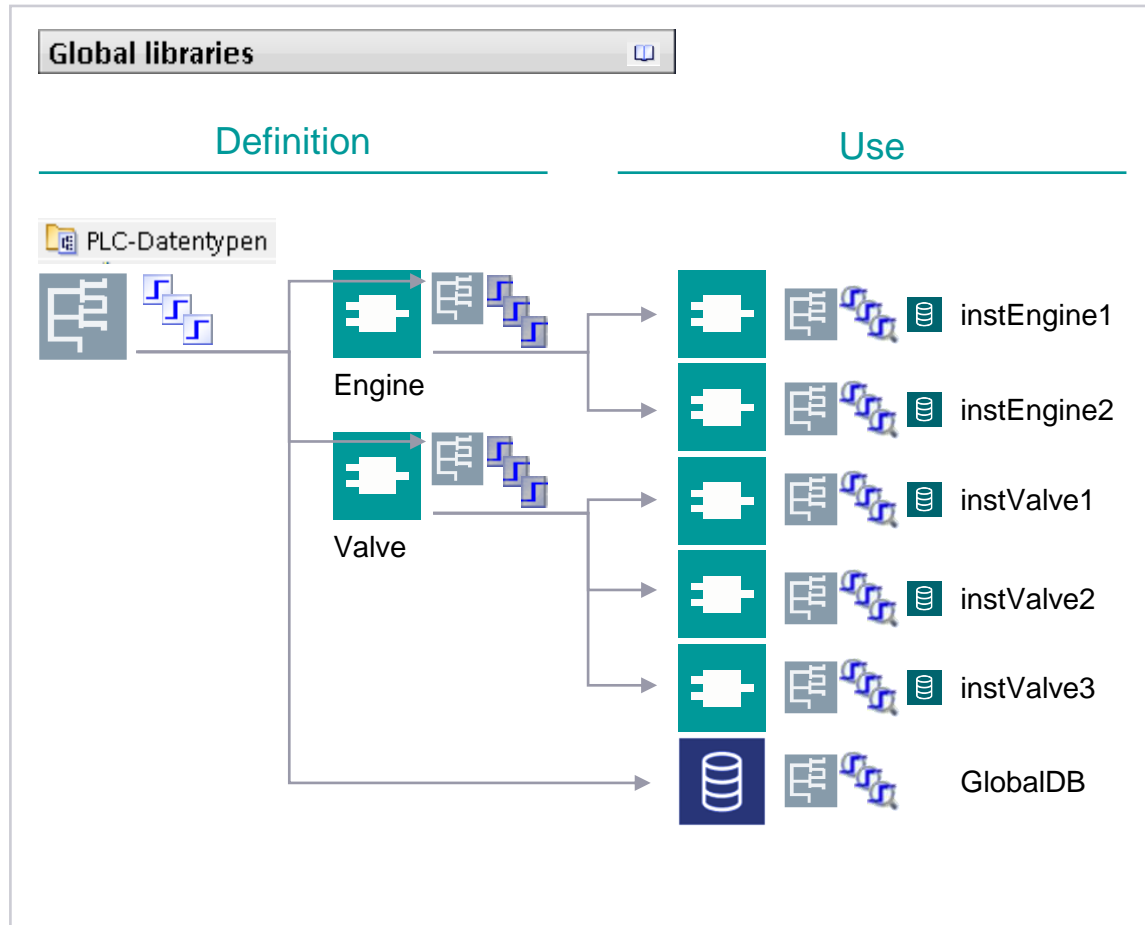
- The User Management Component (UMC) is included in the products' scope of supply
- The license model depends on the number of user accounts per UMC domain
- Up to ten user accounts can be created without a license
- Additional 100 user accounts as 365-day license
 - Article number: 6ES7823-1UE30-0YA0
- Additional 4000 user accounts as 365-day license
 - Article number: 6ES7823-1UE10-0YA0
- The licenses can be accumulated

Benefits


- First steps possible without license costs
- Appropriate license for low number of user accounts
- Flexible expandability with accumulative licenses
- Flexible adjustment thanks to limited license period

TIA Portal options – ProDiag

Comprehensive extension of functions – supervisions in PLC data types



 = editable supervision function at the type

 = supervision function is in a subordinate object

 = actual supervision instance (with supervision code)

Function

- Supervisions within the PLC data types now enable a comprehensive type instance concept for process diagnostics
- Changes now only necessary in one place!
- A ProDiag supervision does not necessarily need to be assigned to instances of PLC data types (then no diagnostic function available)
- Additional supervisions are possible at the point of use for the PLC data type so that further diagnostics are available for instance-specific needs.

