TIA Portal V17 – Novedades

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TIA Portal
Highlights of TIA Portal V17

- **TIA Portal Novedades V17**
- **S7-1500 FW 2.9**
- **S7-1200 FW 4.5**
- **S7-1500 R/H FW 2.9**
- **Seguridad en TIA Portal V17**
- **Novedades en los Addons**

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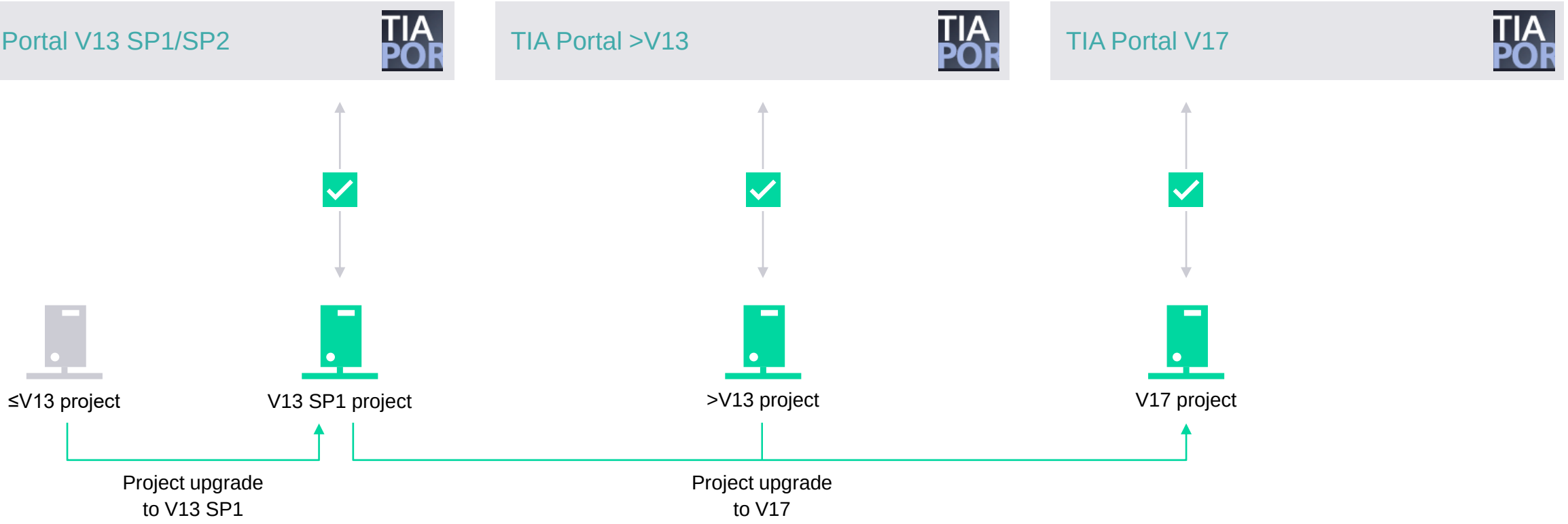
TIA Portal V17
Upgrading projects



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.

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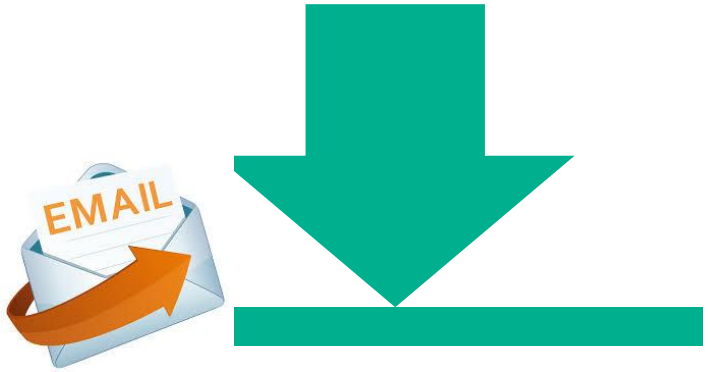
TIA Portal V17
Licencias - Modalidades de suministro Software/SUS

Versión completa
Para uso en producción (con CoL)

Suministro ONLINE



- Con cuenta de usuario y contraseña en SIOS
- Descarga vía OSD con el ALM
- Indicar dirección de correo electrónico de quién hará la descarga

Suministro físico

- El SW se remite a la dirección postal indicada en el momento del pedido.

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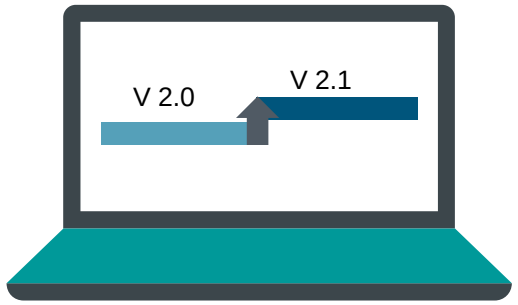
TIA Portal V17

Licencias - Diferencias entre un update, service pack y un upgrade

Update

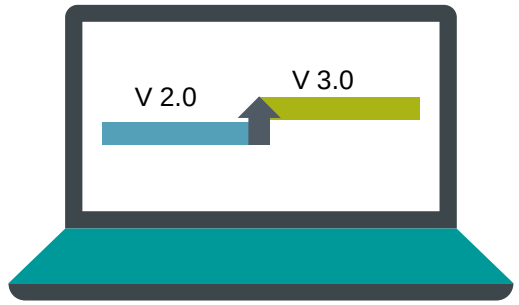
Las actualizaciones eliminan posibles errores del programa y cierran cualquier brecha de seguridad

Service pack



Service packs contienen una compilación de actualizaciones y funciones adicionales para actualizar productos de software

Upgrade



Las nuevas versiones de programas o actualizaciones proporcionan una gama ampliada de funciones. El SUS suministra las actualizaciones de forma gratuita dentro del periodo de vigencia

40% del PVP

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TIA Portal V17
Licencias - ¿Qué es un SUS?

Con la compra del Software Update Service

Recibirá todas las actualizaciones de su software SIMATIC gratis durante un año.

Requisito	Necesaria la última licencia del software
Precio	Aproximadamente un 20% del precio del software

Beneficios

Rápido y a la última
Las actualizaciones y los service packs están disponibles nada mas lanzados al mercado

Proactivo
Recibirás automáticamente el software por correo y se notificará via mail

Transparente
Administración gestión de los contratos SUS con el SUS Manager

Costes predecibles
Para las actualizaciones del software con una cuota anual acorde

Oferta: SUS
15/08/2021

http://siemens.es/tutorialessimatic

TIA Portal V17
Licencias

Licencia

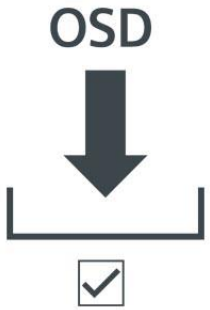
6ES7822-1AE07-0YA5

SIMATIC STEP 7 Prof. V17; Floating License para descargar; software de ingeniería en el TIA Portal; software, documentación y clave de licencia para descarga; clase A; en 6 idiomas: de,en,fr,es,it,zh; ejecutable en Windows 7 (64 bits), Windows 10 (64 bits), Windows Server 2012 R2/2016; para configuración de SIMATIC S7-1200/1500, SIMATIC S7-300/400/WinAC, SIMATIC Basic Panels
Dirección de e-mail imprescindible para la entrega

6ES7822-1AA07-0YA5

SIMATIC STEP 7 Prof. V17; Floating License; software de ingeniería en el TIA Portal; SW y documentación en DVD; clave de licencia en memoria USB; clase A; en 6 idiomas: de,en,fr,es,it,zh; ejecutable con Windows 7 (64 bits), Windows 10 (64 bits), Windows Server 2012 R2 (64 bits), Windows Server 2016/2019 (64); para configuración de SIMATIC S7-1200/1500, SIMATIC S7-300/400/WinAC, SIMATIC Basic Panels
Contenido: juego (4 DVD + 1 USB)

Upgrade



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SIMATIC STEP 7 Prof. V17; Upgrade V11...V15-> V17 o V11/2010...V15/2017-> V17/2017 SR1 o bien 2006...2010-> V17/2017 SR2 Combo Floating License DL; ingeniería Software en el TIA Portal; también es válido para Upgrade de V11 Single Licenses; software, documentación y clave de licencia para descarga; clase A; en 6 idiomas: de,en,fr,es,it,zh; ejecutable en Windows 7 (64 bits), Windows 10 (64 bits), Windows Server 2012/16 (64); Dirección de e-mail imprescindible para la entrega

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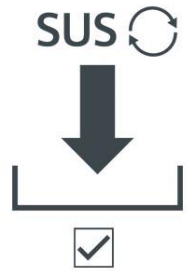
SIMATIC STEP 7 Prof. V17; Upgrade V11...V15-> V17 o V11/2010...V15/2017 -> V17/2017 SR2 o bien 2006...2010-> V17/2017 SR2 Combo Floating License; ingeniería Software en el TIA Portal; también es válido para Upgrade desde V11 (Single Licenses); SW y documentación en DVD; clave de licencia en memoria USB; clase A; en 6 idiomas: de,en,fr,es,it,zh; ejecutable en Windows 7(64 bits), Windows 10 (64 bits), Windows Server 2012/16/19 (64) ; para configurar SIMATIC S7-1200/1500, S7-300/400/WinAC, SIMATIC Basic Panels

SUS



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SIMATIC STEP 7 Professional Servicio de actualización del software (SUS) descarga para TIA Portal; En el marco de este contrato obtendrá durante un año todas las versiones actuales del software. El contrato se prolonga automáticamente 1 año si no se rescinde 3 meses antes de su vencimiento. Plazo de vigencia de suministro y de prestaciones: 1 año a partir de la fecha de la factura.
Requisitos para el cierre: versión actual del software
Dirección de e-mail necesaria para la entrega

6ES7822-1AA00-0YL5

SIMATIC STEP 7 Professional Servicio de actualización del software (SUS) para STEP 7 en el TIA Portal; En el marco de este contrato obtendrá durante un año todas las versiones actuales del software. El contrato se prolonga automáticamente 1 año si no se rescinde 3 meses antes de su vencimiento. Plazo de vigencia de suministro y de prestaciones: 1 año a partir de la fecha de la factura.
Requisitos para el cierre: versión actual del software

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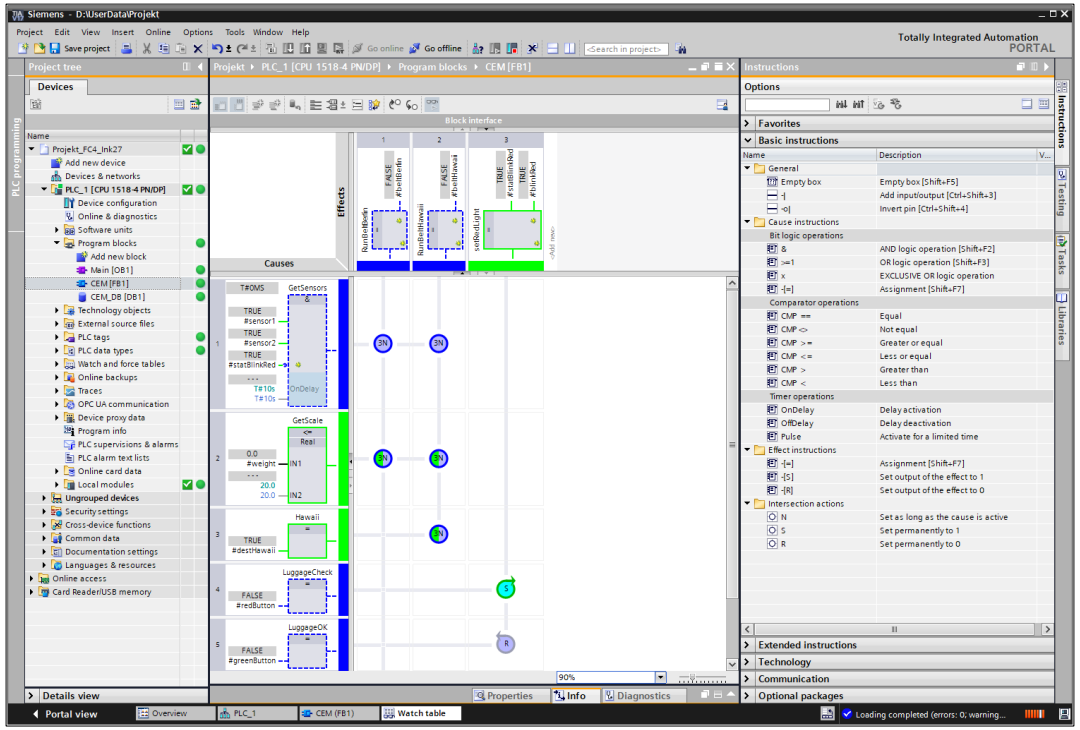
TIA Portal V17
Cause Effect Matrix (CEM)



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 from N dependencies**

Unique portfolio element

→ **CEM, a new innovative programming language in TIA Portal**

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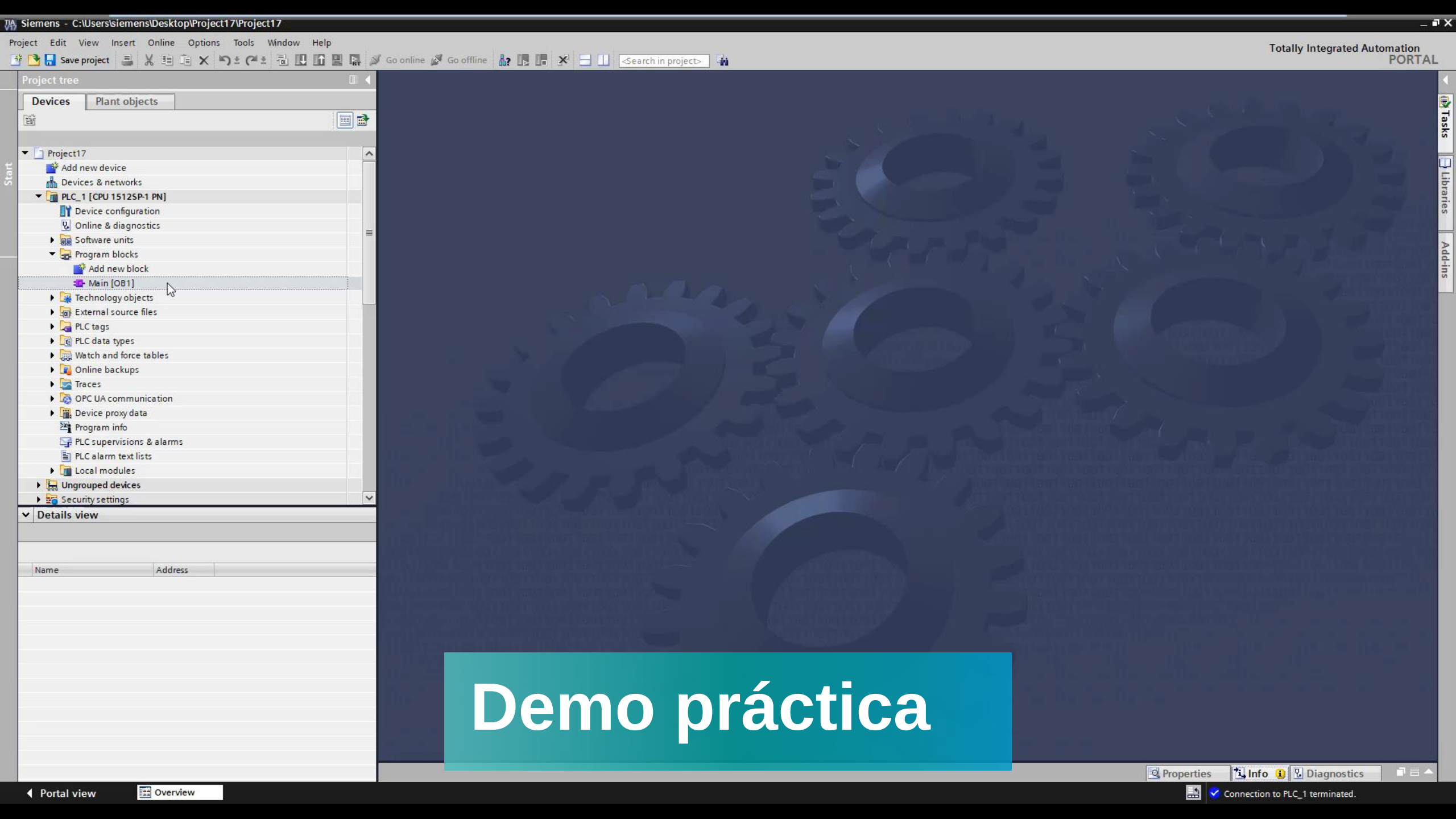
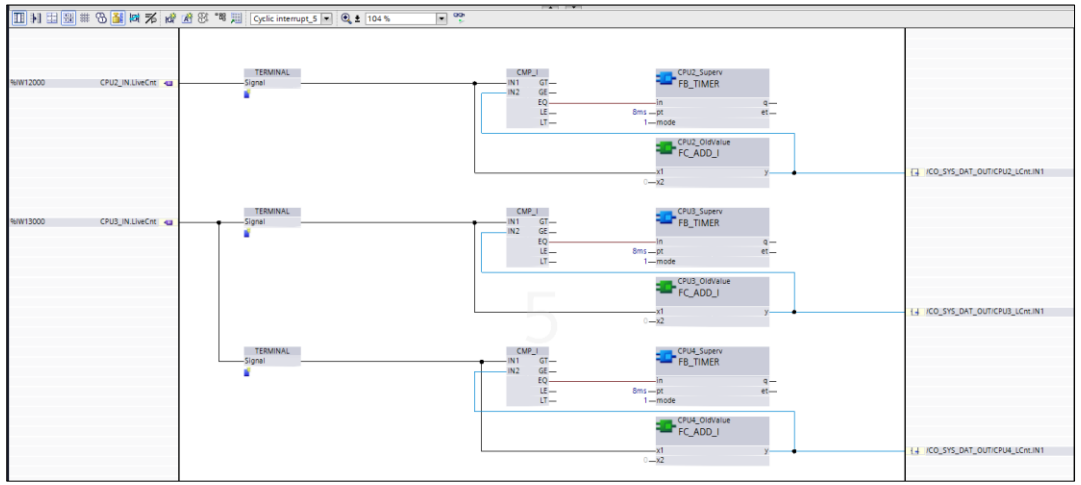

Siemens - C:\Users\siemens\Desktop\Project17\Project17
Project Edit View Insert Online Options Tools Window Help
Save project
Go online
Go offline
<Search in project>
Totally Integrated Automation
PORTAL
Project tree
Devices
Plant objects
Project17
Add new device
Devices & networks
PLC_1 [CPU 1512SP-1 PN]
Device configuration
Online & diagnostics
Software units
Program blocks
Add new block
Main [OB1]
Technology objects
External source files
PLC tags
PLC data types
Watch and force tables
Online backups
Traces
OPC UA communication
Device proxy data
Program info
PLC supervisions & alarms
PLC alarm text lists
Local modules
Ungrouped devices
Security settings
Details view
Name
Address
Start
Tasks
Libraries
Add-ins
Demo práctica
Properties
Info
Diagnostics
Portal view
Overview
Connection to PLC_1 terminated.

