

TIA Portal v17, webbinarieserie i tre delar

Webbinarium 3: TIA Portal V17 med Motion Control i fokus

Varför ska du uppdatera Siemens engineeringportal, TIA Portal, till V17?



Webbinarium 1: TIA Portal V17 med PLC i fokus

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



Webbinarium 2: TIA Portal V17 med WinCC Unified i fokus

Datum och tid: 1 december 10:00–10:45



Webbinarium 3: TIA Portal V17 med Motion Control i fokus

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



 [Ralf Folke](#)



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 [Stefan Käck](#)

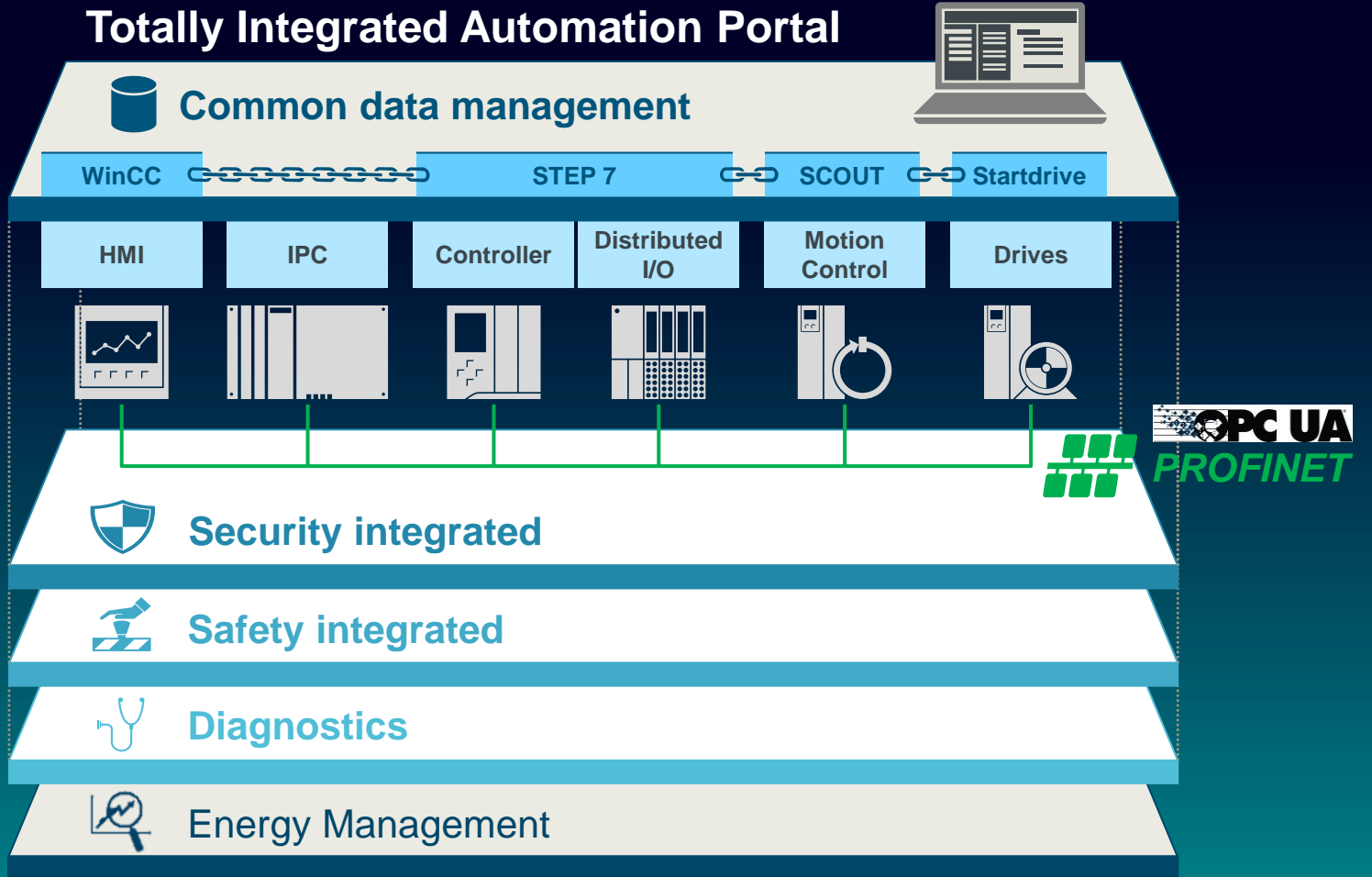
Totally Integrated Automation Portal (TIA Portal)

One for all... The proven basis for innovative solutions

+ One common database

+ Consistent and unified operator concept

+ Common, central services



POLL

Föredrar du att ha Motion Control centralt i styrsystemet eller decentralt i driven?

I Styrsystemet.

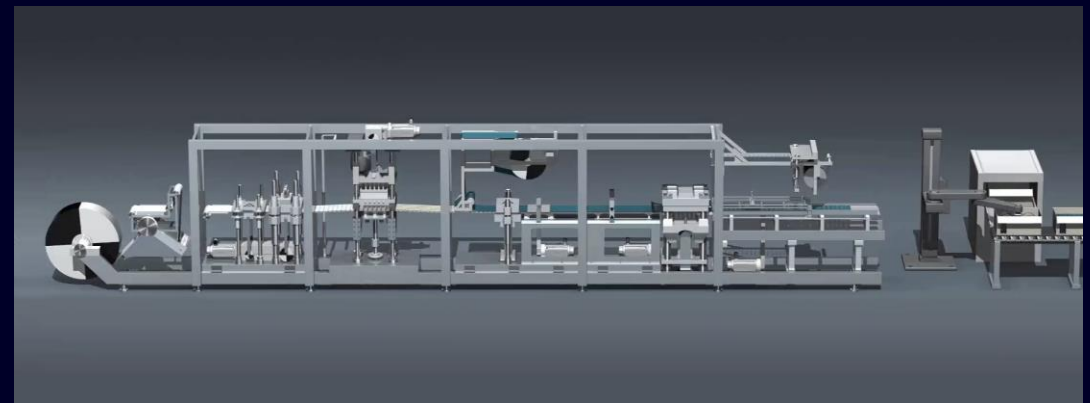
I Driven.

From simple to challenging, SIMATIC Technology! Motion Control - made easy!



SIMATIC Controller
SIMATIC Open Controller
SIMATIC Drive Controller

Single Axis
Coordinated Axis
Kinematic functions
Position detection



Motion Control Innovations – TIA Portal V17 / FW V2.9

Extension of the SIMATIC Controller Portfolio

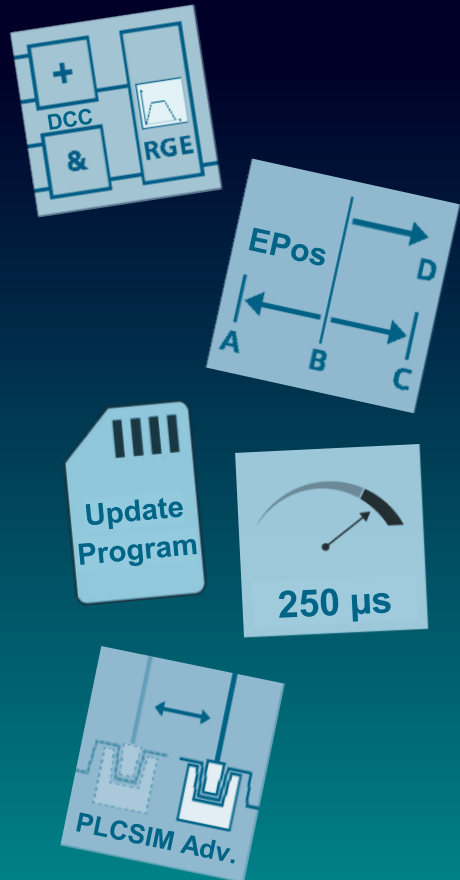
CPU 1518T-4 PN/DP and CPU 1518TF-4 PN/DP



Feature / Function	Benefit
High-performance SIMATIC controller for the high-end motion control market	<ul style="list-style-type: none"> Increased performance for sophisticated applications (up to 192 positioning axes)
Significant memory increase compared to CPU 1517 T/TF: <ul style="list-style-type: none"> - Program memory 9 MB (Factor 3) - Data memory 60 MB (Factor 7,5) 	<ul style="list-style-type: none"> More memory for high quantity structures (axes, program size, I/Os etc.) and standardization / modularization of machines
Third PROFINET interface	<ul style="list-style-type: none"> Usable for basic services e.g. OPC UA or TCP/IP communication