Customer benefits

- Time-saving possible thanks to central management of supervisions, e.g. in the library
- Fewer sources of error as there is no manual definition of supervisions at the places where data types are used.

TIA Portal options – ProDiag

Extended functions – usability – new icons for better orientation

UDT TYPE WITHOUT SV

Name	Data type	Supervision
UDT TAG 1	Bool	
UDT TAG 2	Bool	
UDT TAG 3	Bool	

UDT TYPE WITH SV

Name	Data type	Supervision
UDT TAG 1 SV	Bool	
UDT TAG 2 SV	Bool	
UDT TAG 3 SV	Bool	

Default tag table

	Name	Data type
1	▶ TAG 1	"UDT TYPE WITHOUT SV"
5	▶ TAG 2	"UDT TYPE WITH SV"
9	<Add new>	

Default tag table

	Name	Data type	Supervision
1	▼ TAG 1	"UDT TYPE WITHOUT SV"	
2	UDT TAG 1	Bool	
3	UDT TAG 2	Bool	
4	UDT TAG 3	Bool	
5	▼ TAG 2	"UDT TYPE WITH SV"	
6	UDT TAG 1 SV	Bool	
7	UDT TAG 2 SV	Bool	
8	UDT TAG 3 SV	Bool	
9	<Add new>		

local definitions

Function

- With the introduction of the supervisions in PLC data types in particular, the new icons' purpose is to improve orientation
- The supervisions are now also marked with icons in the instances; the properties of the supervisions themselves on the Property page
- In contrast to the previous version, it quickly becomes apparent whether blocks called within the multi-instance contain supervisions. This is especially true with multi-instances.

Customer benefits

Improved overview compared to previous version of the places where ProDiag supervisions are used

Supervision definition
(PLC data type, FB)

Nested supervision
(defined in subordinate object)

Supervision instance
(tag table, shared DB, I-DB)

TAG supervision
(tag table, global DB)



Webbinarium 1: TIA Portal V17 med PLC i fokus

Datum och tid: 26 november 10:00–10:45

Step 7 – vi går igenom nyheter på hårdvara och funktioner i mjukvaran. Denna version har ett stort fokus lagts på datasäkerhet till exempel kryptering av PLC så att ingen obehörig kommer åt den. Några andra nyheter vi kommer gå igenom:

- Det har kommit två nya editorer, CFC och Case Effect Matrix.
- TIA Portal har släppts för fler betalmodeller. Idag kan man hyra TIA Portal istället för att köpa den vilket underlättar kassaflödet i företaget.
- Siemens har släppt den första S7-1500 cpu:n som både är redundant och felsäker. Den är perfekt att använda till tunnlar och broar där man behöver både failsafe och redundans.



Webbinarium 2: TIA Portal V17 med WinCC Unified i fokus

Datum och tid: 1 december 10:00–10:45

"WinCC Unified more flexible than ever" – använd ett och samma HMI-system oberoende applikation, storlek, ändamål och plattform (panel eller Scada). Några av nyheterna vi kommer gå igenom är:

- Använd din befintliga PLC ihop med WinCC Unified (View of things).
- Förbättringar i TIA Portal för konfiguration.
- Mera OPC UA.
- Central användarhantering.



Webbinarium 3: TIA Portal V17 med Motion Control i fokus

Datum och tid: 10 december 10:00–10:45

Detta webinarium kommer handla om nyheter inom Motion Control och drivteknik. Exempel på ämnen som kommer tas upp är:

- Support av hårdvara.
- Funktionsutökningar i Startdrive.
- Nyheter i Step 7 rörande Motion Control.
- Ny kraftfull T/TF CPU för krävande Motion Control.
- Safe Kinematics med nya spännande funktioner för att göra din robotapplikation ännu säkrare.
- Optimera din drive med one button tuning och för över reglerparametrar till teknologiobjektet.

| Contact

Ralf Folke
Produkt- och marknadsansvarig
Advanced automation
Siemens AB
Malmö
Tel: 040-59 25 21
E-mail: ralf.folke@siemens.com

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