TIA Portal V17
SIMATIC STEP 7 CFC V17



CFC for S7-1500

Graphical programming for S7-1500
→ **Signal flows easy to draw**

Integration of all other S7 programming languages
→ **Use of CFCs to call other blocks**

Drawing page technology
→ **Program structuring in max. 20 charts**

Use of chart-in-chart
→ **Hierarchical structuring of the program portal**

Migration from TDC to S7-1500
→ **Re-use of customer expertise with CFC**

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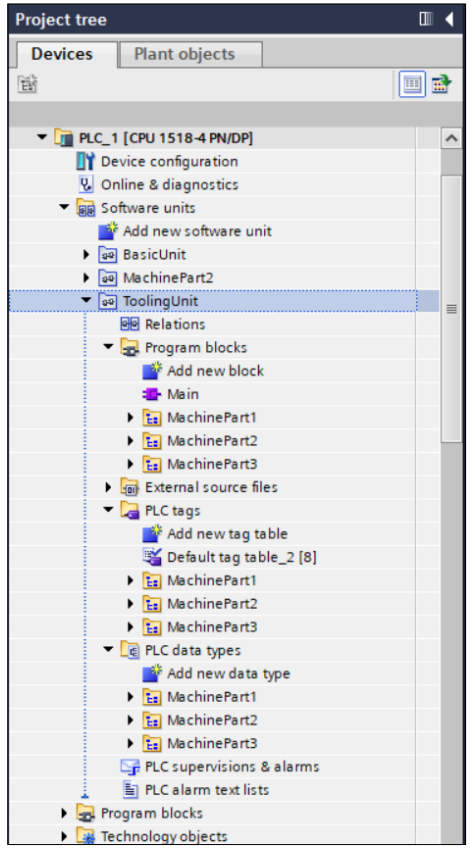
S7-1500 ✓ S7-1200 ✓ S7-300/400/WinAC ✗

TIA Portal V17
Loading/uploading group structure to CPU



Function

During the download, the group structure (also under software units) for the following objects is also loaded onto the CPU:

- Program blocks
- PLC tags
- PLC data types

Restoration of group structure in offline project during:

- Loading of CPU as new station
- Complete software upload (the offline program and the group structure are deleted and replaced by the online program)

Benefits

Access to group structure even when offline program is not available.

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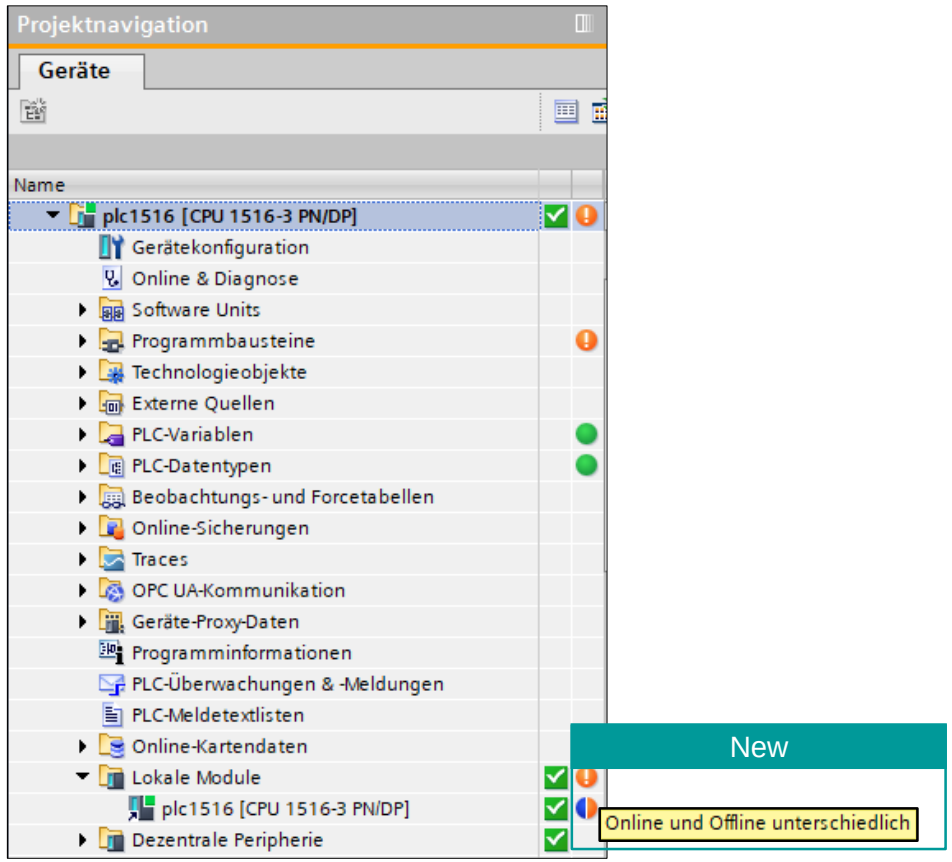
TIA Portal V17
Global offline/online comparison



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

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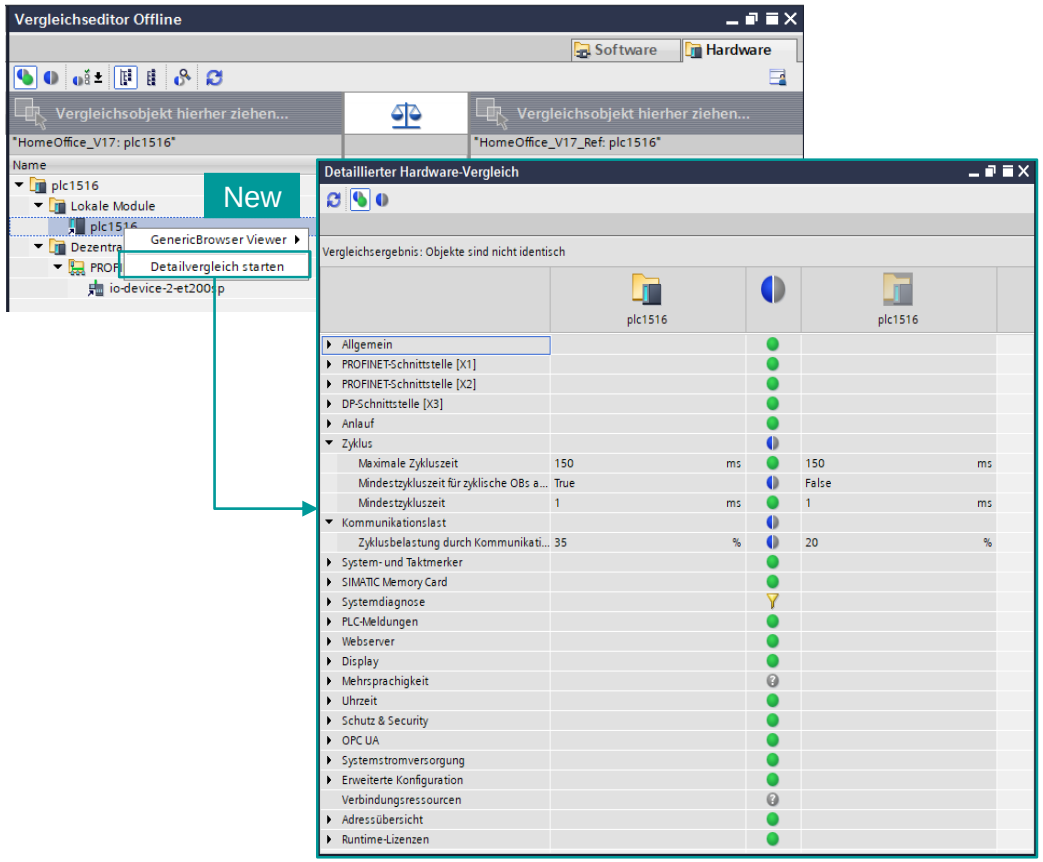
TIA Portal V17
Global offline/online comparison



Function

Comparison of two offline configurations at parameter level

- Allows the comparison of PLCs with the connected centralized/distributed I/O.
- Ideal for comparing the current configuration with a reference configuration.
- An indirect offline/comparison of the configuration at parameter level is possible using the intermediate step "Upload".

Note

Intended extensions:

- Filter options
- Assignment of parameters
- Supports further modules

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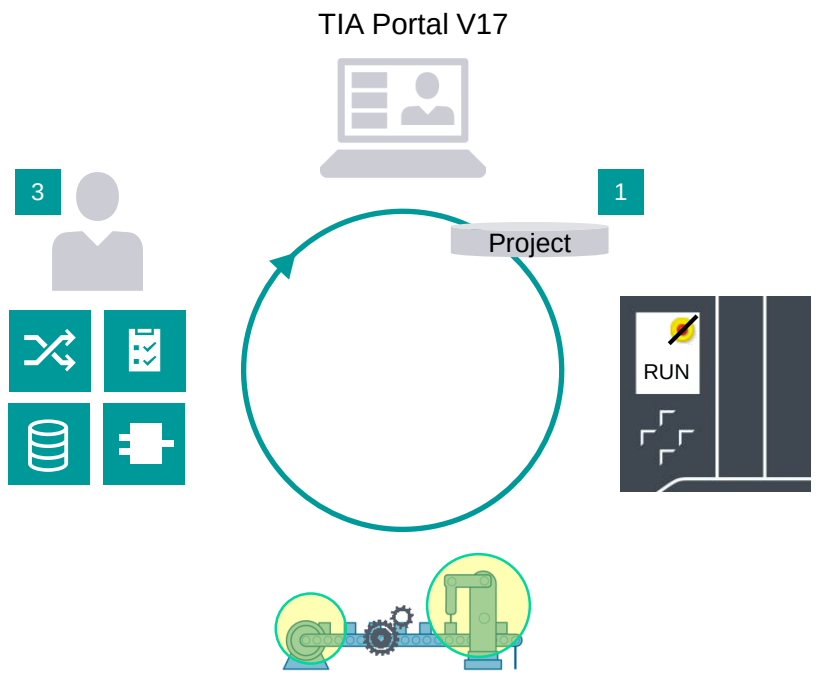
TIA Portal V17
Safety - Fast Commissioning



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 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 in case of time limited deactivated Safety mode

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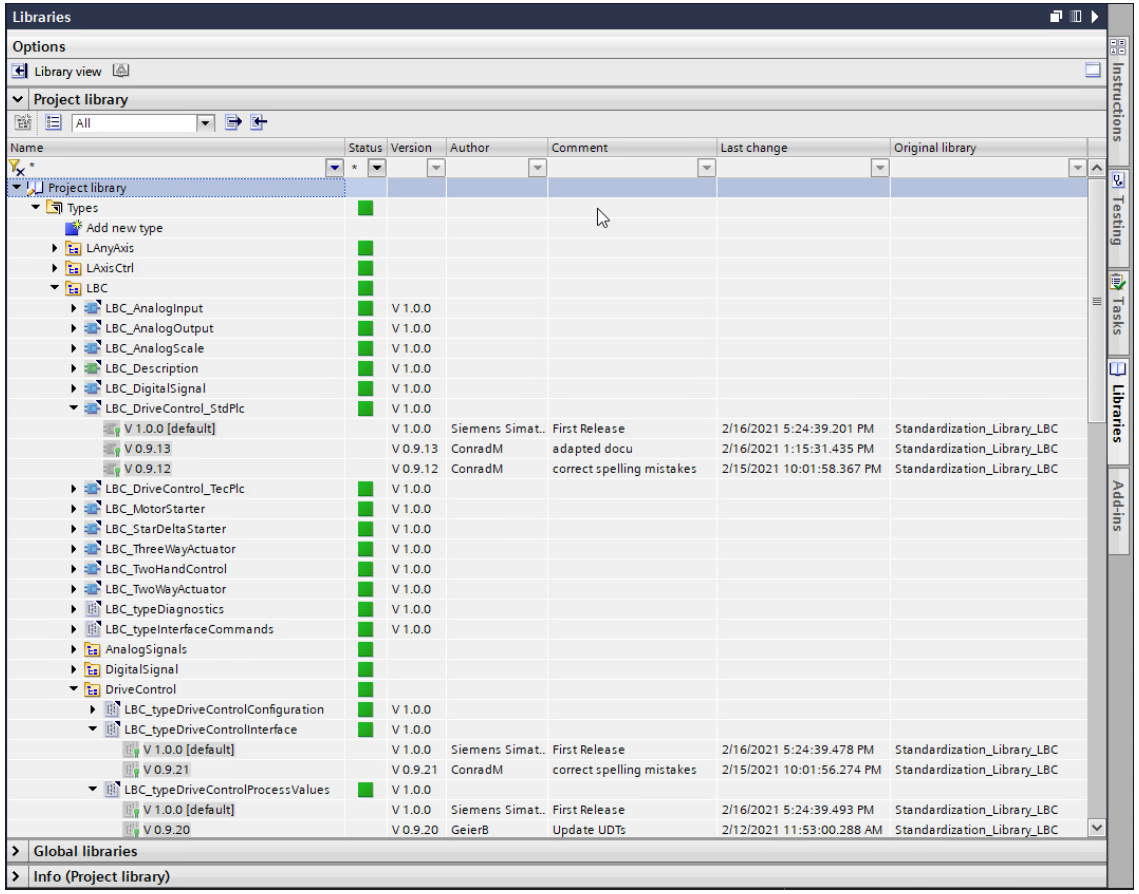
TIA Portal V17
Extended library functions – overview



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

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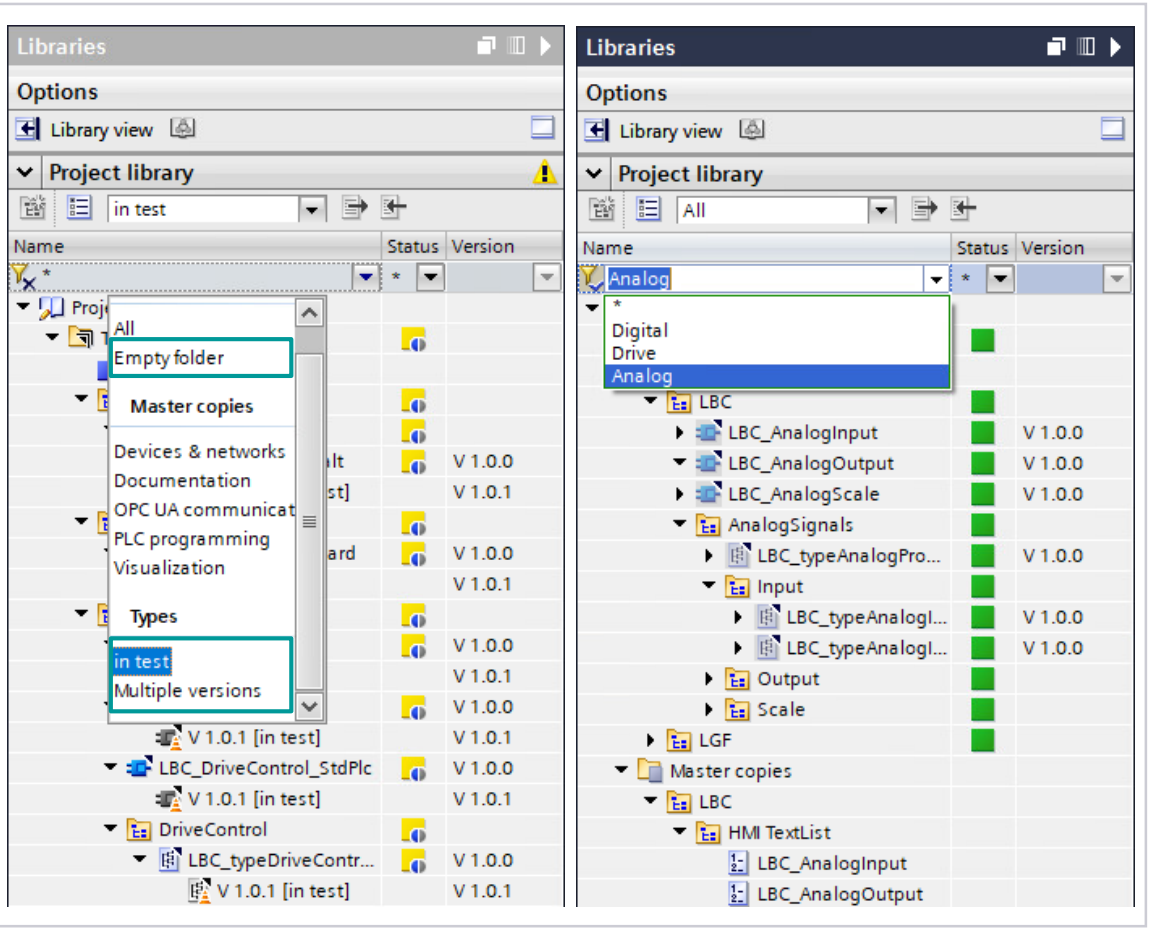
TIA Portal V17
Extended library functions – new filter functions