Motion Control Innovations – TIA Portal V17 / FW V2.9 Extension at SIMATIC Drive Controller

CPU 1504D TF and CPU 1507D TF

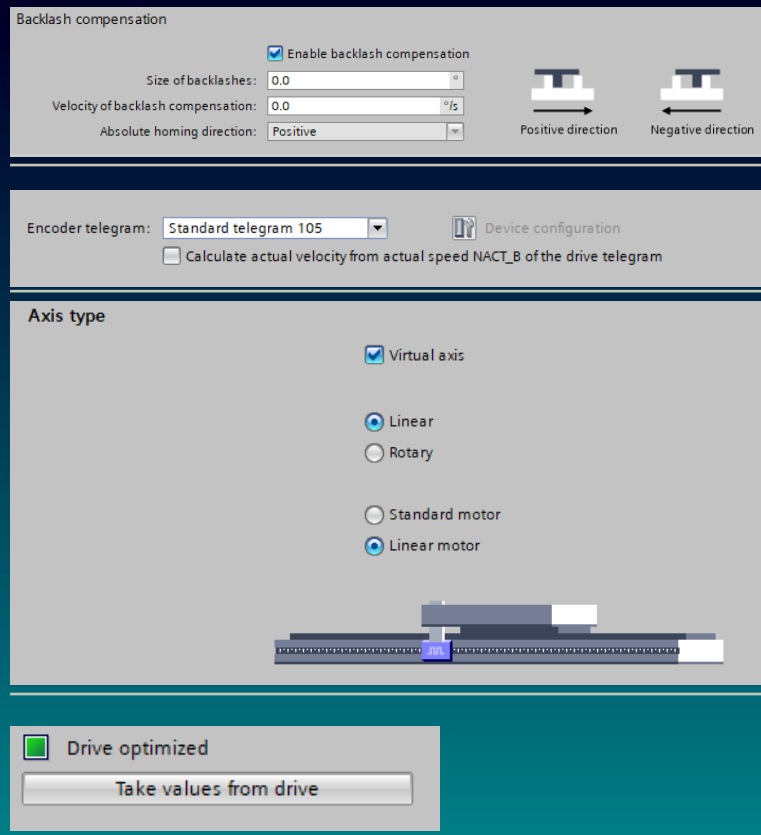


Feature / Function	Benefit
<p>New Firmware:</p> <ul style="list-style-type: none"> • PLC FW V2.9 • SINAMICS Integrated FW V5.2 SP3 	<ul style="list-style-type: none"> • For function extensions see PLC FW V2.9 and SINAMICS S120 FW V5.2 SP3 • PLC and SINAMICS FW independently changeable from each other
<p>Extended functionality of the SINAMICS Integrated:</p> <ul style="list-style-type: none"> • DCC/DCB • EPos • Additionally supported SINAMICS licenses: <ul style="list-style-type: none"> - Cogging torque compensation - Advanced Position Control (APC) - SERVCOUPL (Servo Coupling) - ... 	<ul style="list-style-type: none"> • DCC/DCB: free-available control, calculation and logic blocks for the extension of the drive functionality; e.g. for changing / adapting the controller setpoint channel in a very fast cycle • EPos: Implement positioning tasks directly in the drive • Additional licenses for extended applications: <ul style="list-style-type: none"> - Compensation of periodic cogging torque - Active suppression of vibrations in the drive system - Coupling of several motor modules with one encoder - ...
<p>Setting the card type using the FUNCT key (without ES and without Card Reader)</p>	<ul style="list-style-type: none"> • Memory card can be used both as program and firmware card; simplifies e.g. module exchange
<p>CPU 1507D TF: Reduction of the minimum application cycle time from 500 µs to 250 µs</p>	<ul style="list-style-type: none"> • Higher machine cycle times, improved machine behavior for sophisticated motion control applications
<p>PLCSIM Advanced with Drive Controller</p>	<ul style="list-style-type: none"> • Realistic function test of the user program, for early error detection and validation of the functionality

Motion Control Innovations – TIA Portal V17 / FW V2.9

Functional extensions on the technology object axis

S7-1500 and S7-1500 T-CPU

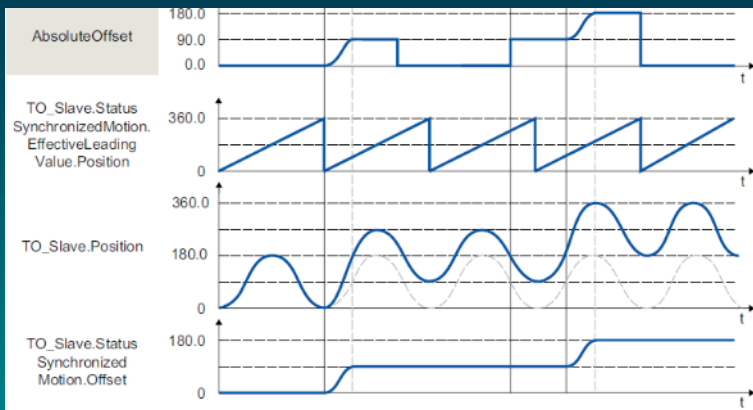
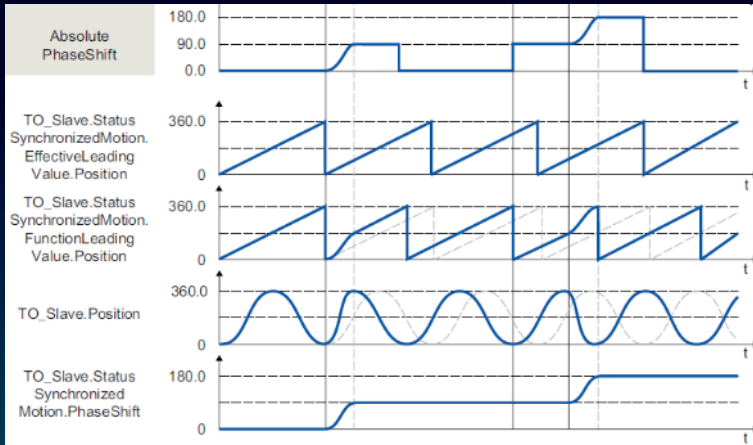


Feature / Function	Benefit
Backlash compensation – Compensate backlash in the mechanics	<ul style="list-style-type: none"> Increasing movement accuracy without additional programming effort
Take over actual speed (NIST) from telegram	<ul style="list-style-type: none"> The speed determined in the drive is used for the control. This results in a higher control quality, especially for encoders with low resolution.
Connection and configuration of linear motors	<ul style="list-style-type: none"> Usable for electric linear or hydraulic drives Measurement units "Force (F)" is configurable on the axis
Automatic optimization of the axis	<ul style="list-style-type: none"> Automatic optimization of the axis with a few clicks. In the TO configuration the optimization of the drive can be initiated in Startdrive and the determined parameters can be taken over for the position controller
Functional extension of the drive and encoder connection via data blocks	<ul style="list-style-type: none"> Extension of the programming possibilities by using arrays and structures for the connection via DBs

Motion Control Innovations – TIA Portal V17 / FW V2.9

Functional extensions of synchronized axes

S7-1500 T-CPU



Feature / Function

Desynchronize gearing and camming stopping the following axis at a defined position (MC_GearOut, MC_CamOut)

Leading value coupled correction profiles on the following axis (MC_PhasingAbsolute/Relative, MC_OffsetAbsolute/Relative)

Change or scale a cam at the end of an active cam

New cam profile type with 10,000 points and 50 polynomial segments

Benefit

- Simple programming of synchronization functions without additional effort (e.g. in OB1)

- Simple programming of synchronized compensation/correction movements without additional effort (e.g. in OB1)

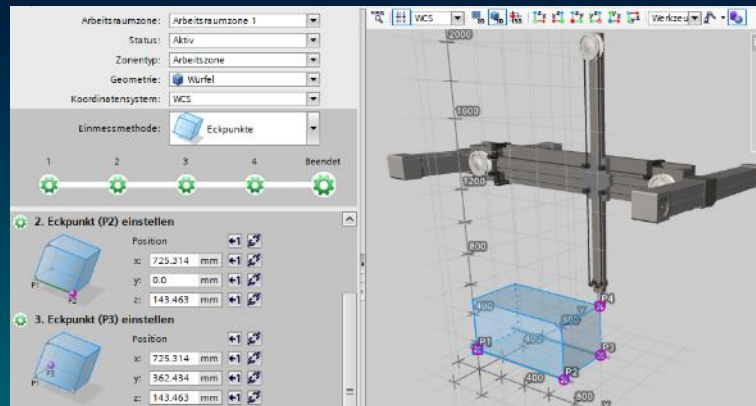
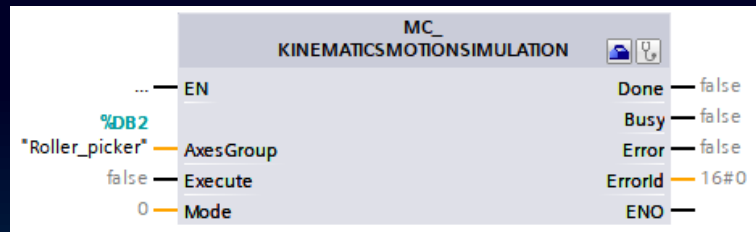
- Simple programming of cam profile changes without additional effort (e.g. OB1)

- Higher accuracy for complex cam profiles

Motion Control Innovations – TIA Portal V17 / FW V2.9

Functional extensions for kinematics

S7-1500 T-CPU



Feature / Function

New instruction
"MC_KinematicsMotionSimulation"

Dynamic adaptation in the kinematics control panel is provided via the operating mode "Jog to target position".