New filter functions for libraries

- New predefined library filters
  - Empty folder
  - "In test" types
  - Types with multiple versions
- Filter by text in entire library content
- All filter functions can be combined
- "Expand all" function for quick view of the filter result

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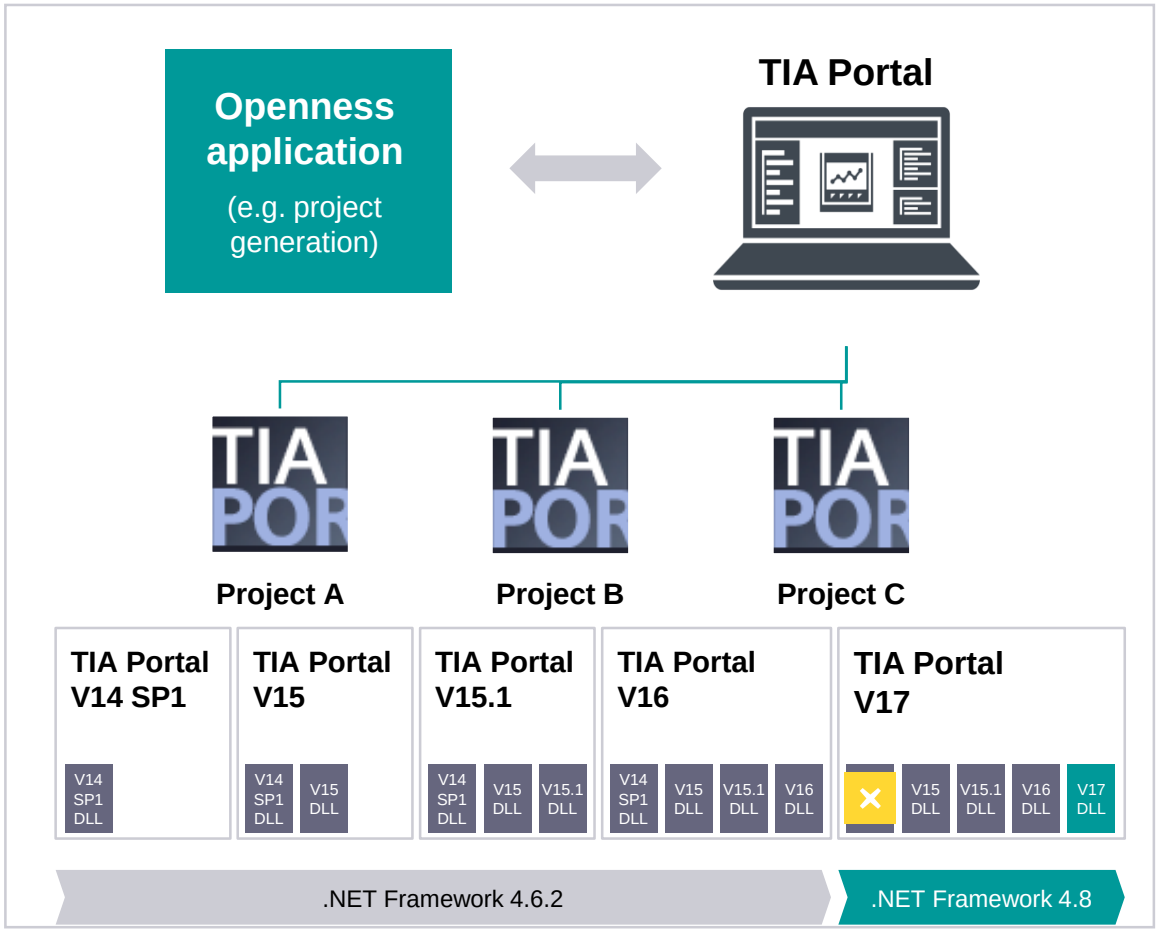
TIA Portal V17
TIA Portal Openness



Extensions for project generation

- Creating instance DBs for FBs in the following languages:
  - As of V16: ProDiag
  - As of V17: LAD, FBD, IL/STL, SCL, Graph, Cause Effect Matrix (CEM)
- Write access to the OB attribute "PriorityNumber"
- Blocks or data types from "ExternalSourceGroup" can be generated directly into a subgroup
- Direct read access to DB tags and write access to their "StartValue" attribute

Benefits

Using the new functions, the project generation workflows can be performed with a wider range using the Openness application.

This enables more efficient generation of TIA Portal projects.

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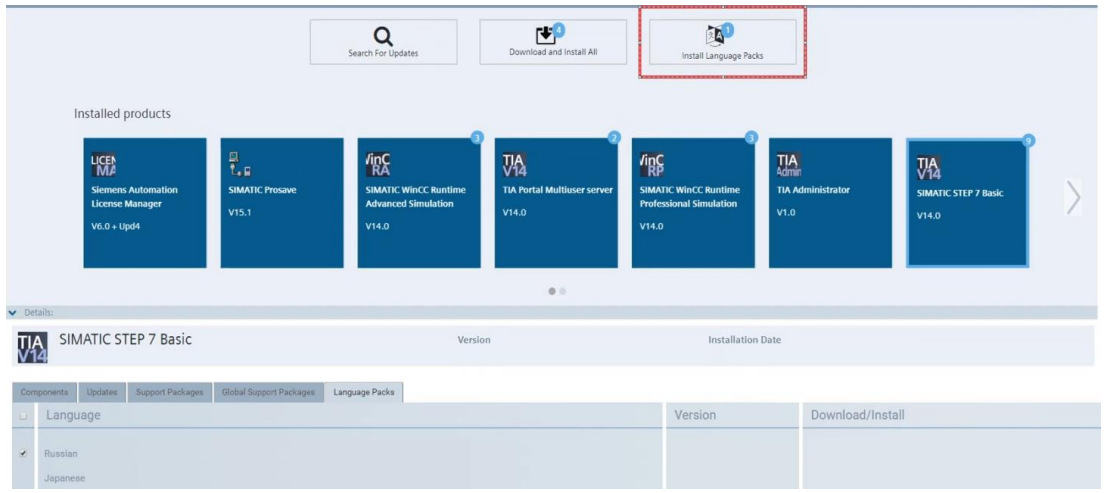
TIA Portal V17
TIA Portal language packs



In TIA Portal from Version 17, the following user interface languages are available via the TIA Administrator:

- French
- Italian
- Spanish

- Japanese[1]
- Korean[1]
- Russian[1]

The languages

German – English – Chinese

are made available immediately during installation of the TIA Portal.

1 online help in English

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S7-1500 FW 2.9
Novedades

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S7-1500 FW2.9

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

TIA Portal V12 to TIA Portal V16

V12/V13/V13 SP1 project with FW 1.0 to FW/1.8

Firmware V2.9

V14/V14 SP1 project with FW 2.0/2.1

Firmware V2.9

V15/V15.1 project with FW 2.5/FW 2.6

Firmware V2.9

V16 project with FW 2.8

Firmware V2.9

Full spare part functionality: Online support: ID 109744163

TIA Portal V17

V17 project with FW 2.9

Firmware V2.9

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

https://support.industry.siemens.com/cs/es/es/view/77492231

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S7-1500 FW2.9
CPU 1518 with extended configuration limits

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

CPU 1518 with existing hardware inf TIA Portal V17:

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

for applications with enhanced requirements regarding code memory and 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

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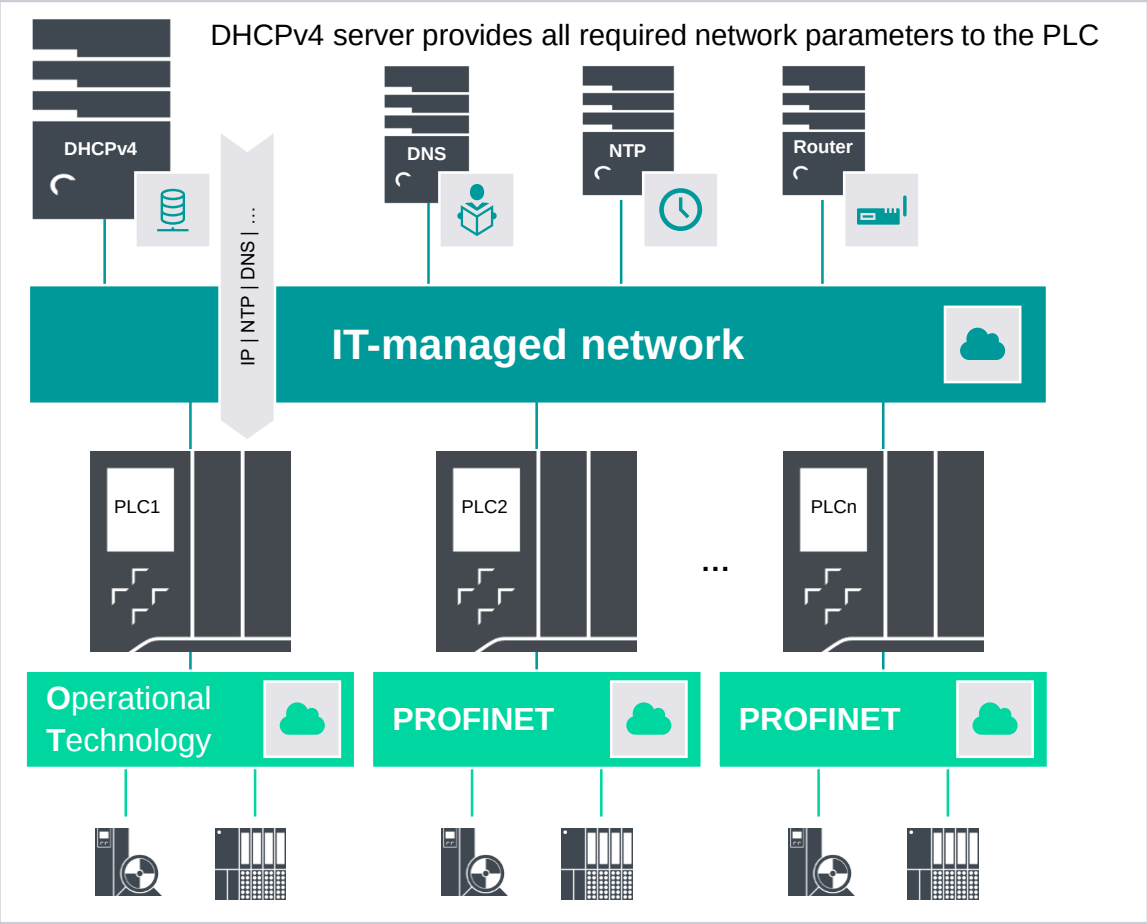
S7-1500 FW2.9
DHCP - Dynamic assignment of the network configuration



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 name[1]

Possible application areas

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

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

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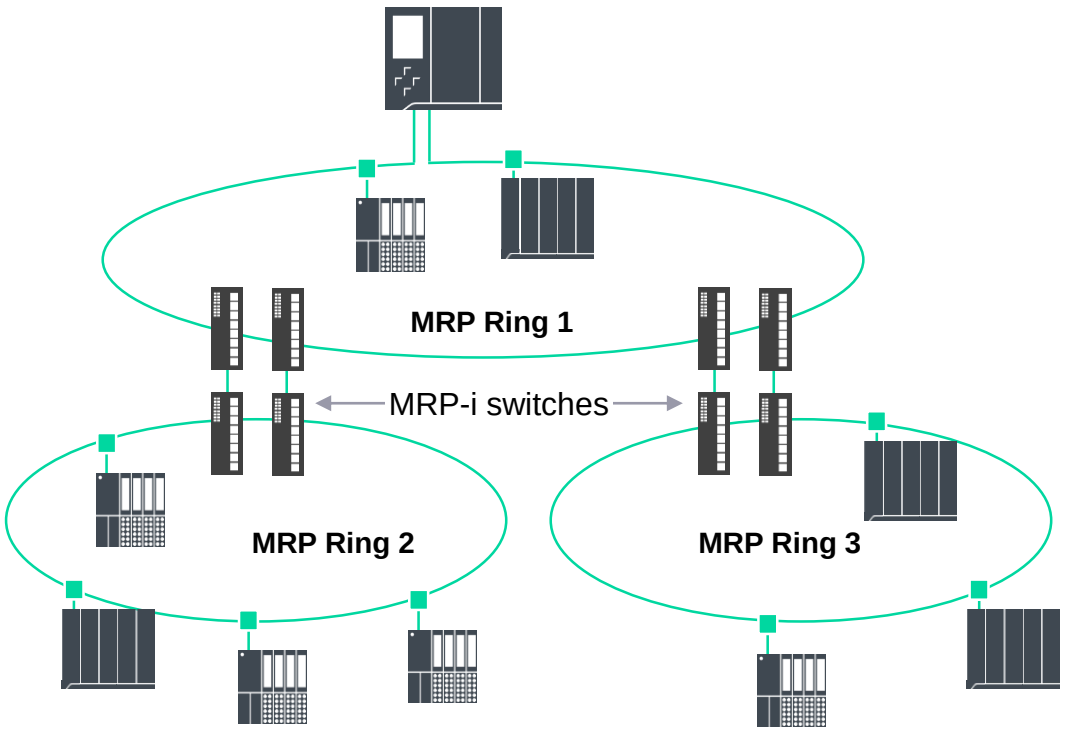
S7-1500 FW2.9
Supports MRP Interconnect



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

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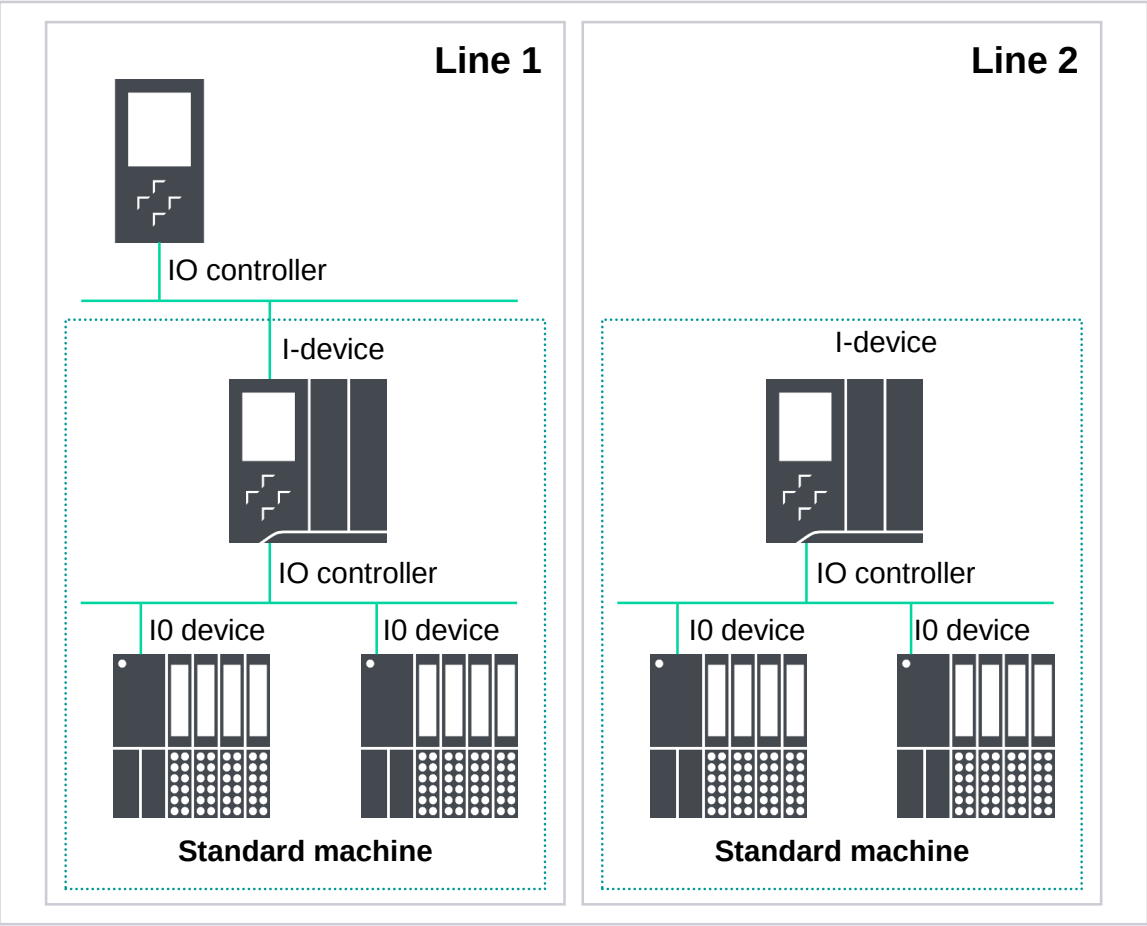
S7-1500 FW2.9
Deactivating/activating the I-device in the user program



- The I-device configuration of a CPU can be deactivated or re-activated by using the instruction "D_ACT_DP"
- If the IO controller is not available, the I-device CPU does not longer indicate an error via its ERROR LEDs (if the I-device function is deactivated by the user program)
- Pre condition: TIA Portal V17, CPU FW V2.9, CM 1542-1 FW V3.0

Customer benefits

- All standard machines have a uniform user program, regardless of whether there is an IO controller at the deployment site
- No annoying/confusing ERROR LED display

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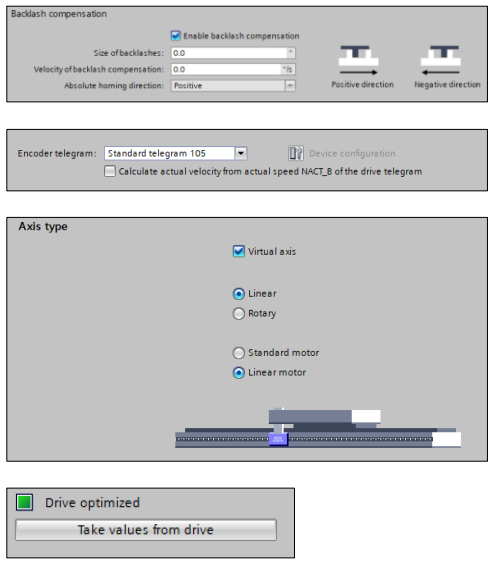
S7-1500 FW2.9
Motion Control - Extended functions on technology object axis

S7-1500 and S7-1500 T-CPU



Feature/function

Backlash compensation – compensate backlash in mechanics

Apply actual speed (NIST) from PROFIdrive telegram

Connection and configuration of linear motors

Automatic optimization of the axis

Extended functions of the drive and encoder connection via data blocks

Benefits

Increase in motion precision without additional programming effort

The speed determined in the drive is used for control. This helps achieve better control quality, especially for encoders with low resolution.