Offline- and online calibration of workspace zones

Travelled distance and the total distance of path movements (linear, circular) without conveyor tracking are displayed in variables

Configuration of rounding clearance > 50 % of the shorter path distance.

The number of prepared commands in the job sequence is displayed in a variable.

Benefit

- Enables the continuation of a kinematics movement after disabling and re-enabling the kinematics axes

- In the mode "Jog to target position" of the kinematics control panel, the "Dynamic adaptation without segmentation of the path" is active – the dynamic limits of the kinematics axes are taken into account.

- Comfortable definition of workspace zones with graphical support

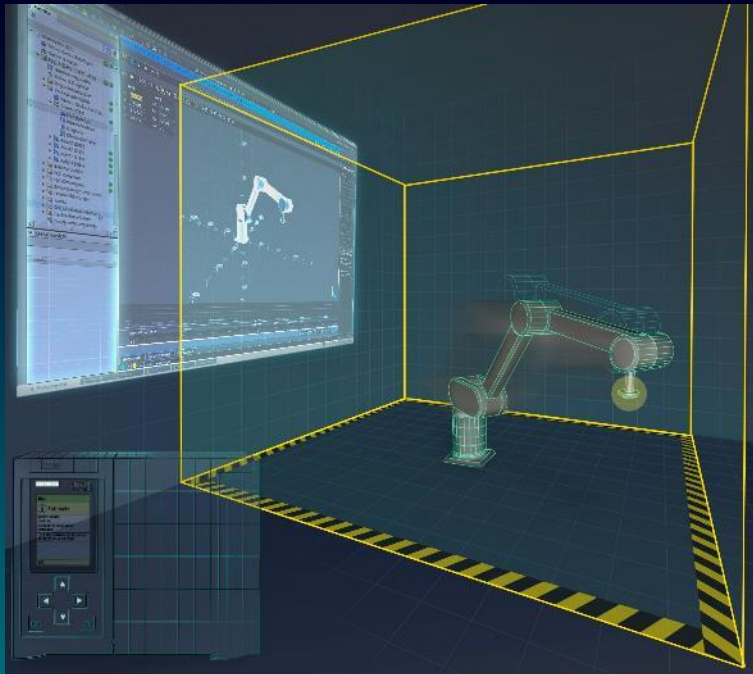
- Trigger events on a certain summed up path length in applications without conveyor tracking.

- Shorter paths by increasing the rounding clearing distance

- Start of the kinematics motion after the motion preparation is completed.

SIMATIC Safe Kinematics V2.0 – Fail-safe monitoring of kinematics movements in cartesian space

CPU 1517F-3 PN/DP, CPU 1518F-4 PN/DP and CPU 1517TF-3 PN/DP, CPU 1515SP PC2 TF



Feature / Function

System integrated and certified fail-safe solution according to
SIL3 (IEC 61508 and IEC 62061)
PLe (ISO 13849-1)

Predefined kinematics
Monitoring the movement of predefined kinematics and free transformations in cartesian space with up to 12 interpolating axes

Safe zone monitoring
User-programmable zones for limiting the kinematics movement space and for programming area-dependent safety functions

Safe velocity monitoring
Monitoring of the cartesian velocity at user-defined monitoring points

Safe orientation monitoring
Monitoring of the tool flange orientation

Benefit

- No additional fail-safe hardware required
- No additional certification effort for the machine manufacturer

- Simple integration of predefined fail-safe function blocks for the monitoring of common kinematics types

- No need for cost-intensive and inflexible protection fences
- Compact machine design


- Complies with requirements for monitoring at the Tool Center Point according to EN ISO 10218
- Additional monitoring of individual points on the kinematics possible

- Activation of workpiece processing / handling depending on the angle of the tool to the floor

Modular Application Creator V2.0 (MAC)


S7-1500 and S7-1500 T-CPU




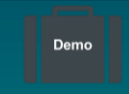
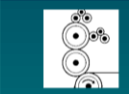
Modular Application Creator



- **Modularization and standardization**
- Management of **versioned projects & equipment modules**
- Easy configuration with **technological views and graphical guided assistance** as well as **automatic validation**
- **Generate instead of programming** TIA Portal projects

Equipment Modules



Weihenstephan	OMAC ¹	Intelligent Belt	Demo Modules	Printing Standards
				

1 Organization for Machine Automation and Control

Feature / Function	Benefit
Modularization and Standardisation	<ul style="list-style-type: none"> • Supports the user to organize its software for reuse
Management of versioned projects & equipment modules	<ul style="list-style-type: none"> • Versioning of modules ensure the reuse of specific applications and specific hardware • Versioning of projects ensures the fast finding of specific module version in combination with specific hardware and firmware
Easy configuration with technological views and graphical guided assistance	<ul style="list-style-type: none"> • Ensures an efficient configuration of all the needed parameters, in a technological view not in a programming tool in Bytes and Bits
Generate instead of programming TIA Portal projects	<ul style="list-style-type: none"> • Generation of the project needs some minutes instead of copying program blocks and configuration of all data manually in hours. • The generation process also ensures that all parameters and settings are right in place with no errors, the project is ready to commission
5 Modules available; customizing planned	<ul style="list-style-type: none"> • 3 modules for packaging applications available • A module to serve the printing standards • Customer own module building in preparation
Modularization and Standardisation	<ul style="list-style-type: none"> • Supports the user to organize its software for reuse

| Startdrive

Drives for **Continuous Motion**
SINAMICS G, S

Drives for **Discontinuous Motion**
SINAMICS S210, S120

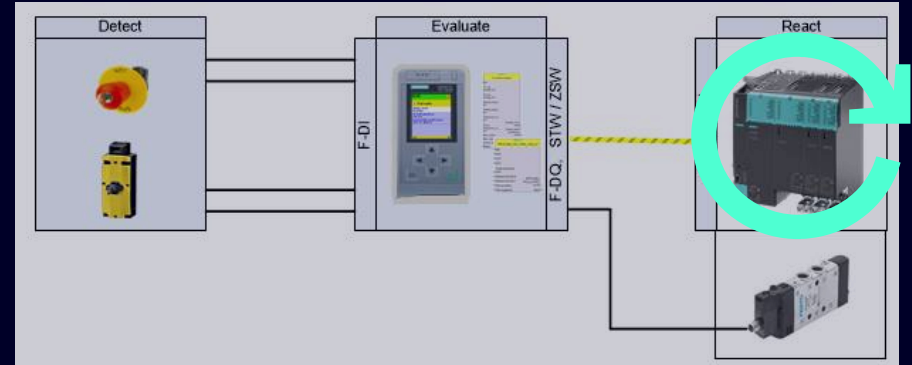
New Safety Activation Test

Difference between Acceptance Test and Activation Test

Safety Acceptance Test (existing since V15)

Validation of correct **safety parameterization for the integrated drive safety functions**. Clearance about questions such as:

- Are the braking ramps set correctly?
- Are the limitations and fault reactions set correctly?
- ...

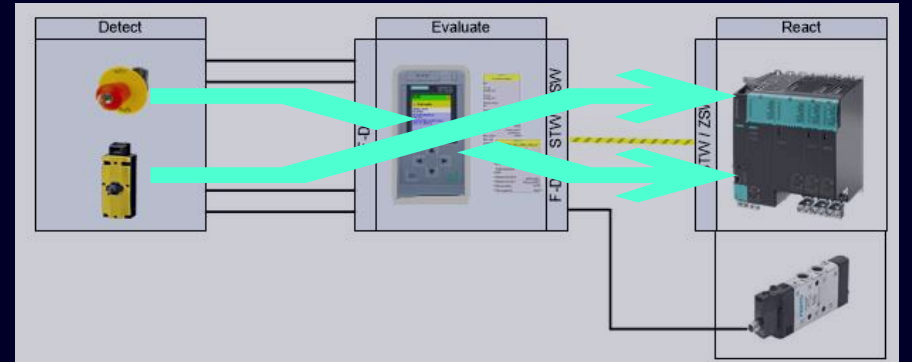


Safety Activation Test (NEW in V17)

Validation of the **safety control chain from sensor to actuator**.

Clearance about questions such as:

- Does every drive select the correct safety function when a safety sensor is activated?
- Are all safety functions realized according to the risk minimization?
- Are there wiring errors for the safety sensors?
- ...



New Safety Activation Test Workflow & required license

Workflow

1. Define all safety functions via the wizard: operation mode, input conditions, expected reaction (this step can be done by the project engineer already in advance to the commissioning phase)
2. After machine commissioning execute the tests and go through all defined safety functions using the guided step by step assistant
3. Automatic creation of the test protocol with all necessary information

! Safety validation is an important step on the way to the required CE-marking of the machine!

Step	Test description	Status
19	1. Einlebe Controller	OK
20	2. Die Maschine ist in operation mode 'automatik'. Action for test is executed	OK
21	2. Check machine	OK
22	The test conditions are fulfilled	OK
23	3. Complete the test	OK
24	The test is completed	OK
25	Test conditions and expectations	OK
26	Betriebsart	OK
27	Eingangsbedingungen	OK
28	Eingangsbedingungen (ausgeführt)	OK
29	Not-Halt Handbediengerät	OK
30	Not-Halt Handbediengerät	OK
31	Not-Halt Handbediengerät	OK
32	Not-Halt Handbediengerät	OK
33	Not-Halt Handbediengerät	OK
34	Not-Halt Handbediengerät	OK
35	Not-Halt Handbediengerät	OK
36	Not-Halt Handbediengerät	OK
37	Not-Halt Handbediengerät	OK
38	Not-Halt Handbediengerät	OK
39	Not-Halt Handbediengerät	OK
40	Not-Halt Handbediengerät	OK
41	Not-Halt Handbediengerät	OK
42	Not-Halt Handbediengerät	OK
43	Not-Halt Handbediengerät	OK
44	Not-Halt Handbediengerät	OK
45	Not-Halt Handbediengerät	OK
46	Not-Halt Handbediengerät	OK
47	Not-Halt Handbediengerät	OK
48	Not-Halt Handbediengerät	OK
49	Not-Halt Handbediengerät	OK
50	Not-Halt Handbediengerät	OK



Safety Activation Test is part of the Safety Acceptance Test and thus also part of the SINAMICS Startdrive Advanced license.

UMAC in TIA Portal

User Management and Access Control

What is UMAC?

Handling of **users** and their assigned **rights** for a TIA Portal project. Possibility to have Admin users or users with limited reading / editing rights. There is a wide range of predefined roles and the possibility of creating new roles with specific rights

→ Principle of least privilege



What's new for Startdrive V17?

New function rights for **drive parameterization** and **drive download** (separated from PLC / HMI handling).

→ Possibility of defining users which are allowed to edit drive parameterization but not the PLC program or vice versa

Engineering rights		Runtime rights	User-specific runtime rights
Engineering rights			
<input type="checkbox"/>	Name	Group	Comment
<input checked="" type="checkbox"/>	Maintenance	HMI	
<input checked="" type="checkbox"/>	Edit drive software configuration	Drives	
<input checked="" type="checkbox"/>	Download drive	Drives	
<input checked="" type="checkbox"/>	View security device configuration	Security	
<input checked="" type="checkbox"/>	Edit security device configuration	Security	
<input checked="" type="checkbox"/>	Import project texts	General	

New SIMATIC control for EPOS

BasicPosControl (S7-1200 / S7-1500; SINAMICS G + S)

- ! Name TO_BasicPos (V1.0 in TIA V16) changed to **BasicPosControl** (V2.0 in TIA V17).
- + Comfortable PLC control of drives with EPOS functionality via telegram 111.
- + Simple communication connection between PLC and drive, setup and diagnosis.
- + New **mechanics setup** for BasicPosControl → user can now work with **physical units** within the PLC program. Selection between linear and rotary axis with several units for position and velocity.
- + **Automatic** conversion from physical units (PLC program) to LU (drive data) by the function block.

Add new object

Name: BasicPosControl_2

Type: BasicPosControl

Number: 2

Description: The "BasicPosControl" function block supports the cyclic communication of the drive function addi of the phys

Name	Version
SINAMICS Motion Control	V2.0
BasicPosControl	V2.0

SINAMICS Technology

BasicPosControl

Input	Output
EN	ENO
0 ModePos	AxisEnabled → 0
0 EnableAxis	AxisPosOk → 0
CancelTraversin	AxisSpFixed → 0
1 g	AxisRef → 0
IntermediateSt	AxisWarn → 0
1 op	AxisError → 0
0 Positive	Lockout → 0
0 Negative	ActVelocity → 0.0
0 Jog1	ActPosition → 0.0
0 Jog2	ActMode → 0
0 FlyRef	EPosZSW1 → 0
0 AckError	EPosZSW2 → 0
0 ExecuteMode	ActWarn → 0
0.0 Position	ActFault → 0
0.0 Velocity	Error → 0
100 OverV	Status → 0
100 OverAcc	DiagId → 0
100 OverDec	
16#0000_0003 ConfigEPos	

New SIMATIC control for EPOS

BasicPosControl configuration

Basic parameter

Linear/rotary + unit selection

Basic parameter

Name: BasicPosControl_1

PLC → Technology object BasicPos → Drive → Motor

Axis type

Linear
 Rotary

Measuring unit

Measuring unit for position: mm
Measuring unit for velocity: mm/s

km
m
mm
µm
nm
in
ft
mi
LU
rad
LU

Mechanics

Automatic conversion of physical units to LU

Automatic data exchange for drive values (offline)

Drive parameters

Drive data set: 0
Reference speed p2000: 1500.0 rpm

Load gear

Number of motor revolutions p2504[0]: 1
Number of load revolutions p2505[0]: 1

Position parameters

Length units per load revolution p2506[0]: 10000 LU/rot
Leadscrew pitch: 10.0 mm/rot

Scaling parameters

Resolution: 1 mm ≈ 1000.0 LU
Velocity: 1 mm/s ≈ 60.0 1000LU/min

Technology Object and Drive Object

Improved interaction for optimization

One Button Tuning for servo drives...

...directly sets in the drive:

- K_p , T_n for speed controller
- Moment of inertia
- Current setpoint filters
- ...

...additionally calculates:

- Position controller gain K_v (r5276)
- Precontrol symmetrizing time (r5277)



NEW in V17

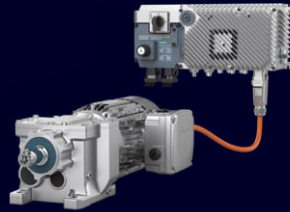
Calculated values for position control can be directly accepted for TO settings in the PLC.
(From TO version V6.0)

The screenshot shows the 'Control loop' configuration window for 'Position control'. It features a block diagram of the control system. The 'Controller' block contains 'Setpoint generation' which outputs 'Speed setpoint' and 'Position setpoint'. The 'Speed setpoint' goes to a 'Precontrol' block. The 'Position setpoint' goes to a 'Balancing filter' block. The outputs of both the 'Precontrol' and 'Balancing filter' blocks are summed at a junction. This sum then goes to a 'Gain' block. The output of the 'Gain' block is summed with the 'Actual position' feedback signal at another junction. The final output is the 'Speed setpoint' sent to the 'Drive' block. Below the diagram, there is a warning: 'The speed controller must be tuned on the drive side.' A blue box highlights the 'Drive optimized' checkbox and the 'Take values from drive' button. To the right, there is an 'Optimize values on drive' button and a text box stating: 'The value of the speed control loop substitute time and 50% of the gain value are taken from the drive.' At the bottom, there are three input fields: 'Precontrol: 100.0 %', 'Speed control loop substitute time: 0.0 s', and 'Gain (Kv factor): 0.0 1/s'.