- Can be used for electric linear or hydraulic drives
- Unit of measurement "Force (N)" can be configured on the axis

- Automatic optimization of the axis with just a few clicks
- Optimization of the drive can be initiated in Startdrive and the parameters that are determined can be adopted automatically for the position controller.

Extension of programming options by using arrays and structures for connection via DBs

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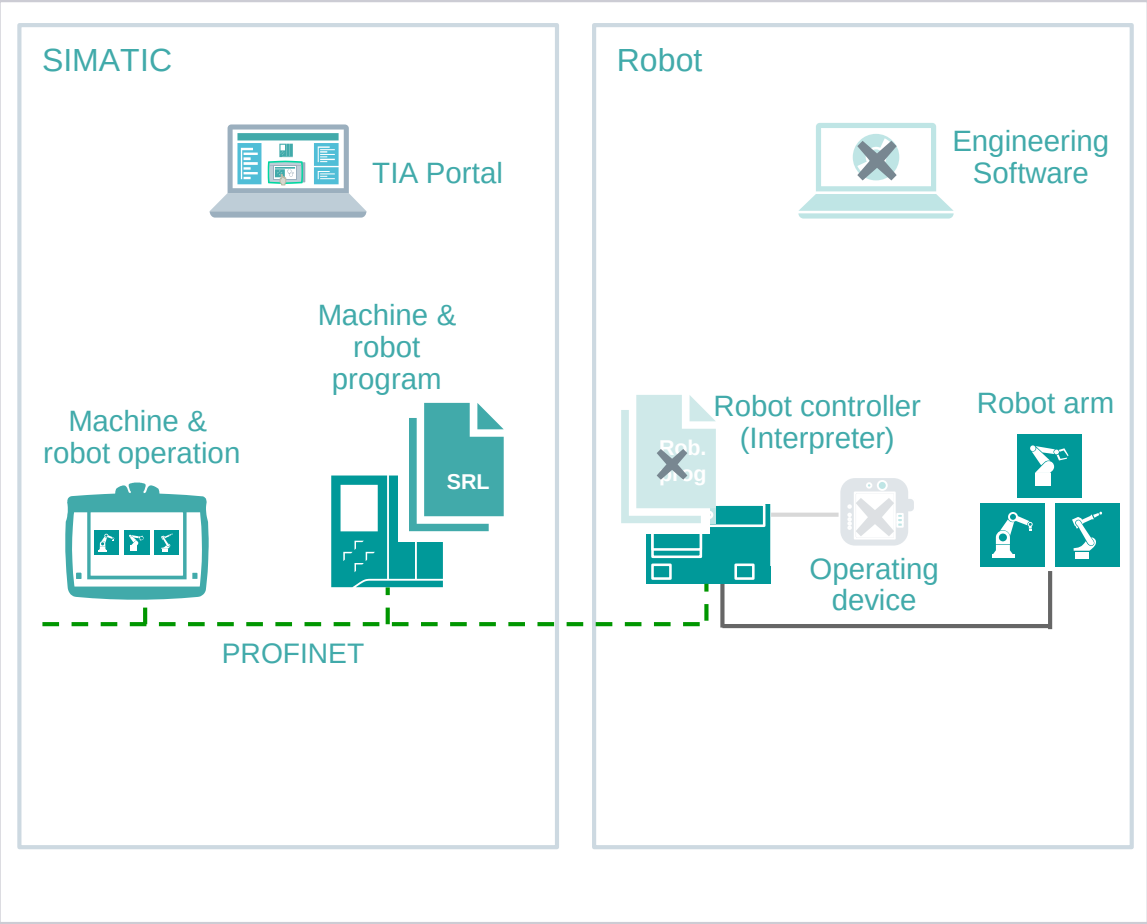
SIMATIC Robot Library
Robot programming in TIA Portal



Robot programming in TIA Portal with the SIMATIC Robot Library

- One library to program robots of various brands within TIA Portal
- Will be based on a coming PNO Standard for robotics.
- Will be based on coming PLCopen certification for robotics
- Functions range from basic move commands (e.g. “MoveLinear”) to advanced commands (e.g. “ForceControl”)
- Library communicates with an interpreter on the robot controller
- Library is developed by Siemens while interpreter is developed by respective robot manufacturer

Customer Benefits

- Standardization for the robotics market
- Seamless programming auf robot and machine, no additional integration
- Uniform operation and engineering environment for PLC and robots
- Manufacturer-independent robot programming
  - No robot-specific programming experience required
  - Robot program is reusable for different robot vendors by just exchanging the connected robot
- Gateway for various, manufacturer-independent robotics solutions for all branches

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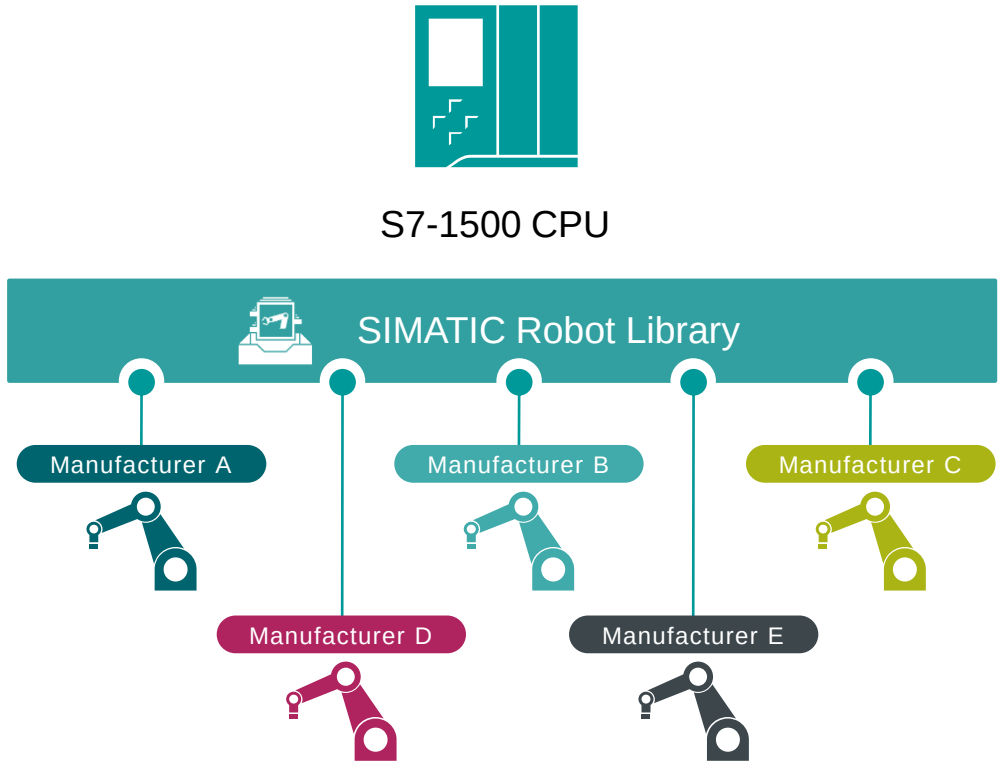
SIMATIC Robot Library
One interface for all robot manufacturers



Unified programming of robots of various brands

- All functions of the library were designed in close cooperation with multiple robot manufacturers
- Several of them have already confirmed the release date for their interpreter
- Currently* confirmed robot manufacturers
  - COMAU (Release: 04/2021)
  - STÄUBLI (Release: 05/2021)
  - UNIVERSAL ROBOT (Release: 09/2021)
  - KAWASAKI (Release: 10/2021)
  - KUKA (Release: 12/2021)
  - ABB (Release: 12/2021)
- Not yet confirmed robot manufacturers
  - EPSON
  - FANUC
  - PANASONIC
  - TECHMAN
  - YAMAHA
  - YASKAWA

** These confirmations are based on robot manufacturer statements!*

https://support.industry.siemens.com/cs/ww/es/view/109796509

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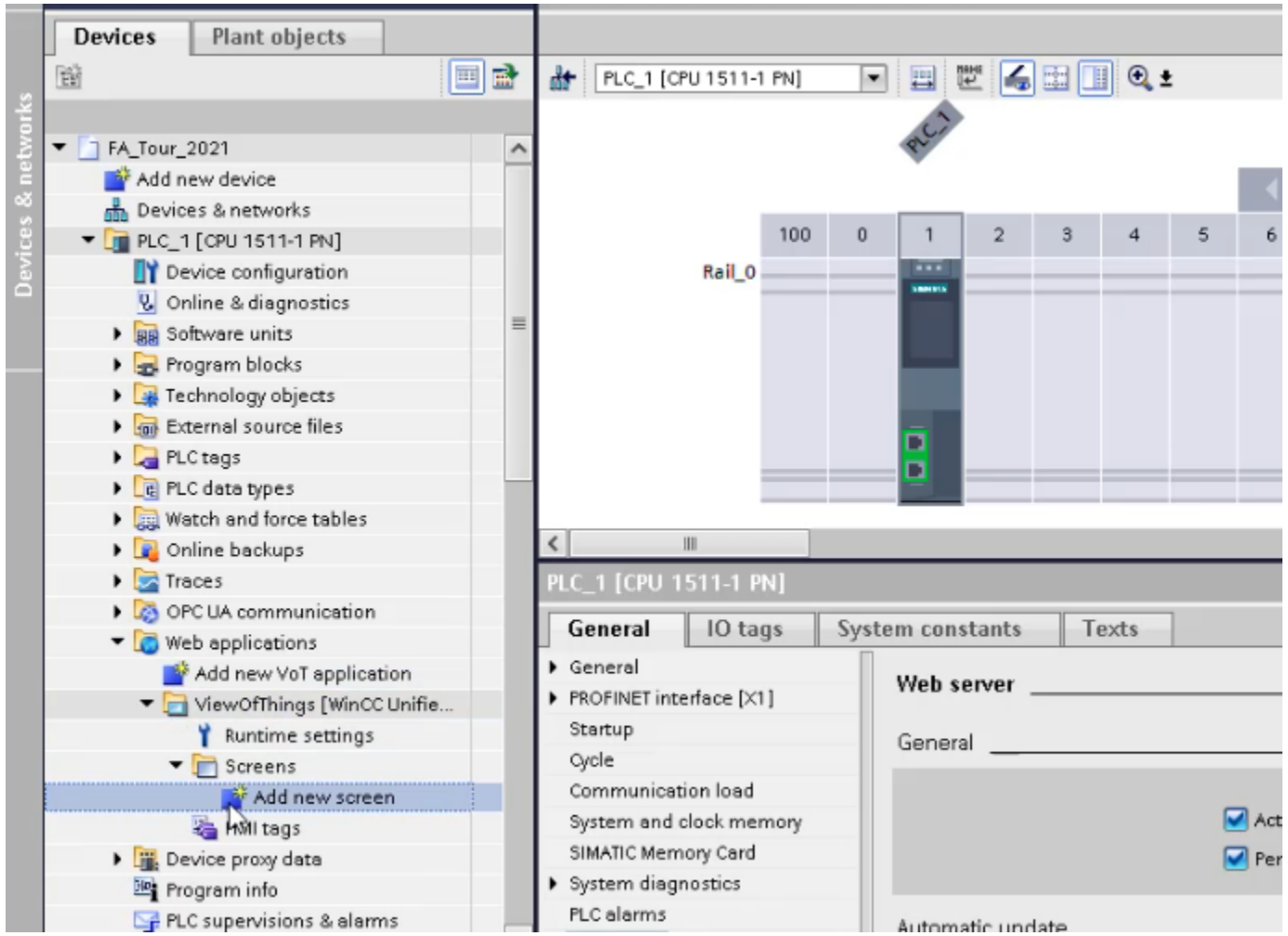
S7-1500 FW2.9
WinCC Unified View of Things



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

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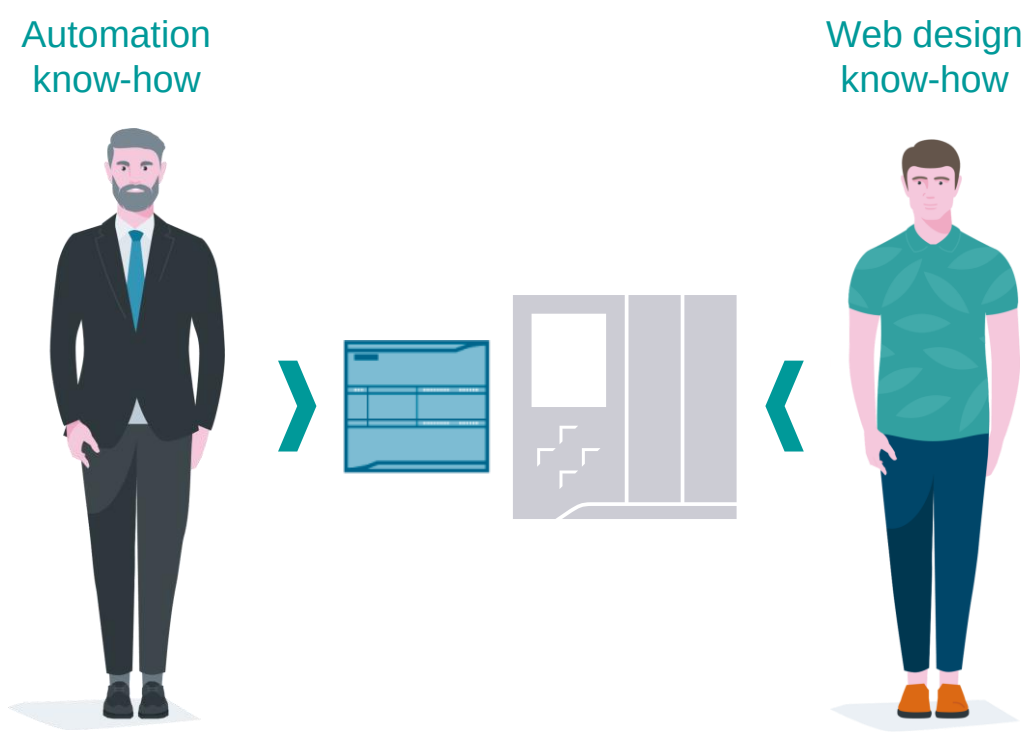
S7-1500 FW2.9 y S7-1200 FW 4.5
Web server innovations



Function

Loading user-defined web pages to the PLC without TIA Portal:

- New "Handle user-defined web pages“ function right in the PLC's hardware properties register in TIA Portal
- Files can be transferred via the new JSON RPC 2.0 API
- Creating user-defined web pages without DB generation in TIA Portal
- User-defined web pages are stored on the PLC's load memory

Benefits of the function

- File transfer and update of user-defined web pages **without STOP → RUN**
- Better separation of domains Automation and web design
- Enables more wide ranging and technically sophisticated user-defined web pages The memory size of the application is only limited by the size of the memory card in the S7-1500 or by the load memory of the S7-1200
- Compatibility of spare parts is ensured as all previous mechanisms are still supported