SINAMICS G115D in Startdrive

Adding the drive and defining the type

Already since
V16 Upd 4



2a Specify wall mount version

General IO tags System constants Texts

Module selection

Select mounting type: Wall mount Motor mount

Selection	System article number	E.M. article number	Power Module type	Rated power	Supply voltage
<input type="radio"/>	6SL352xx0-3AFx	6SL3500-0XE50-3FAx	IP65/66, 0.37 kW, FA	0.37 kW	380 – 480 V
<input type="radio"/>	6SL352xx0-5AFx	6SL3500-0XE50-5FAx	IP65/66, 0.55 kW, FA	0.55 kW	380 – 480 V
<input type="radio"/>	6SL352xx0-7AFx	6SL3500-0XE50-7FAx	IP65/66, 0.75 kW, FA	0.75 kW	380 – 480 V
<input type="radio"/>	6SL352xx0-1-1AFx	6SL3500-0XE51-1FAx	IP65/66, 1.1 kW, FA	1.1 kW	380 – 480 V
<input type="radio"/>	6SL352xx0-1-5AFx	6SL3500-0XE51-5FAx	IP65/66, 1.5 kW, FA	1.5 kW	380 – 480 V
<input type="radio"/>	6SL352xx0-2-2AFx	6SL3500-0XE52-2FAx	IP65/66, 2.2 kW, FA	2.2 kW	380 – 480 V
<input type="radio"/>	6SL352xx0-3-0AFx	6SL3500-0XE53-0FAx	IP65/66, 3.0 kW, FA	3 kW	380 – 480 V
<input type="radio"/>	6SL352xx0-4-0AFx	6SL3500-0XE54-0FAx	IP65/66, 4.0 kW, FA	4 kW	380 – 480 V
<input type="radio"/>	6SL352xx0-5-5AFx	6SL3500-0XE55-5FAx	IP65/66, 5.5 kW, FA	5.5 kW	380 – 480 V
<input type="radio"/>	6SL352xx0-7-5AFx	6SL3500-0XE57-5FAx	IP65/66, 7.5 kW, FA	7.5 kW	380 – 480 V

1 Add G115D drive to TIA Portal project

Add new device

Device name: Drive_3

Controllers

HMI

Drives & starters

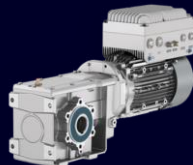
- SINAMICS drives
 - SINAMICS G110M
 - SINAMICS G120
 - SINAMICS G120C
 - SINAMICS G115D
 - G115D AS-i
 - G115D I/O
 - G115D PN**
 - SINAMICS G120D
 - SINAMICS G120P

Device: G115D PN

Article no.: xxxxxxxxxxxx

Version: 4.7.19

2b Specify motor mount version



General IO tags System constants Texts

Module selection

Select mounting type: Wall mount Motor mount

Enter order number: 2KJ8 003 - 2EG 1 0 - 4 F B1 - D O X

Go to commissioning:

SINAMICS G115D in Startdrive Commissioning wizard

3 Go through commissioning
wizard as known from SINAMICS
G drives



Note: Everything defined by MLFB
already preset! (motor data, holding
brake, temperature sensor, ...)

The screenshot shows the 'Commissioning Wizard' window. On the left is a navigation pane with the following items: 'Open-loop/closed-loop ...', 'Defaults of the setpoi...', 'Drive setting', 'Drive options', 'Motor', 'Motor holding brake', 'Important parameters', 'Drive functions', 'Encoders', and 'Summary'. The 'Defaults of the setpoi...' item is selected. The main area is titled 'Defaults of the setpoints/command sources' and contains the following text: 'Selection of a predefined interconnection of the inputs/outputs and, if required, the fieldbus telegram. Can be changed later user-specifically.' Below this is a dropdown menu for 'Select the default of the I/O configuration:' with the value '[67] Distributed conveyor technology with fieldbus (2) (33)'. A list of digital inputs (DI) is shown: DI 0: p1055[1] BI: Jog bit 0, p2084[0] BI: Binector-connector converter status word 5, Bit 0; DI 1: p1056[1] BI: Jog bit 1, p2084[1] BI: Binector-connector converter status word 5, Bit 1; DI 2: p2084[2] BI: Binector-connector converter status word 5, Bit 2, p2103[1] BI: 1st acknowledge faults, p2104[0] BI: 2nd acknowledge faults; DI 3: p2084[3] BI: Binector-connector converter status word 5, Bit 3; DI 24: p2084[4] BI: Binector-connector converter status word 5, Bit 4; DI 25: p2084[5] BI: Binector-connector converter status word 5, Bit 5. Below the list is a 'Telegram configuration:' dropdown menu with the value '[999] Free telegram configuration with BICO'. An information icon (i) is followed by the text: 'Free interconnection and length. Standard telegram 1 is selected with extensions.' Below that is an 'Online help' link with a green arrow icon. At the bottom are buttons for '<< Back', 'Next >>', 'Finish', and 'Cancel'.

SINAMICS G115D in Startdrive

New conveyor technology wizards (optional)

4 Find additional graphical wizards for onboard conveyor technology functions

Easy setup of conveyor functions such as:

- Conveyor
- Turntable
- Corner turntable lift
- Trolley

The screenshot displays the 'Conveyor technology' configuration wizard in the SINAMICS G115D Startdrive software. The interface is divided into several sections:

- Left-hand navigation menu:** Contains a tree view with categories like 'Basic settings', 'Inputs/outputs', 'Application functions', and 'Conveyor technology' (which is currently selected).
- Main configuration area:**
 - Selection of application:** A dropdown menu is set to 'Turntable'. There is a checkbox for 'Show graph view'.
 - High/low speed switching:** A checkbox is present, and radio buttons are selected for '3 positions'.
 - Effective setpoint:** A text input field shows '0.000 rpm'.
 - Actual speed:** A text input field shows '0.0 rpm' and an 'Application status' button.
 - Diagram:** A central circular diagram shows a turntable with three horizontal conveyor belts. Labels 'a', 'c', and 'e' are placed around the diagram to correspond with the sensor settings on the right.
- Right-hand sensor configuration panel:**
 - Main setpoint:** A dropdown menu shows 'r2050[1] CO: PROFIdrive P2D rec'.
 - Stop sensor +:** A slider control with a circular indicator labeled 'a' is set to '0'.
 - Stop sensor -:** A slider control with a circular indicator labeled 'c' is set to '0'.
 - Stop sensor center:** A slider control with a circular indicator labeled 'e' is set to '0'.
 - Stop sensor trigger type:** A dropdown menu is set to '[2] Input signal 0 level'.
 - Stop sensor override:** A dropdown menu is set to 'r2094.2 CO/BO: Connector-bi'.
 - End position:** A dropdown menu is set to '[1] Yes'.

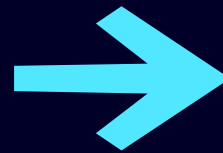
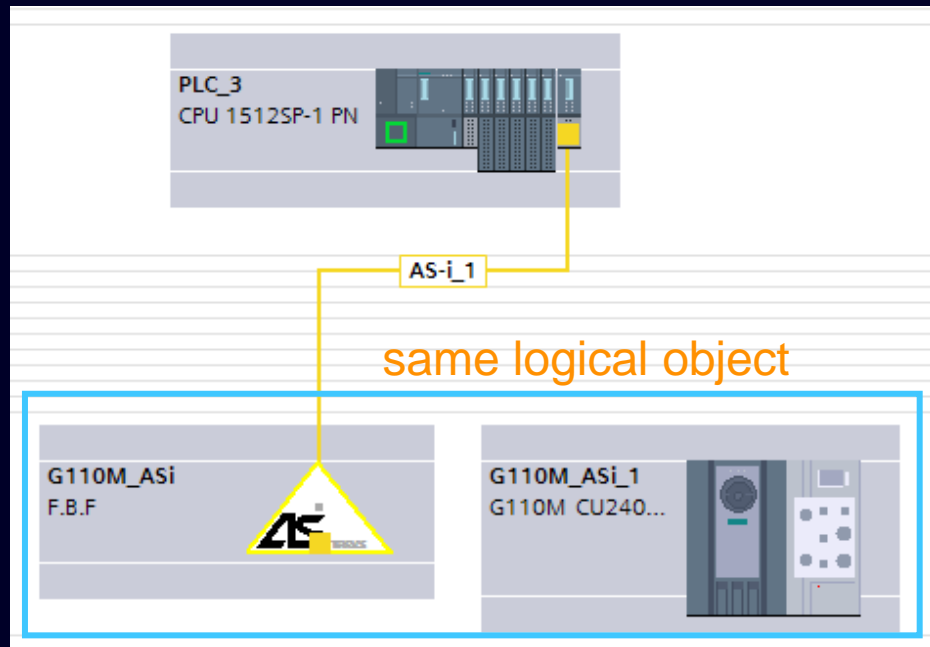
New features for AS-i drives

Device integration

AS-i integration with Startdrive <=V16

Two devices in the network for one drive needed:

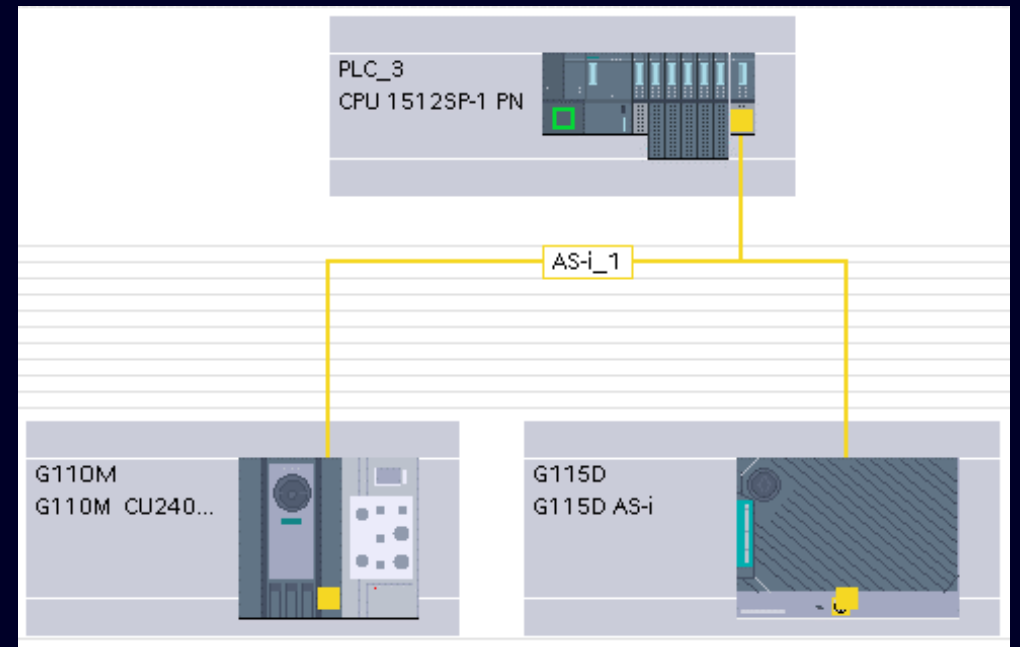
- Universal AS-i Slave for communication settings
- Startdrive object for drive settings



AS-i integration with Startdrive V17

One object for communication and drive settings

- ! Valid only for connection to ET200 CPU
- AS-i master





SINAMICS S120 extensions

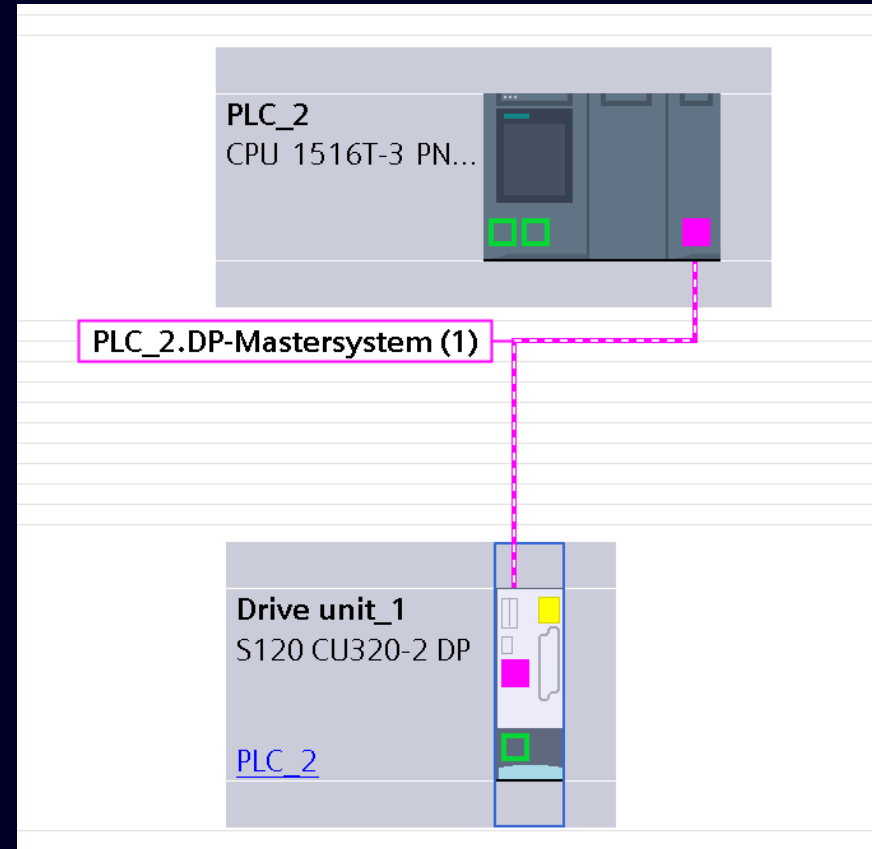
New hardware for SINAMICS S120 CU320-2 DP (PROFIBUS version)

NEW in V17

SINAMICS S120 drives can now also be handled with the **PROFIBUS** version CU320-2 DP.

Available for:

- SINAMICS S120 Booksize
- SINAMICS S120 Chassis



New features for SINAMICS S120

Data Set handling

+ Drive Data Sets

+ Motor Data Sets

+ Encoder Data Sets

+ Command Data Sets

Drive data sets DDS

Drive data set configuration

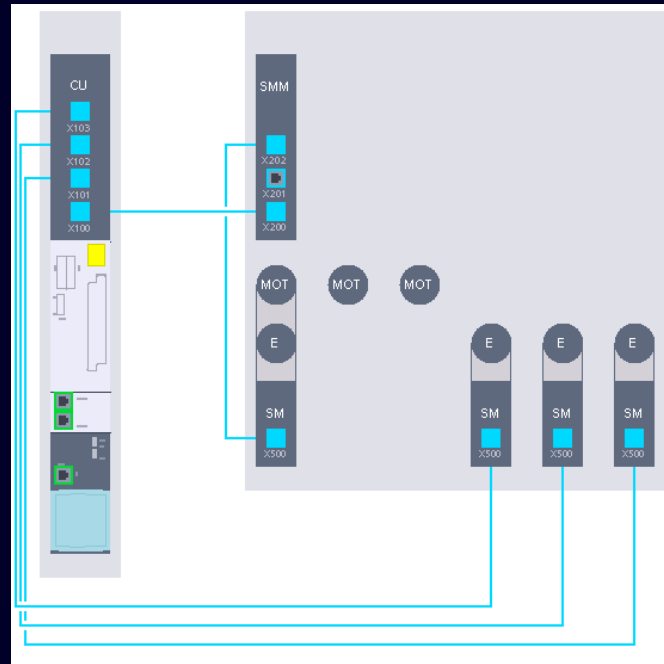
Drive data set	Motor data set	Motor encoder	External encoder 1	External encoder 2
DDS0	MDS0: Motor_1	EDS0: Measuring system...	EDS1: Measuring s...	EDS2: Measuring s...
DDS1	MDS0: Motor_1	EDS1: Measuring sys...	EDS3: Measuri...	EDS2: Measuri...

Drive data set selection

The bits define the number of the selected data set. The values can be set directly or interconnected with a BiCo source.

Bit 0: 0 2^0
 Bit 1: 0 2^1
 Bit 2: 0 2^2
 Bit 3: 0 2^3
 Bit 4: 0 2^4

Σ Selected DDS



Command data sets CDS

Command data set configuration

Command data set
CDS0
CDS1

Command data set selection

The bits define the number of the selected data set. The values can be set directly or interconnected with a BiCo source.