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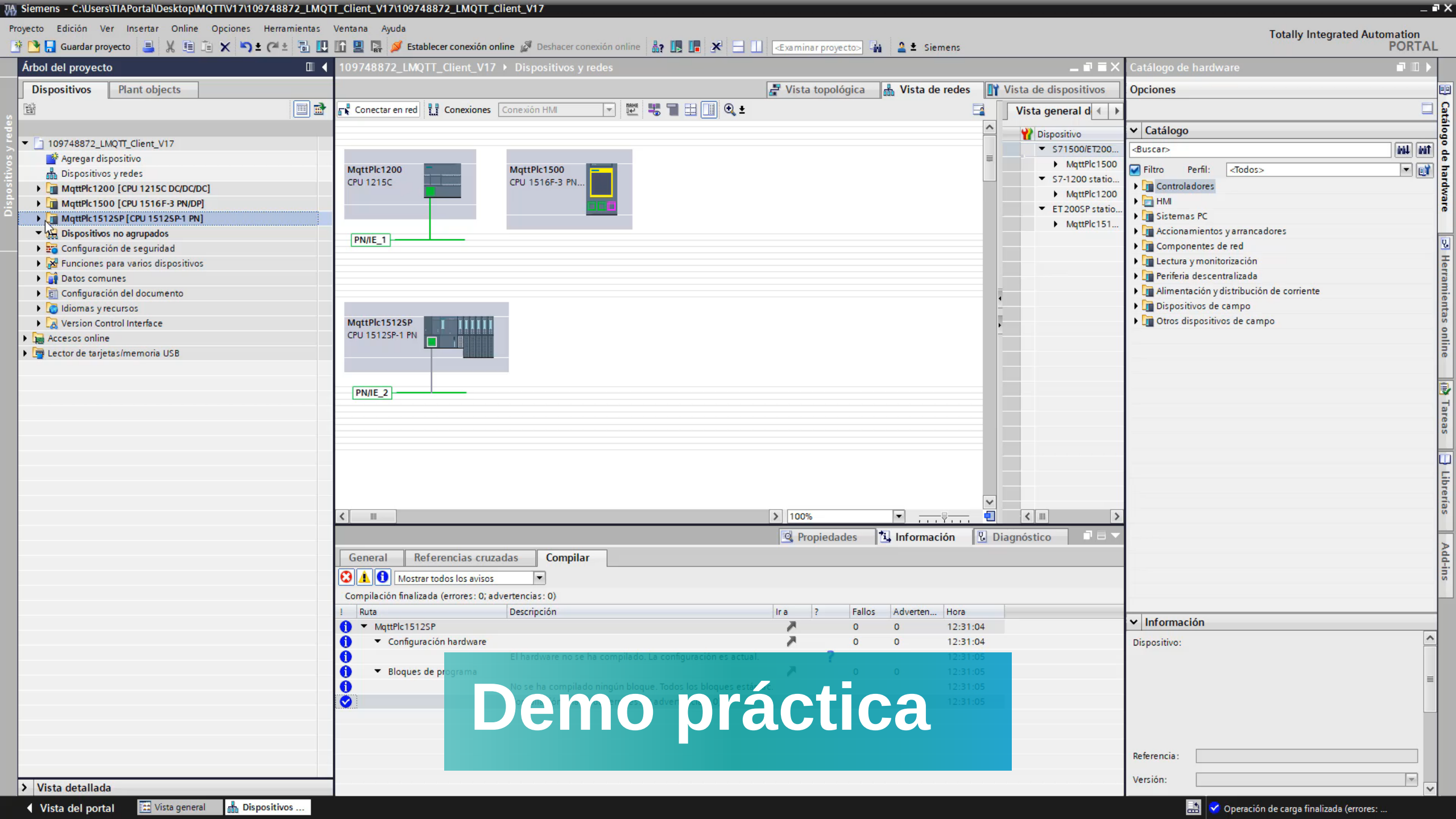
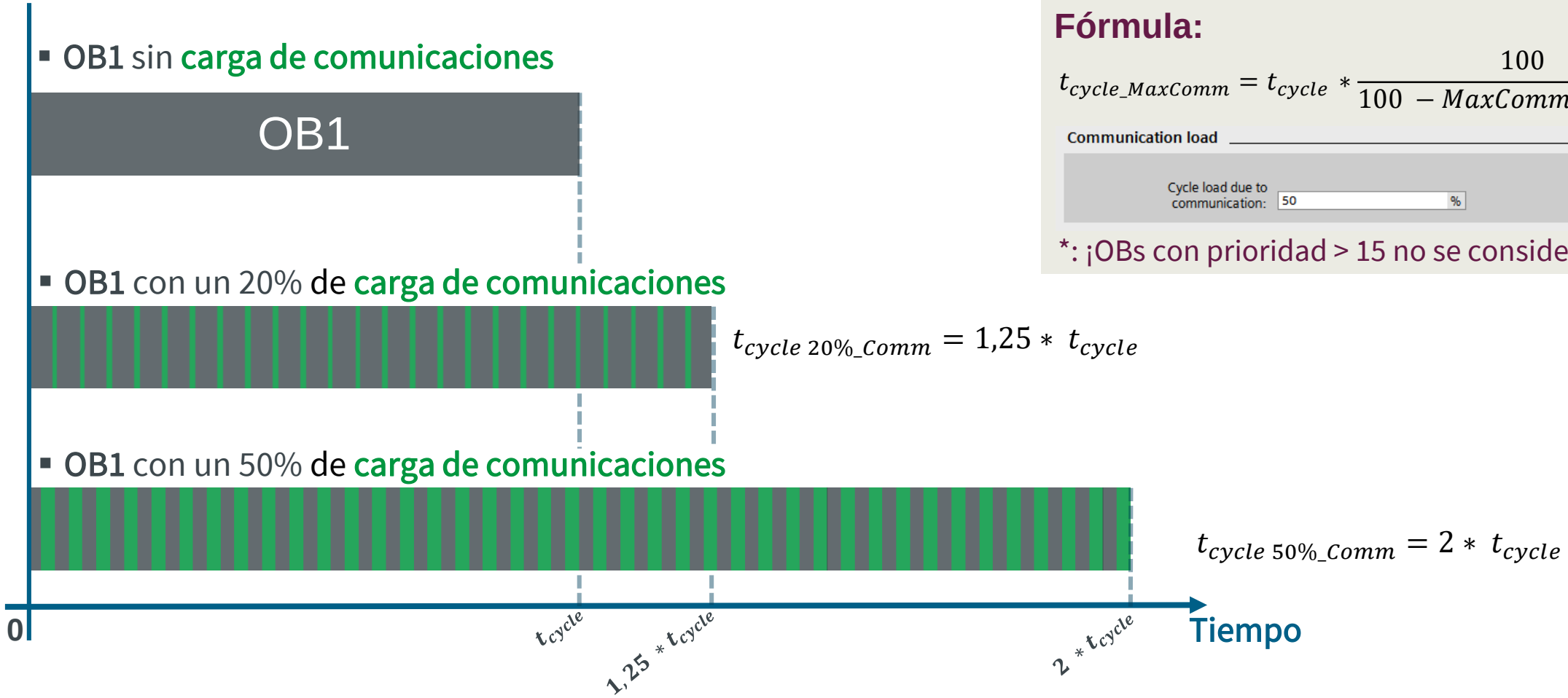
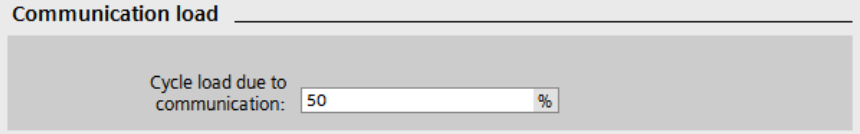

Siemens - C:\Users\TIAPortal\Desktop\MQTT\V17\109748872_LMQTT_Client_V17\109748872_LMQTT_Client_V17
Proyecto Edición Ver Insertar Online Opciones Herramientas Ventana Ayuda
Guardar proyecto
Establecer conexión online
Deshacer conexión online
Totally Integrated Automation PORTAL
Árbol del proyecto
Dispositivos
Plant objects
109748872_LMQTT_Client_V17
Agregar dispositivo
Dispositivos y redes
MqttPlc1200 [CPU 1215C DC/DC/DC]
MqttPlc1500 [CPU 1516F-3 PN/DP]
MqttPlc1512SP [CPU 1512SP-1 PN]
Dispositivos no agrupados
Configuración de seguridad
Funciones para varios dispositivos
Datos comunes
Configuración del documento
Idiomas y recursos
Version Control Interface
Accesos online
Lector de tarjetas/memoria USB
Vista detallada
109748872_LMQTT_Client_V17 ▸ Dispositivos y redes
Vista topológica
Vista de redes
Vista de dispositivos
Conectar en red
Conexiones
Conexión HMI
MqttPlc1200
CPU 1215C
MqttPlc1500
CPU 1516F-3 PN...
PN/IE_1
MqttPlc1512SP
CPU 1512SP-1 PN
PN/IE_2
100%
Vista general d
Dispositivo
S71500/ET200...
MqttPlc1500
S7-1200 statio...
MqttPlc1200
ET 200SP statio...
MqttPlc151...
Propiedades
Información
Diagnóstico
General
Referencias cruzadas
Compilar
Mostrar todos los avisos
Compilación finalizada (errores: 0; advertencias: 0)
Ruta
Descripción
Ir a
?
Fallos
Adverten...
Hora
MqttPlc1512SP 0 0 12:31:04
Configuración hardware 0 0 12:31:04
El hardware no se ha compilado. La configuración es actual. 12:31:05
Bloques de programa 0 0 12:31:05
No se ha compilado ningún bloque. Todos los bloques están c 12:31:05
12:31:05
Demo práctica
Catálogo de hardware
Opciones
Catálogo
<Buscar>
Filtro
Perfil:
<Todos>
Controladores
HMI
Sistemas PC
Accionamientos y arrancadores
Componentes de red
Lectura y monitorización
Periferia descentralizada
Alimentación y distribución de corriente
Dispositivos de campo
Otros dispositivos de campo
Información
Dispositivo:
Referencia:
Versión:
Catálogo de hardware
Herramientas online
Tareas
Librerías
Add-ins
Dispositivos y redes
Vista del portal
Vista general
Dispositivos ...
Operación de carga finalizada (errores: ...

S7-1500 FW2.9 y S7-1200 FW 4.5
Carga de comunicaciones



Fórmula:

$$t_{cycle_MaxComm} = t_{cycle} * \frac{100}{100 - MaxCommloadConf}$$



*: ¡OBs con prioridad > 15 no se consideran!

Para más información: https://support.industry.siemens.com/cs/ww/es/view/59193558

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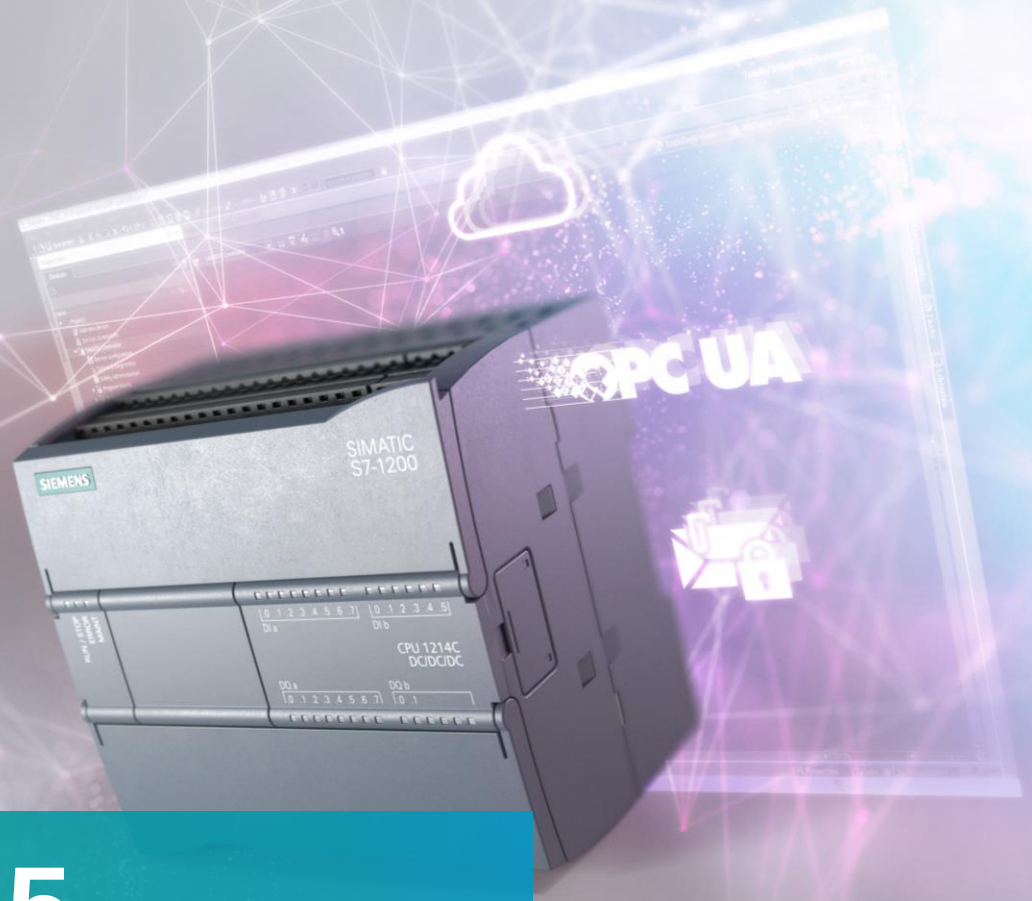

S7-1200 FW 4.5
Novedades

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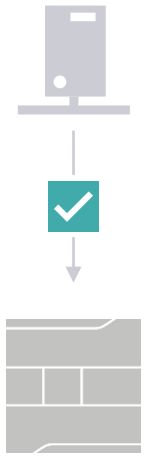
S7-1200 FW 4.5
Spare Parts Compatibility

TIA Portal V12 to TIA Portal V16

V12/V13/V13 SP1 project with FW 1.0 to FW3.0



Firmware V4.5

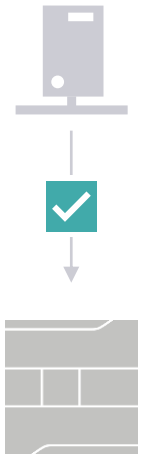
V14/V14 SP1 project with FW 4.0/4.1

Firmware V4.5

V15/V15.1 project with FW 4.2/FW 4.3

Firmware V4.5

V16 project with FW 4.4



Firmware V4.5

Latest firmware version release: Online support: ID 109771672

TIA Portal V17

V17 project with FW 4.5

Firmware V4.5

New functions can be used with TIA Portal V17 and firmware V4.5

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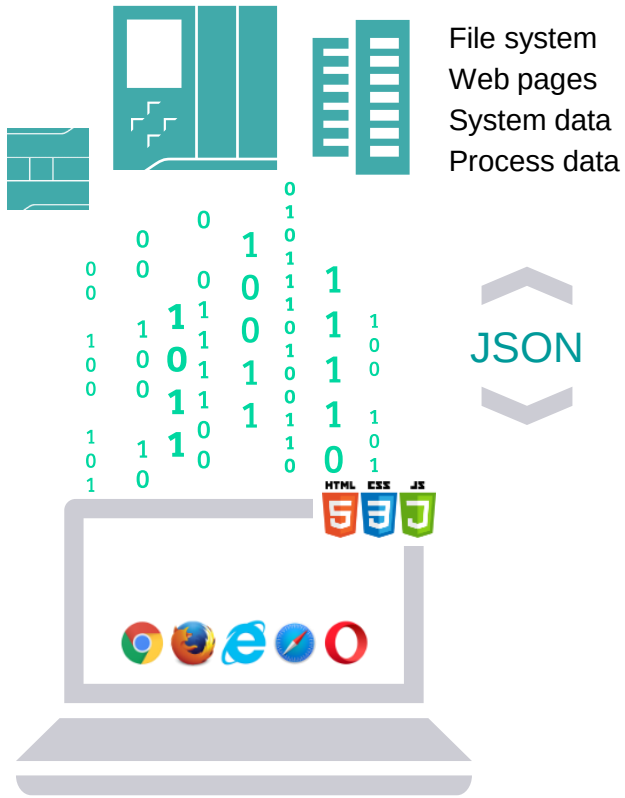
S7-1200 FW 4.5
Web server innovations



Function

- Web server with JSON RPC2.0 as new "web data interface" for access to web server data such as
  - Process values (tag values)
  - CPU status and diagnostics data (in some cases)
- CPU web server response in JSON format

Advantages of the function

- Future basis for "state-of-the-art" creation of user-defined web pages
- JSON as web-compliant data format for simple linking to web data consumers, e.g. MES systems, SCADA systems
- JSON as a stable data format for accessing web server data, i.e. no adjustment of web client code (e.g. Java Script code) needed after firmware update
- Spare part compatibility as the new web data interface can be used in addition to the current options

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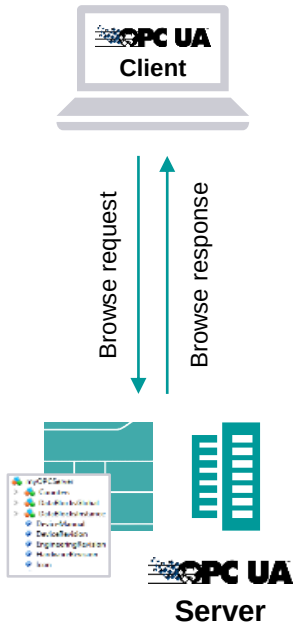
S7-1200 FW 4.5
OPC UA – extended range of functions

Browsing

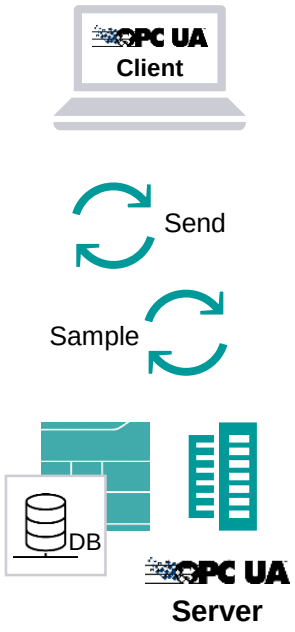


Browsing CPU data

Read/ write

Asynchronous data access

Subscription



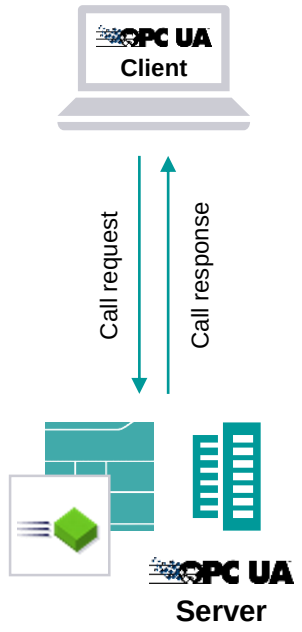
Load reduction for HMI applications

Companion specification

Information modeling

Methods

V4.5



Consistent data transfer

Supports

- Structured data types and arrays

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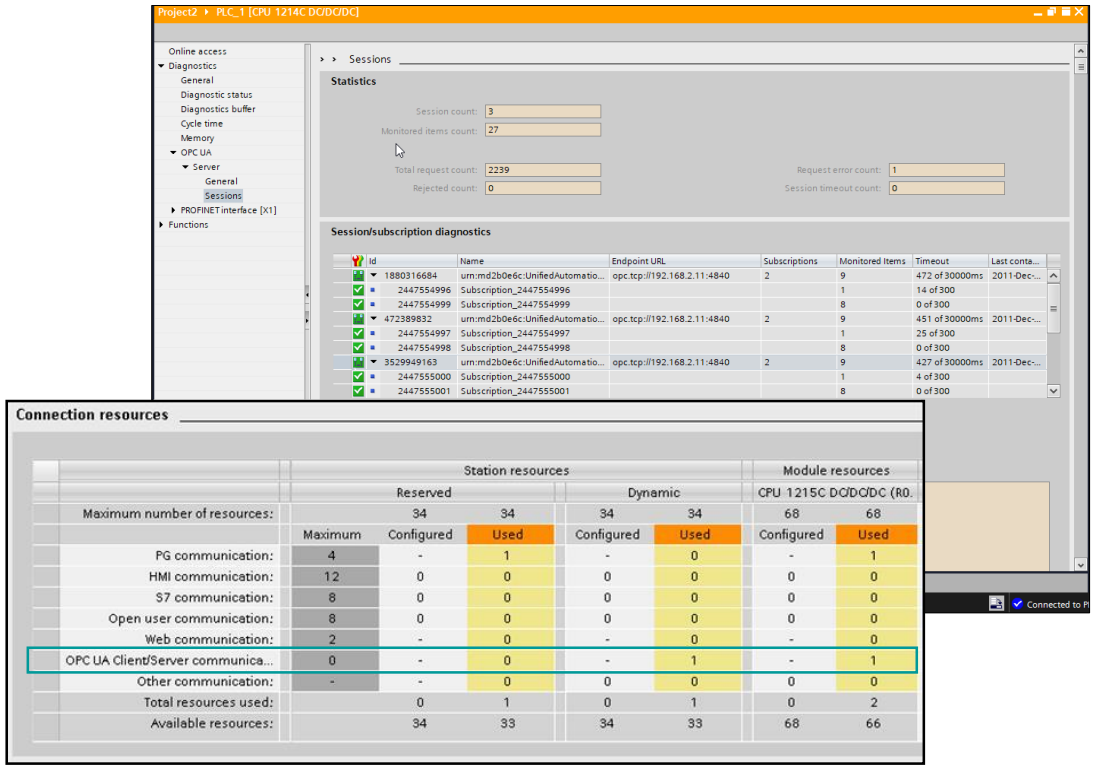
S7-1200 FW 4.5
OPC UA – OPC UA server diagnostics in TIA Portal



Additional diagnostic buffer entries for OPC UA server

- Activation/deactivation of the OPC UA diagnostic information by user in the CPU properties
- Summary possible in the event of message burst of diagnostic messages relevant to OPC UA and just one appearance in diagnostics buffer

Benefits

Faster analysis of information relevant to OPC UA in the event of an error

OPC UA diagnostic information in TIA Portal

- Display of additional information concerning the OPC UA server via "Online & Diagnostics" on the CPU
- Provision of information on session and monitored items via "Sessions"
- Visualization of the number of OPC UA resources used in "Connection resources" in TIA Portal

Benefits

Additional diagnostic information available for fast and efficient error detection concerning OPC UA

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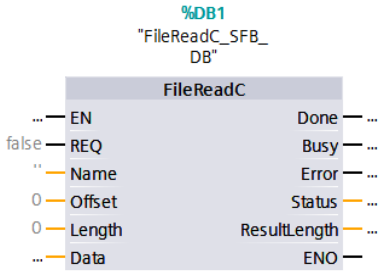
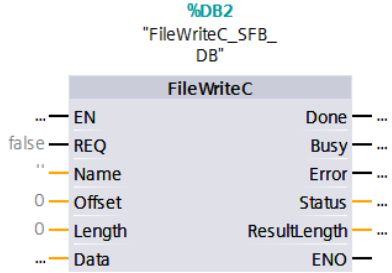
S7-1200 FW 4.5
Import and export of ASCII files (files in binary format)

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

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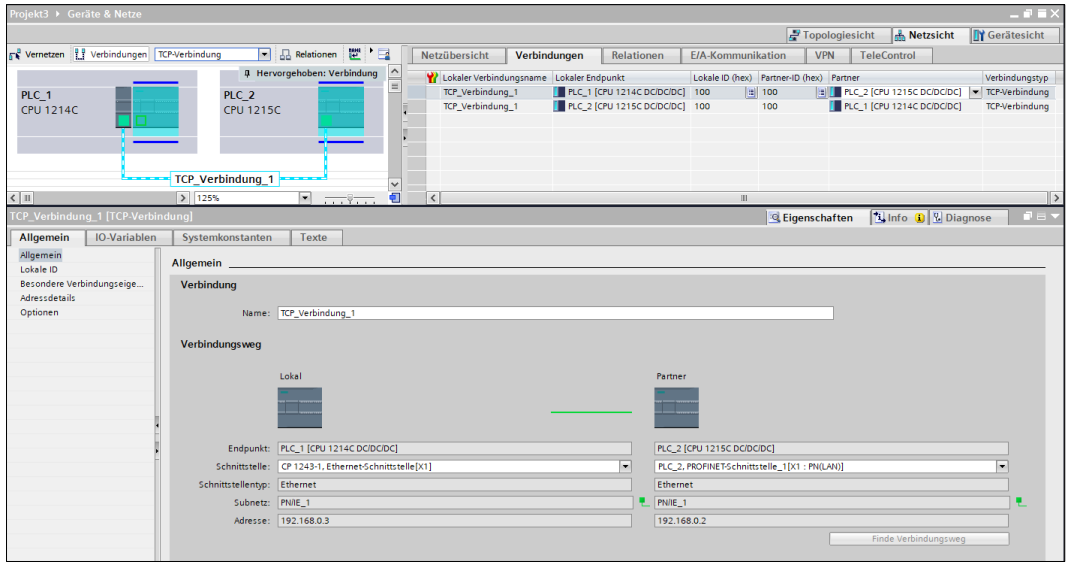
S7-1200 FW 4.5
Configured OUC connections



Connection configuration in HWCN for

- TCP
- UDP
- Iso-on-TCP

Enables connection to be established in RUN without TCON or T_DISCON

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S7-1500 H & R FW 2.9 Novedades

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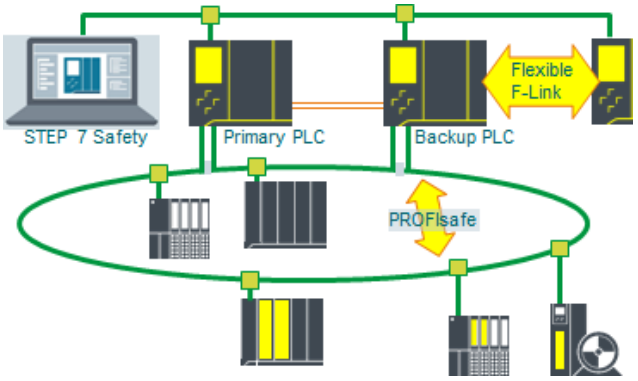
S7-1500 H&R FW 2.9
Redundant controller with Safety: CPU 1518HF-4 PN



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

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Seguridad en TIA Portal

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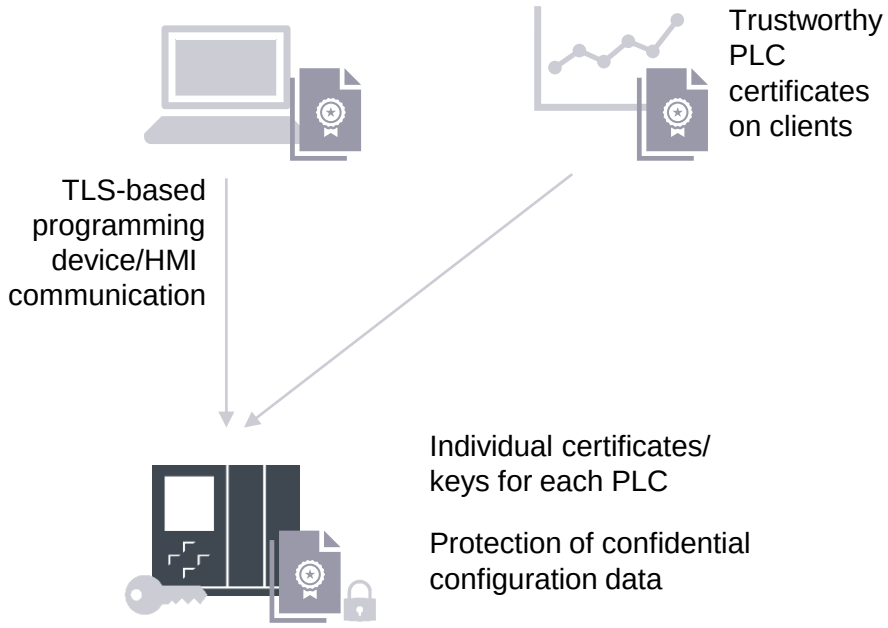
Security on TIA Portal
Enhanced security for SIMATIC programming device/HMI communication



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

- Communication security based on Internet-standard TLS[1]
- 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

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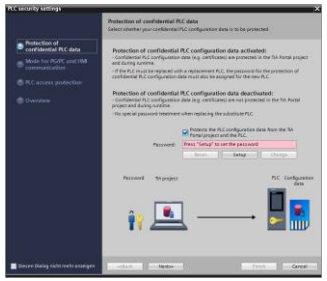
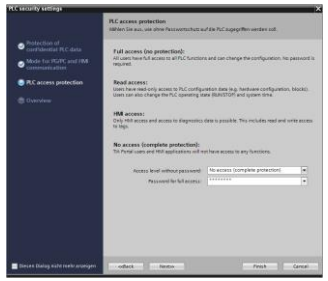
Security on TIA Portal
Security Wizard for new PLC Security Mechanisms

Step 1



Step 2

Step 3



PLC with Security-Settings

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

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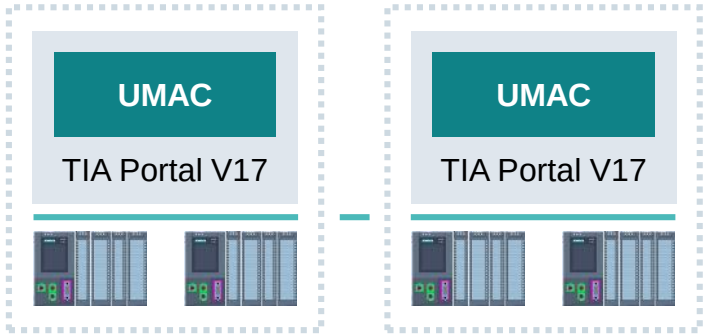
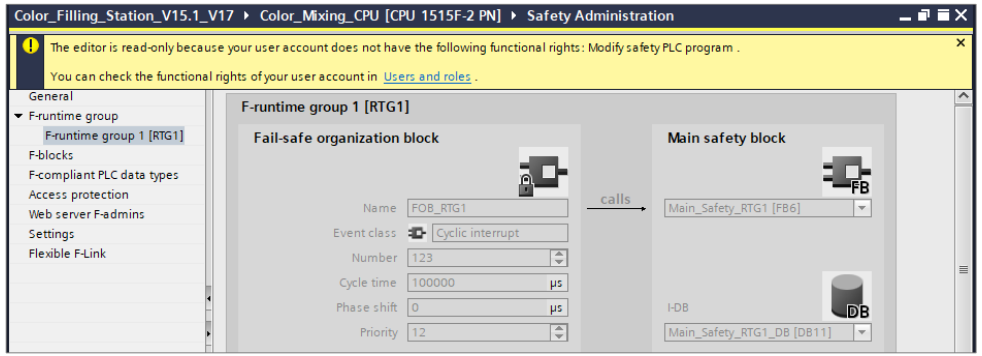
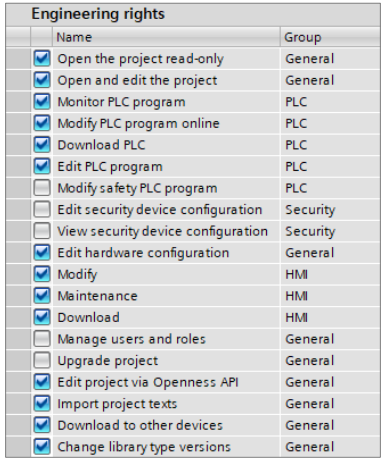
Security on TIA Portal
TIA Portal User Management & Access Control (UMAC)

UMAC: User Management and Access Control

- Built-in functionality in TIA Portal
- Allows personalized access to TIA Portal projects
- Define project users, roles and assign them







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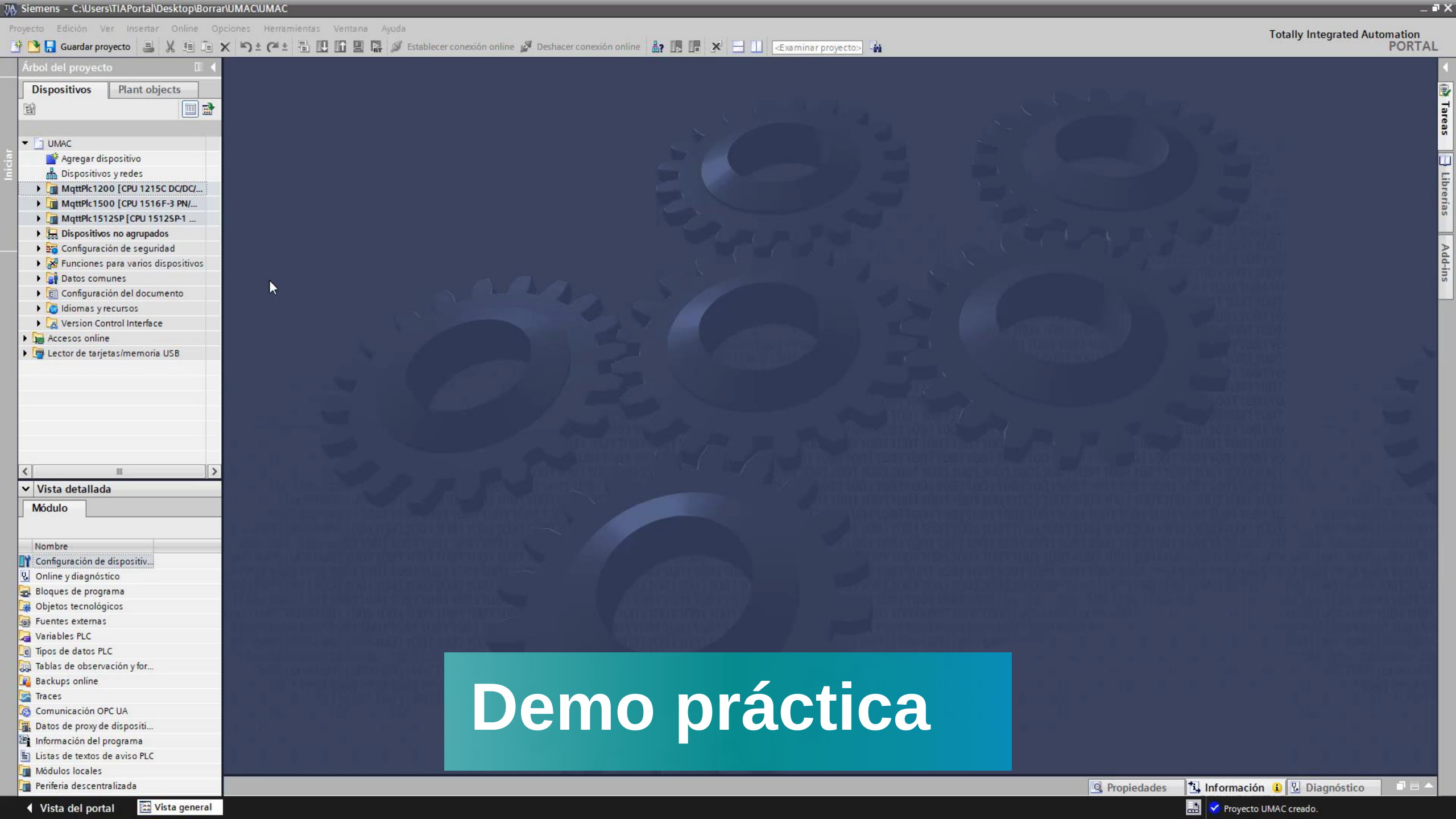
Siemens - C:\Users\TIAPortal\Desktop\Borrar\UMAC\UMAC
Proyecto Edición Ver Insertar Online Opciones Herramientas Ventana Ayuda
Guardar proyecto
Establecer conexión online
Deshacer conexión online
<Examinar proyecto>
Totally Integrated Automation
PORTAL
Árbol del proyecto
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Plant objects
UMAC
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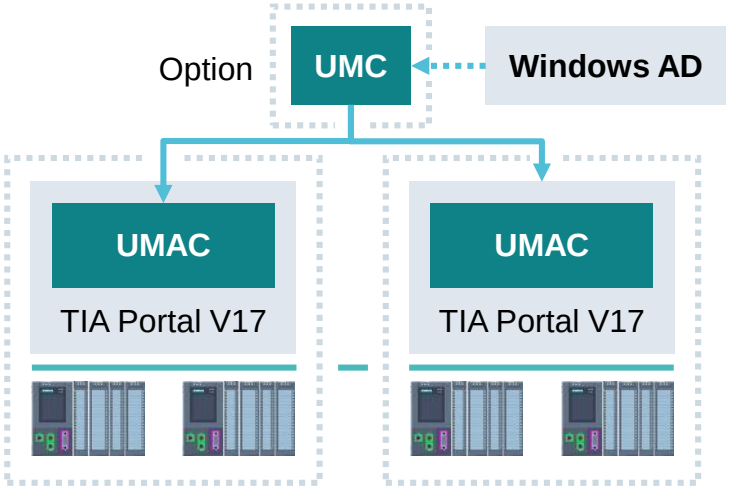
MqttPlc1512SP [CPU 1512SP-1 ...
Dispositivos no agrupados
Configuración de seguridad
Funciones para varios dispositivos
Datos comunes
Configuración del documento
Idiomas y recursos
Version Control Interface
Accesos online
Lector de tarjetas/memoria USB
Vista detallada
Módulo
Nombre
Configuración de dispositiv...
Online y diagnóstico
Bloques de programa
Objetos tecnológicos
Fuentes externas
Variables PLC
Tipos de datos PLC
Tablas de observación y for...
Backups online
Traces
Comunicación OPC UA
Datos de proxy de dispositi...
Información del programa
Listas de textos de aviso PLC
Módulos locales
Periferia descentralizada
Tareas
Librerías
Add-ins
Iniciar
Demo práctica
Propiedades
Información
Diagnóstico
Vista del portal
Vista general
Proyecto UMAC creado.