Bit 0: 0 2^0 0 Selected CDS

p307[0]	Rated motor power		0.31	kw	MDS
p410[0]	Encoder inversion actual value		0H		EDS
p1155[0]	Speed controller speed setpoint 1	<input type="checkbox"/>	0%		CDS
p1192[0]	DSC encoder selection	[1] Encoder 1 (motor encoder)			DDS

New features for SINAMICS S120

Measuring functions and bode diagram

Measuring functions for manual drive optimization (NEW in V17)

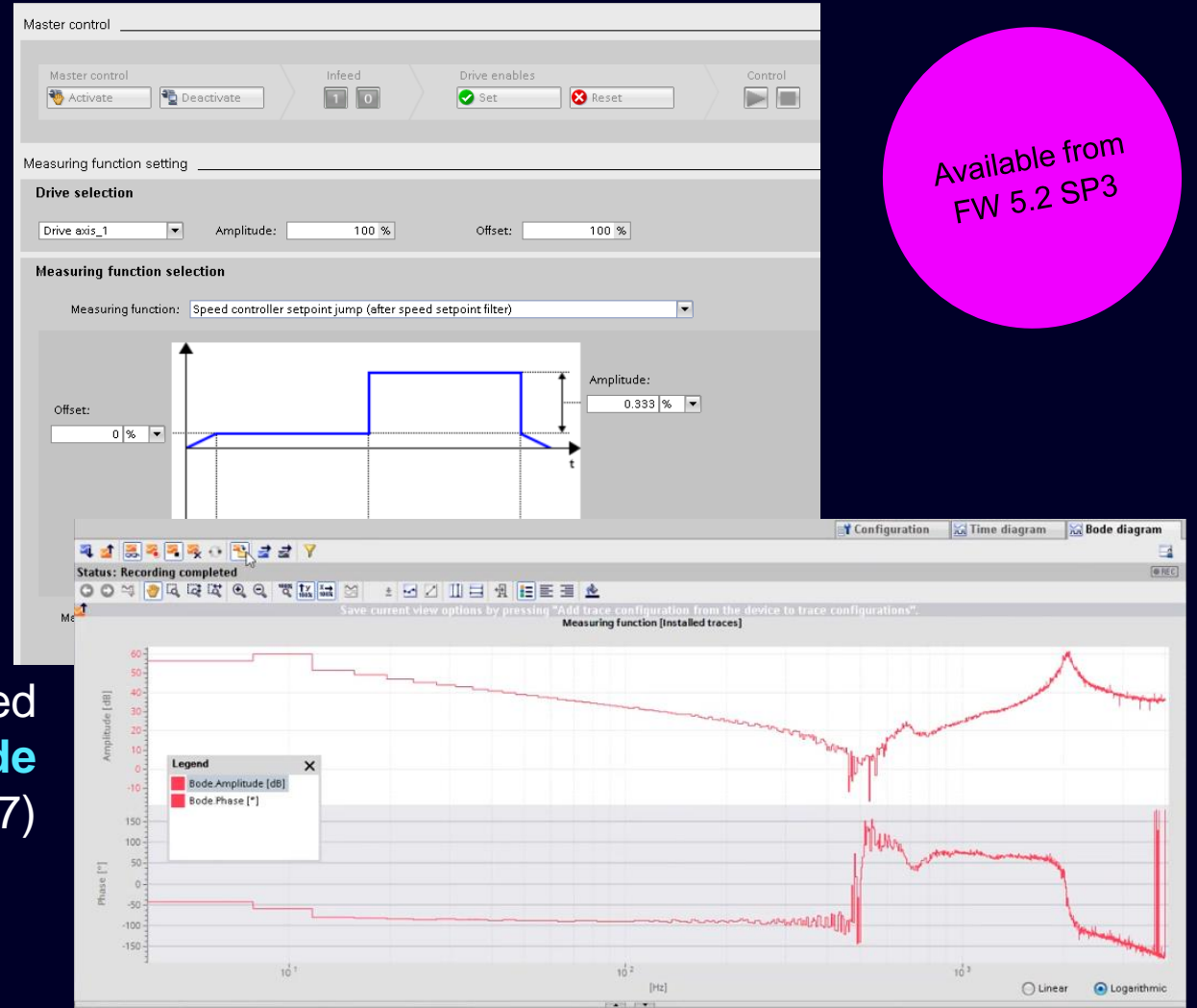
Available preconfigured measurements:

- Speed controller setpoint frequency response (after current setpoint filter)
- Speed-controlled system (excitation after current setpoint filter)
- Speed controller disturbance variable frequency response (fault after current setpoint filter)
- Speed controller setpoint frequency response (before speed setpoint filter)
- Speed controller setpoint jump (after speed setpoint filter)
- Speed controller disturbance variable jump (fault after current setpoint filter)
- Current controller setpoint frequency response (after current setpoint filter)
- Current controller setpoint jump (after current setpoint filter)

Graphical display of measured signals in time diagram and **bode diagram** (NEW in V17)



Measuring functions are part of the SINAMICS Startdrive Advanced license.



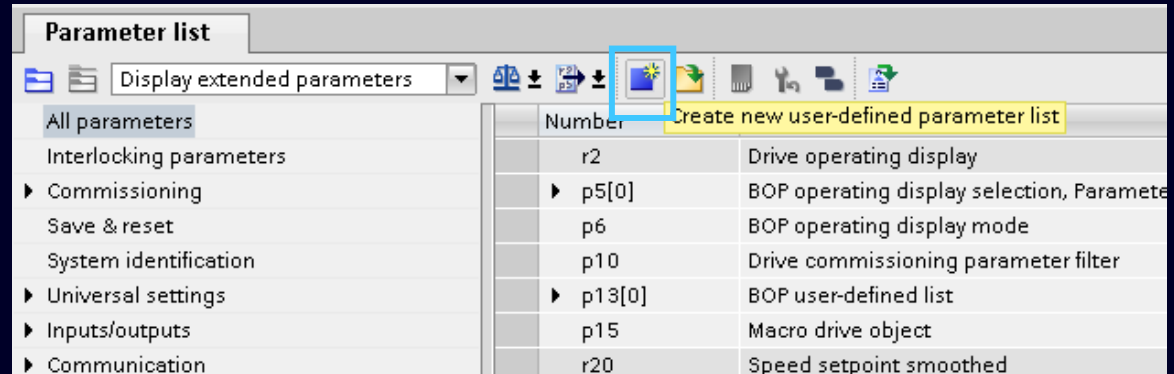
Available from
FW 5.2 SP3

New features for SINAMICS S120

User defined parameter list

Creation of user defined parameter lists now also for S120 devices

Saving parameter lists possible only without parameter values.



The screenshot shows the 'User list_1' software interface. It displays a table with columns for 'Number', 'Parameter text', 'Value', 'Unit', and 'Data set'. The table contains the following entries:

Number	Parameter text	Value	Unit	Data set
p840[0]	ON / OFF (OFF1)	<input type="checkbox"/>	0	CDS
p844[0]	No coast-down / coast-down (OFF2) signal source 1	<input type="checkbox"/>	1	CDS
p848[0]	No Quick Stop / Quick Stop (OFF3) signal source 1	<input type="checkbox"/>	1	CDS
p1155[0]	Speed controller speed setpoint 1	<input type="checkbox"/>	0%	CDS
p1121[0]	Ramp-function generator ramp-down time		10.000 s	DDS
< add new >				

| SINAMICS DCC

SINAMICS DCC V17 News

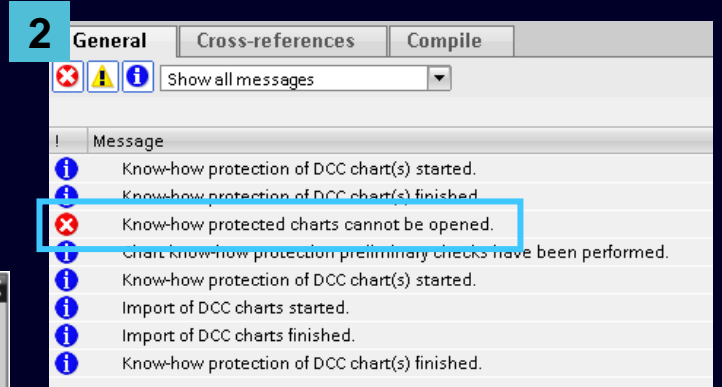
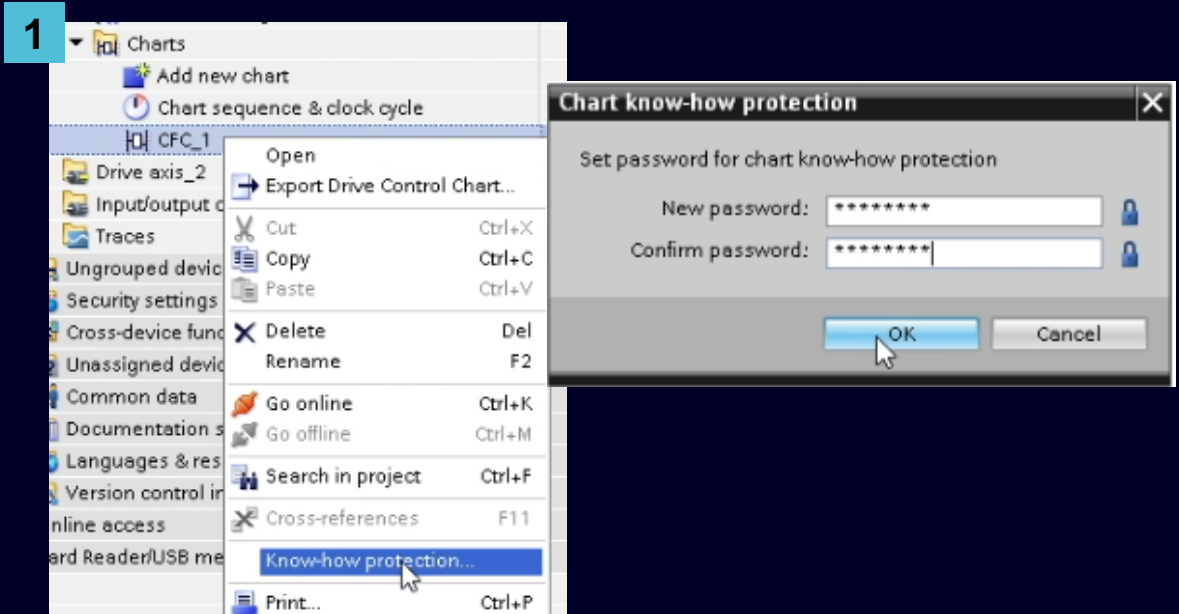
Know-how protection



Know-how protection for DCC charts can be used independently from drive's know-how protection. Protection of OEM's intellectual property without blocking drive parameterization.

Workflow

1. Activate Know-how protection and set password (for single charts or for the chart group)
2. Chart is protected and cannot be opened – published parameters can still be accessed via parameter list
3. Deactivate Know-how protection with password to be able to open chart



SINAMICS DCC V17 News

Online editing



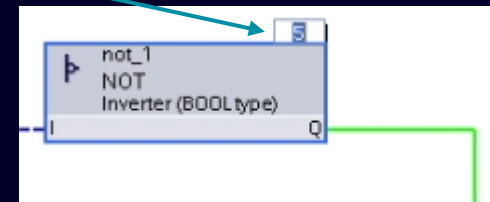
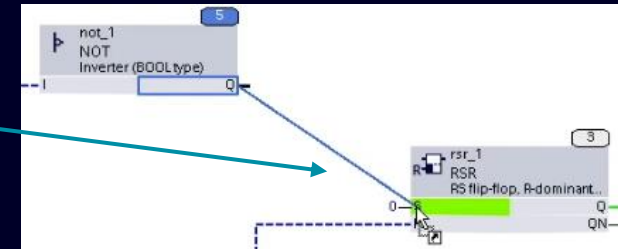
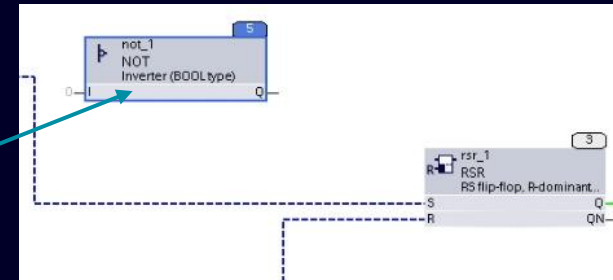
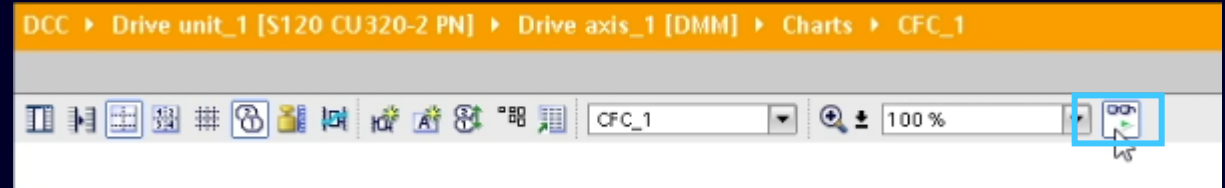
Edit DCC charts in online mode. Speeding up the programming process during commissioning phase as no separate download is needed after changes.

Possible changes in online mode

- Deleting / adding of Drive Control Blocks
- Deleting / adding block interconnections
- Changing the control sequence

Not possible in online mode

- Publishing of Pins as parameters



| Openness

Openness Startdrive V17

What is Openness?

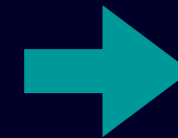
With openness it is possible to control the engineering with TIA Portal externally through a self-written program. This makes it possible to carry out repetitive tasks much faster, ensures error-free execution and enables the customization of the engineering for customer specific applications.

Functions

- Adding of drive units and components
- Setting of selected drive parameters (offline and online, reading and writing)
- Telegram configuration
- Download to a device (no upload)
- Usable for the SINAMICS G family, the CU320-2-based drives (SINAMICS S120, G130, G150, S150 and MV) and S210
- ...

Customer benefits

- Flexible Startdrive extensions to meet customer-specific requirements
- Integration into customer-specific and automated workflows
- Stable Openness interface across TIA Portal versions



TIA Portal V17

Openness

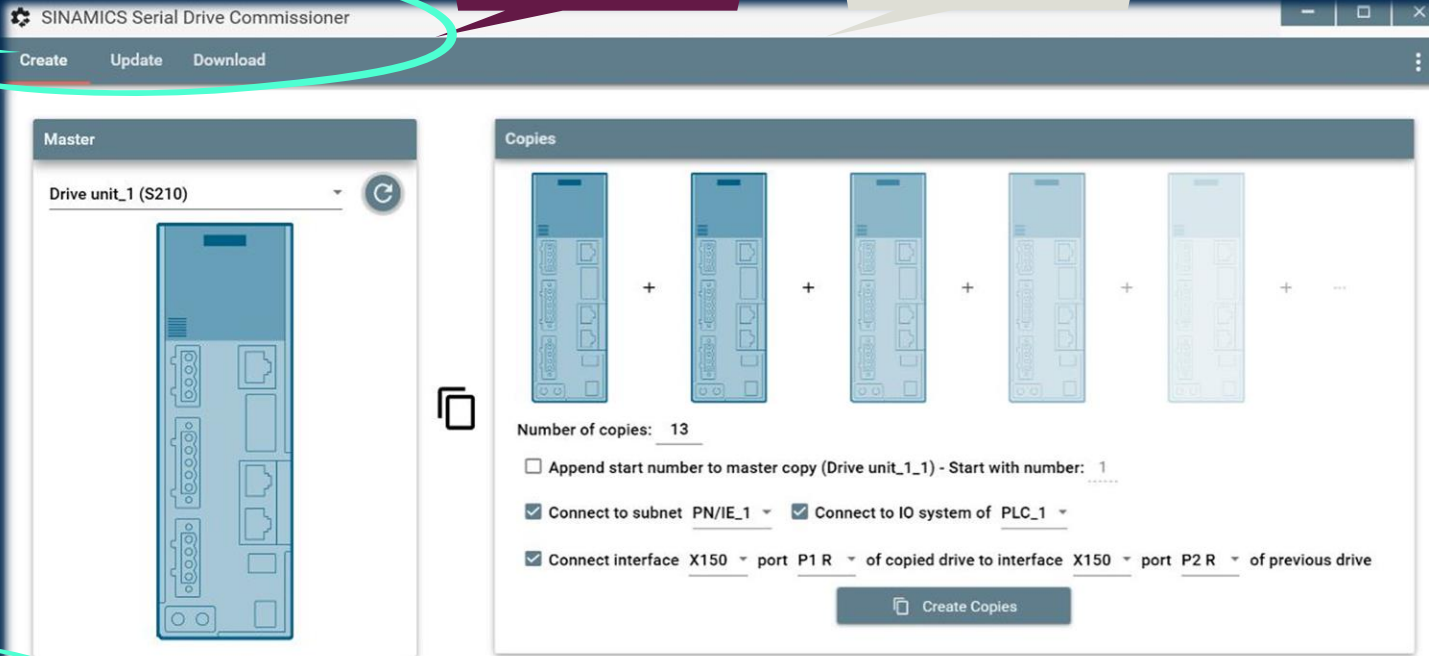
Improved application SINAMICS Serial Drive Commissioner

3 use cases in one app!

From TIA V16

New in V1.2

SIOS Download



Devices

All SINAMICS single drive devices in Startdrive:

- G110M
- G115D
- G120, G120C, G120D, G120P
- G130, G150
- S210

+ Create!

- ✓ Creation of 1:1 copies of a selected drive
- ✓ Automatic assignment to SIMATIC controller
- ✓ NEW: preconfigured assignment of topology for IRT

+ Update!

- ✓ Transmission of specific drive parameterization to selected drives of identical type
- ✓ NEW: Keep I/O address setting or redefine

+ Download!

- ✓ Download of selected drives including Ram2Rom function and copying of safety parameters (Basic + Extended)
- ✓ NEW: Restart of drive and upload to Startdrive

Poll

Vill du ha mer information om nyheterna i Sinamics drives?

Ja kontakta mig gärna!

Nej inte just nu.

| Contact



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siemens.com

 [Stefan Käck](#)