Security on TIA Portal
TIA Portal User Management & Access Control (UMAC)

UMC: User Management Component

- Extends UMAC by optional use
- Manages users/groups outside TIA Portal projects
- Import of needed UMC users/groups into TIA Portal projects
- Assigning project roles to them
- Authenticates UMC users' logins afterwards



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TIA Portal AddOns Novedades

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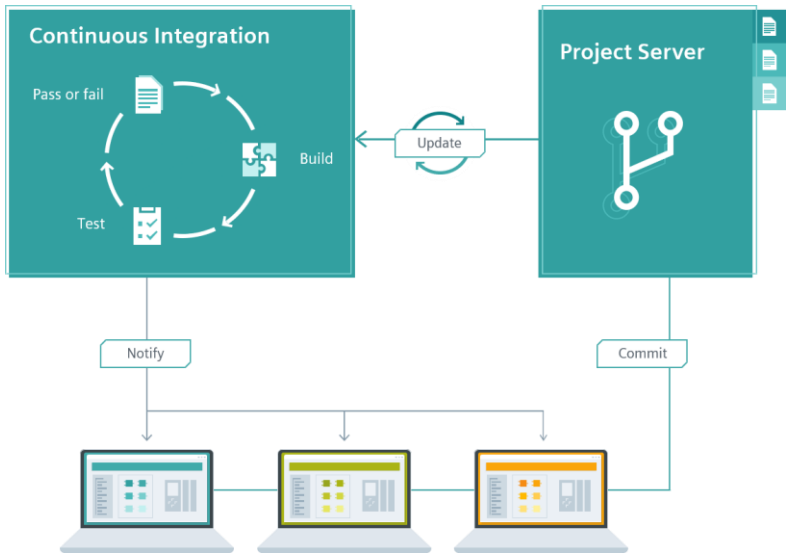
News on AddOns
Multiuser



Multiuser

- Local sessions can be saved on network drives and additionally as TIA Portal archive (single project)

TIA Portal project server

- All user IDs are now saved during check-in
- Export and import of projects is possible directly via the Administration Tool

Multiuser Openness

- Openness functions can be used in a Multiuser session. This allows the use of existing Openness applications within Multiuser Engineering
- With TIA Portal V17, new Multiuser Openness APIs are available for integrating multiuser workflows into your own automation processes
- Combining Openness functions and the new Multiuser Openness APIs enables efficient, automated Multiuser operations via own applications or in TIA Portal add-ins. For example this can be used for automated library comparison and update of plant projects

Multiuser commissioning

- With V17, the asynchronous Commissioning mode supports the loading of controllers with activated access protection and of program changes to the F program part in the background and thus reduces the downloading time

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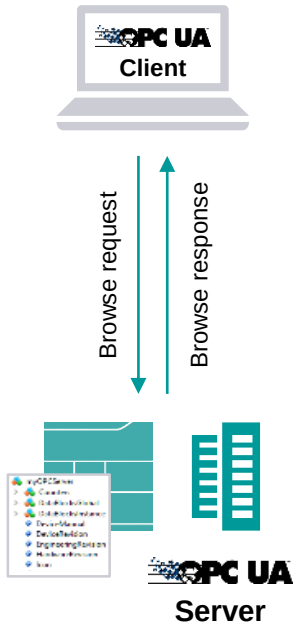
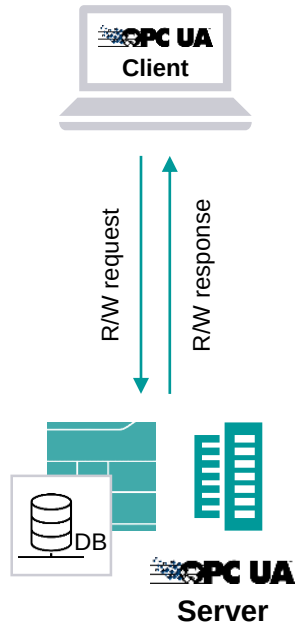
News on AddOns
OPC UA – S7-1200 V4.5

Browsing



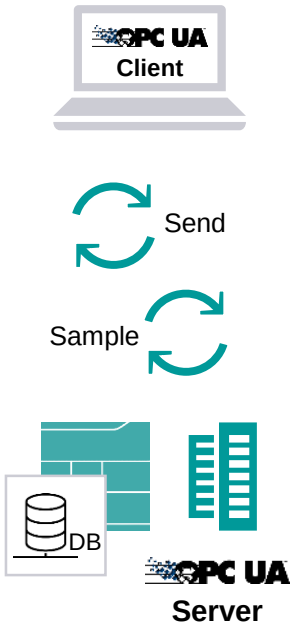
Browsing CPU data

Read/ write



Asynchronous data access

Subscription



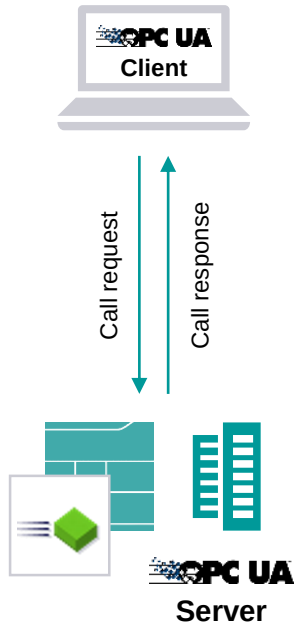
Load reduction for HMI applications

Companion specification

Information modeling

Methods

V4.5



Consistent data transfer

Supports

- Structured data types and arrays

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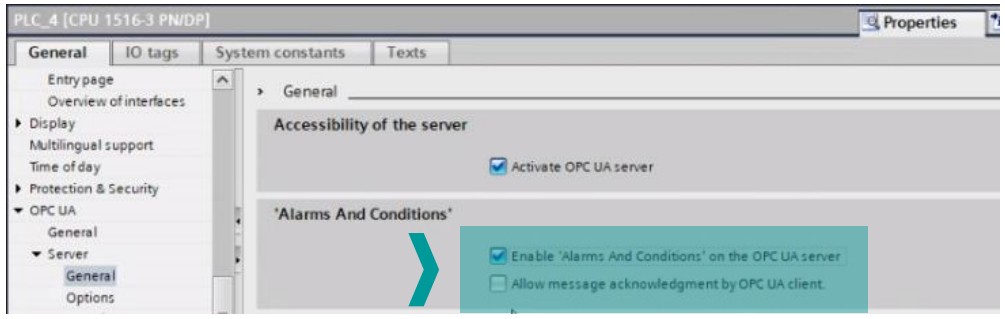
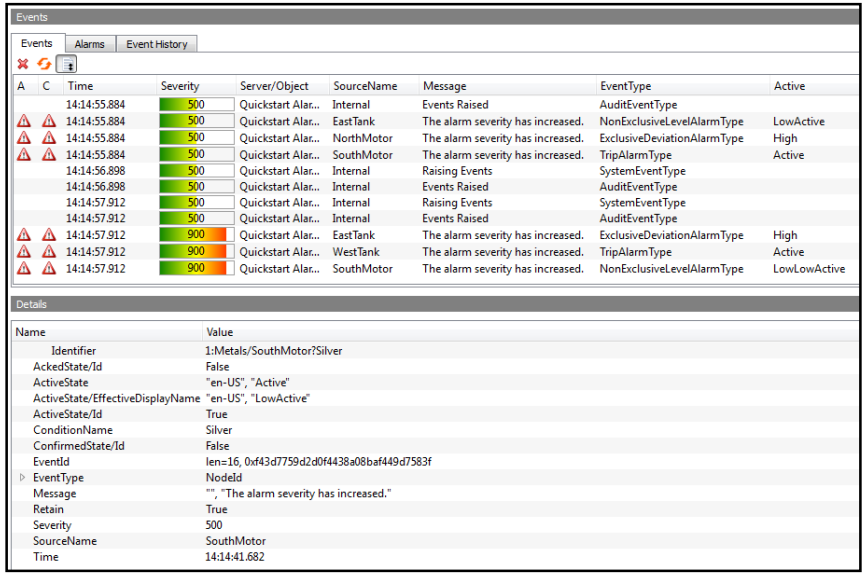
News on AddOns
OPC UA – S7-1500 Alarms & Conditions





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

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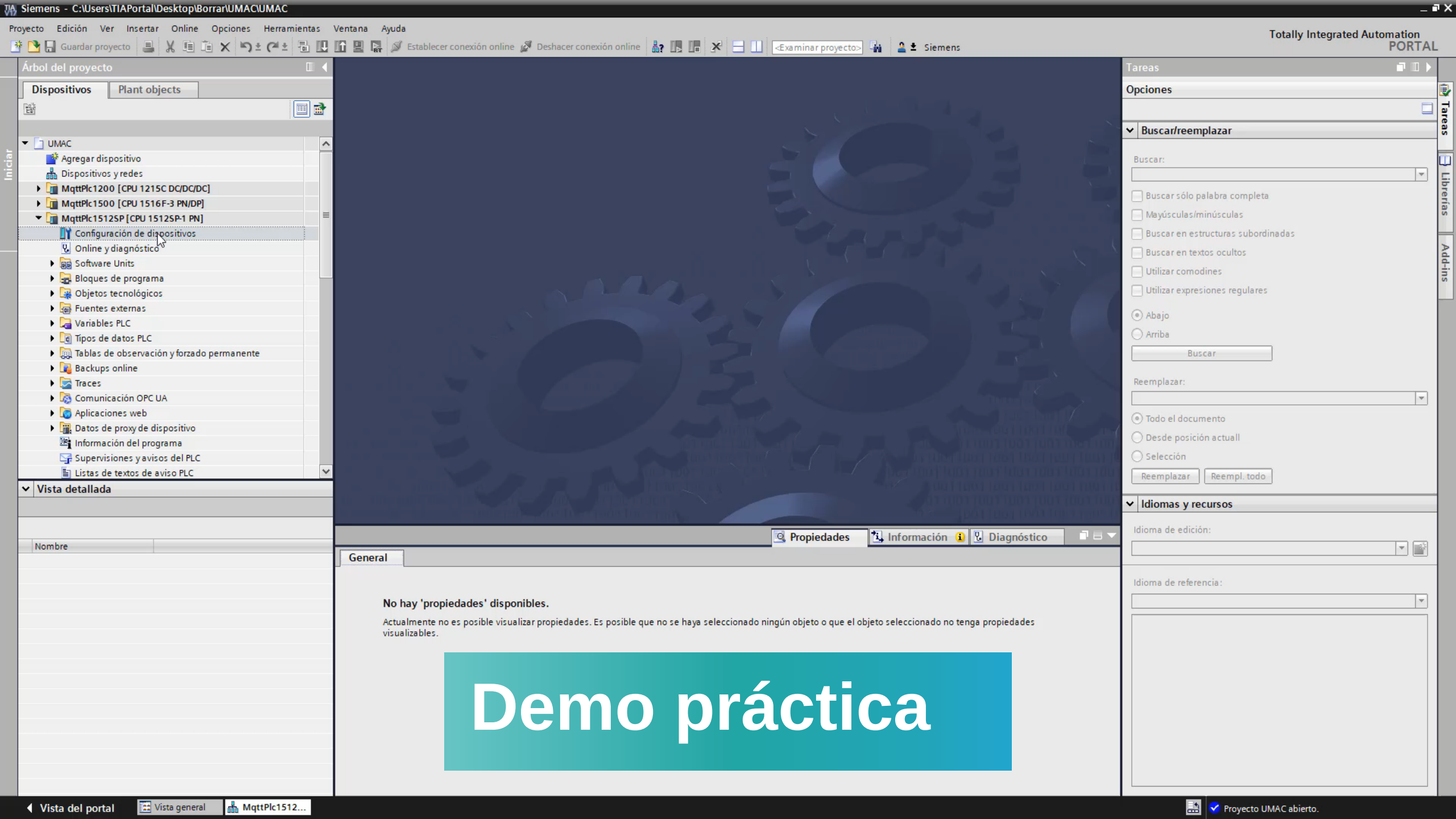
Siemens - C:\Users\TIAPortal\Desktop\Borrar\UMAC\UMAC
Proyecto Edición Ver Insertar Online Opciones Herramientas Ventana Ayuda
Totally Integrated Automation PORTAL
Árbol del proyecto
Dispositivos
Plant objects
UMAC
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Configuración de dispositivos
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Bloques de programa
Objetos tecnológicos
Fuentes externas
Variables PLC
Tipos de datos PLC
Tablas de observación y forzado permanente
Backups online
Traces
Comunicación OPC UA
Aplicaciones web
Datos de proxy de dispositivo
Información del programa
Supervisiones y avisos del PLC
Listas de textos de aviso PLC
Vista detallada
Nombre
Tareas
Opciones
Buscar/reemplazar
Buscar:
Buscar sólo palabra completa
Mayúsculas/minúsculas
Buscar en estructuras subordinadas
Buscar en textos ocultos
Utilizar comodines
Utilizar expresiones regulares
Abajo
Arriba
Buscar
Reemplazar:
Todo el documento
Desde posición actuall
Selección
Reemplazar
Reempl. todo
Idiomas y recursos
Idioma de edición:
Idioma de referencia:
Propiedades
Información
Diagnóstico
General
No hay 'propiedades' disponibles.
Actualmente no es posible visualizar propiedades. Es posible que no se haya seleccionado ningún objeto o que el objeto seleccionado no tenga propiedades visualizables.
Demo práctica
Vista del portal
Vista general
MqttPlc1512...
Proyecto UMAC abierto.

News on AddOns
OPC UA – Client compact blocks

Communication

Name	Description	Version
OPC UA		
OPC UA client		V2.1
Establish session		
OPC_UA_Connect	Create connection	V1.0
OPC_UA_NamespaceGe..	Read namespace indexe	V1.0
OPC_UA_NodeGetHand...	Get handles for read an..	V1.0
OPC_UA_MethodGetHa...	Get handles for metho...	V1.0
OPC_UA_TranslatePathL...	Get actual NodeIds	V1.0
Data Access (DA)		
OPC_UA_ReadList	Read tags	V1.0
OPC_UA_WriteList	Write tags	V1.0
OPC_UA_MethodCall	Call method	V1.0
Clear session		
OPC_UA_NodeReleaseH...	Release handles for rea..	V1.0
OPC_UA_MethodReleas...	Release handles for me..	V1.0
OPC_UA_Disconnect	Close connection	V1.0
Diagnostics		
OPC_UA_ConnectionGe...	Read connection status	V1.0

New, simplified blocks for handling

- Read
- Write
- Methods

Communication

Name	Description	Version
S7 communication		V1.3
Open user communication		V7.0
OPC UA		
OPC UA client		V3.0
Compact blocks		
OPC_UA_ReadList_C	Create Connection and read Tags	V1.0
OPC_UA_WriteList_C	Create Connection and write tags	V1.0
OPC_UA_MethodCall_C	Create Connection and call method	V1.0

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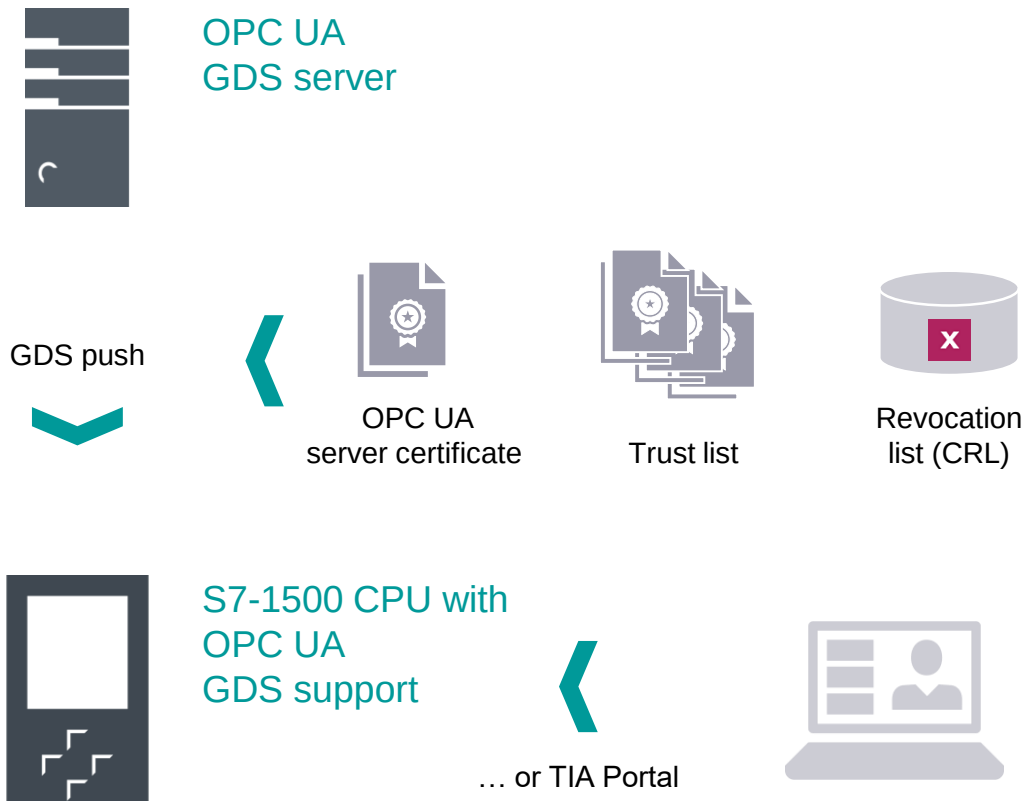
News on AddOns
OPC UA – Certificate management via OPC UA



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

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News on AddOns
PLCSIM Advanced – 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

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 S7-1504 D TF and S7-1507 D TF
- SIMATIC ET 200pro CPUs
- SIMATIC S7-1500 H(F)/R CPUs
- SIMATIC S7-1518 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.

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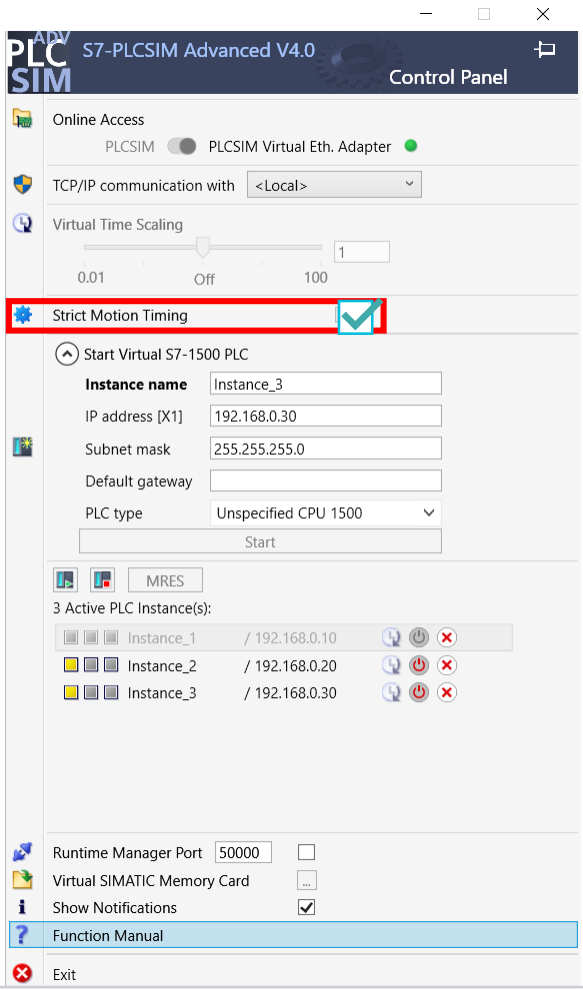
News on AddOns
PLCSIM Advanced – New operating mode “Strict Motion Timing”



New Function

To silumate the Motion Control Functions for S7-1500 / S7-1500T CPUs precise and indentical to the real hardware a new operating mode have been implemented.

„Strict Motion Timing“

Strict Motion Timing “True” ☑ switches the buffer overflow detection "ON" (V3 behavior) The motion OBs are processed in each interval they called (e.g. 4 ms in cyclic mode). If the "Strict Motion Timing" mode is selected, the MC servo clock is synchronized with the PLC cycle in order to ensure the correct calculation analogous to the HW PLC including the original message behavior in the diagnostic buffer. The function can be specified globally via the GUI or via the configuration file and globally via the API and per running instance. With the virtual time, the running speed can be adapted to the PC performance in order to avoid a STOP of the virtual PLC.

Default Mode:

Strict Motion Timing "False" ☐ switches the buffer overflow detection "OFF" (V2 behavior) The Motion OBs are called in every interval (e.g. 4 ms), but may not be processed because they were overtaken by the PLC cycle . The simulation is high-performance, which is helpful for co-simulations, but can be imprecise in detail because movements may still be calculated after they have already been stopped. The virtual time scale can be used to accelerate or decrease, and the PLC instance does not switch to STOP due to buffer overflows.

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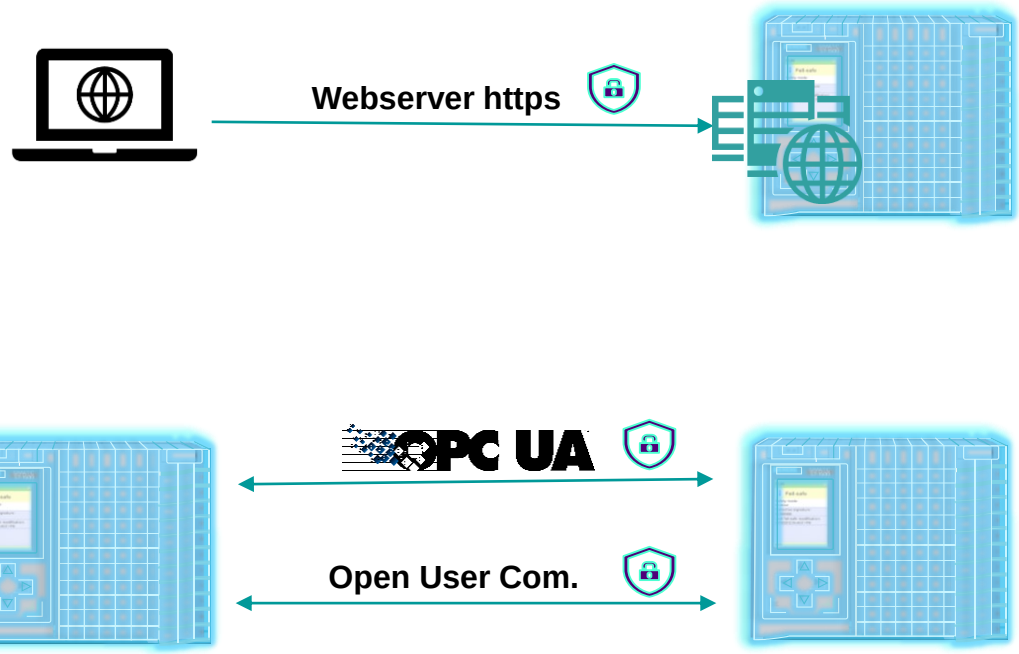
News on AddOns
PLCSIM Advanced – Simulation of secured communication connections



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.

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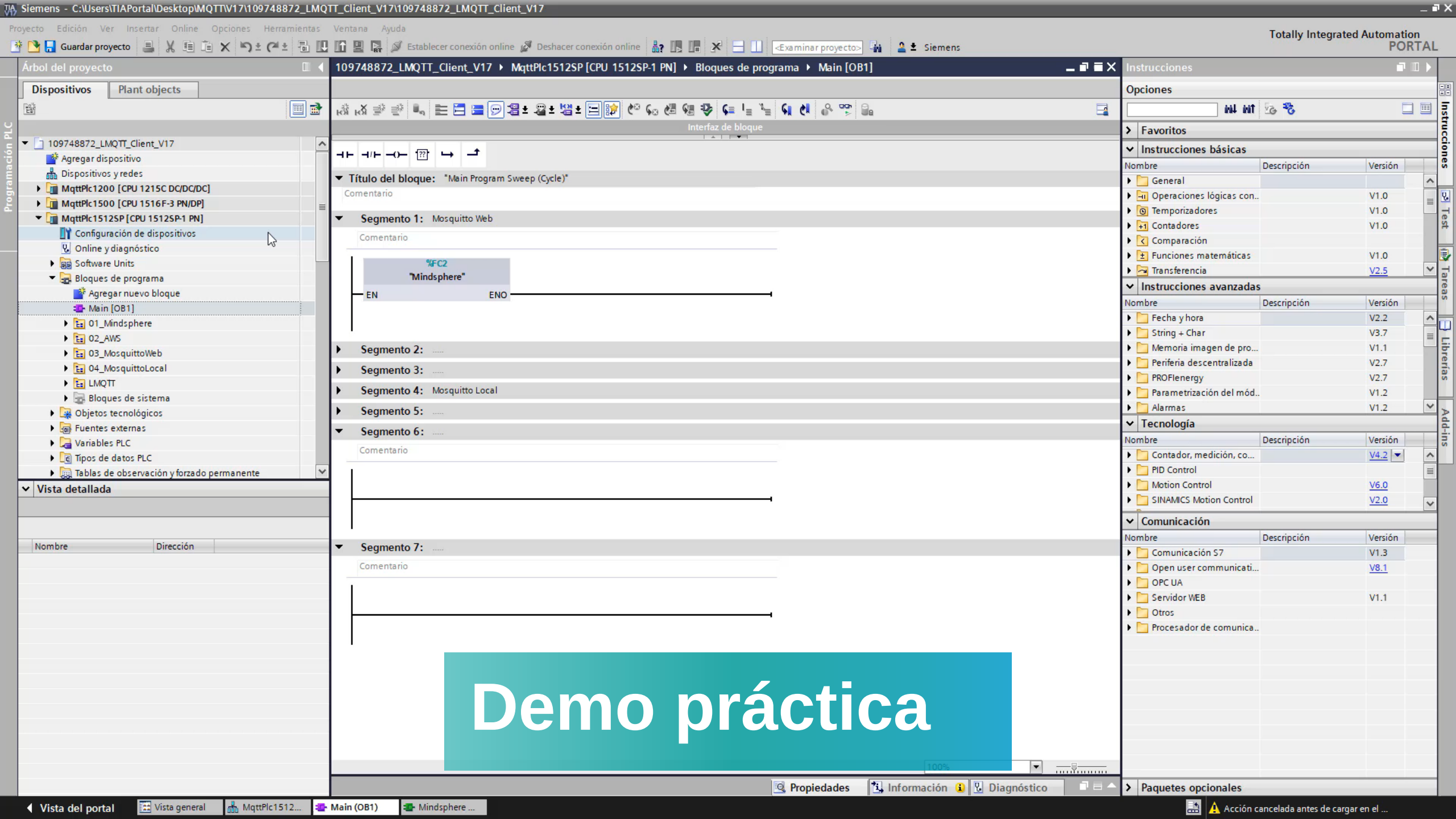
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Totally Integrated Automation PORTAL
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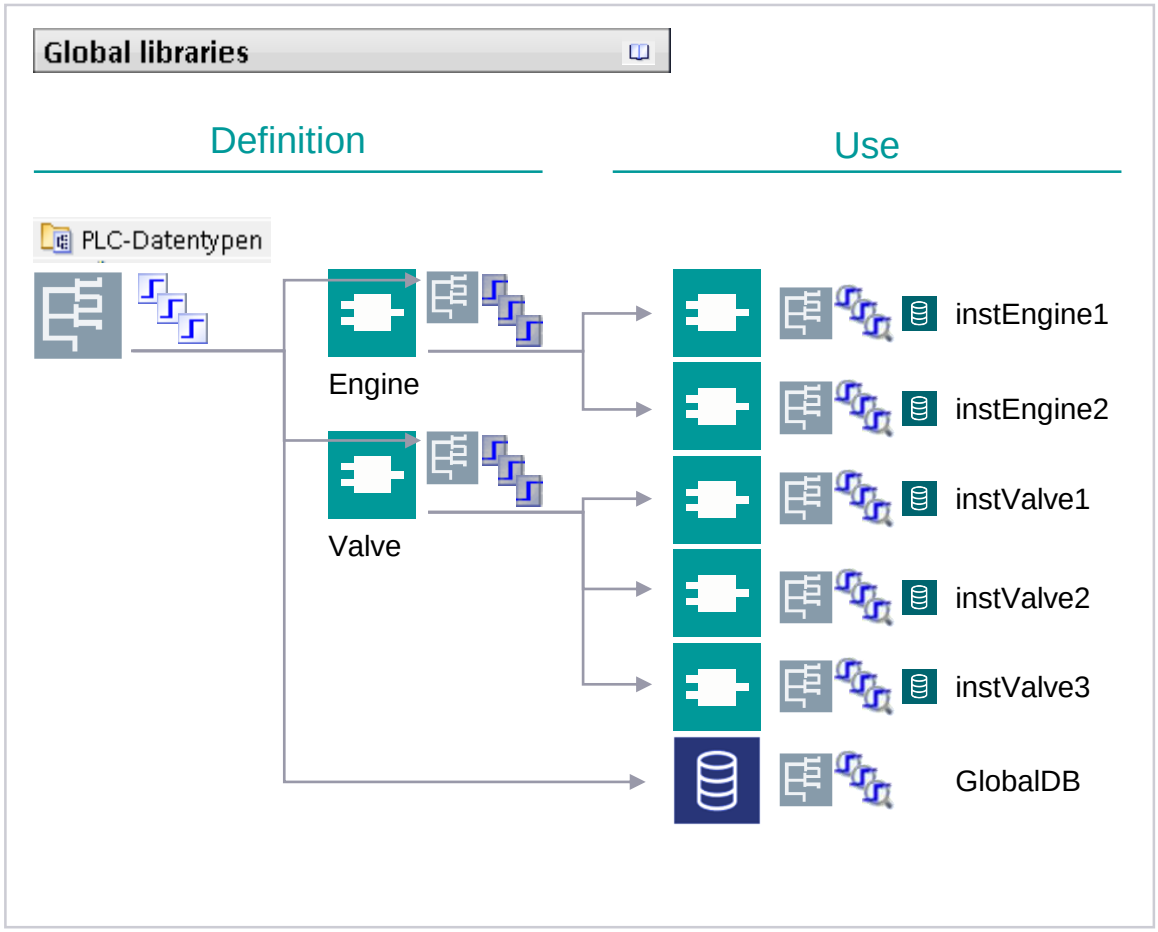
MqttPlc1512SP [CPU 1512SP-1 PN]
Configuración de dispositivos
Online y diagnóstico
Software Units
Bloques de programa
Agregar nuevo bloque
Main [OB1]
01_Mindsphere
02_AWS
03_MosquittoWeb
04_MosquittoLocal
LMQTT
Bloques de sistema
Objetos tecnológicos
Fuentes externas
Variables PLC
Tipos de datos PLC
Tablas de observación y forzado permanente
Vista detallada
Nombre
Dirección
109748872_LMQTT_Client_V17 ▸ MqttPlc1512SP [CPU 1512SP-1 PN] ▸ Bloques de programa ▸ Main [OB1]
Interfaz de bloque
Título del bloque: "Main Program Sweep (Cycle)"
Comentario
Segmento 1: Mosquitto Web
%FC2
"Mindsphere"
EN
ENO
Segmento 2:
Segmento 3:
Segmento 4: Mosquitto Local
Segmento 5:
Segmento 6:
Segmento 7:
Demo práctica
Instrucciones
Opciones
Favoritos
Instrucciones básicas
Nombre
Descripción
Versión
General
Operaciones lógicas con..
Temporizadores
Contadores
Comparación
Funciones matemáticas
Transferencia
Instrucciones avanzadas
Fecha y hora
String + Char
Memoria imagen de pro...
Periferia descentralizada
PROFIenergy
Parametrización del mód..
Alarmas
Tecnología
Contador, medición, co...
PID Control
Motion Control
SINAMICS Motion Control
Comunicación
Comunicación S7
Open user communicati...
OPC UA
Servidor WEB
Otros
Procesador de comunica..
Paquetes opcionales
Propiedades
Información
Diagnóstico
Vista del portal
Vista general
MqttPlc1512...
Main (OB1)
Mindsphere ...
Acción cancelada antes de cargar en el ...

News on AddOns
ProDiag– Supervisions in PLC data types



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 block need not necessarily 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.

= editable supervision function at the type

= supervision function is in a subordinate object

= actual supervision instance (with supervision code)

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TIA Portal –
Catálogo de ofertas

http://siemens.es/starterkits

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Muchas gracias

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