

SIMATIC S7-1200 G2

Technical Slides



Challenge

Increasing demand for smart automation solutions

The advancement of technology is placing greater pressure on industry and machine building. It is not only high-end applications that are impacted, but there is also a growing demand for cutting-edge technology to enhance productivity in simpler automation solutions. This requires a well-coordinated automation system that minimizes complexity and is optimized for cost efficiency over the entire life cycle.

Challenges and opportunities



Technological advancements require constant improvements and state-of-the-art technology, leading to the need for increased **productivity**.

Versatile customer requirements demand scalable and tailored automation solutions with maximum **flexibility**.

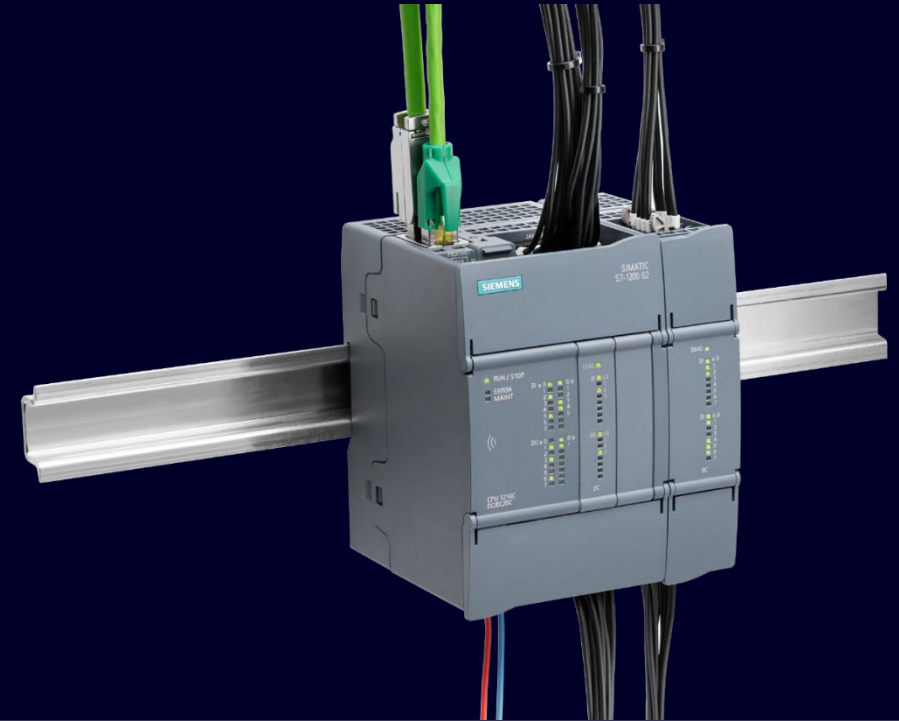
Legal regulations (such as machine safety) must be met without compromising productivity, even under high **cost pressure**.

Solution

New standards in the field of basic automation controllers

SIMATIC S7-1200 G2 sets new standards for simple but high-precision automation controllers. The new controller family now offers efficient motion control for complex motion requirements with enhanced performance and scalability within the SIMATIC controller portfolio.

It allows for more flexible machine safety solutions and increased data transparency, making it the smart choice for all basic automation solutions.



Added
value



Enhanced performance
& scalability



Efficient motion
control



Flexible machine
safety

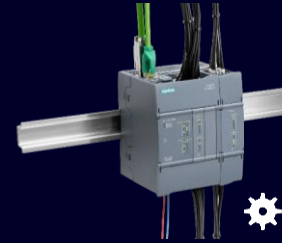


Increased data
transparency



Overview

Added value fields with highlights of SIMATIC S7-1200 G2



Enhanced performance & scalability

- Enhanced processing power, more memory and communication performance
- Synchronized program execution with PROFINET IRT and up to 31 PROFINET devices
- Optimized program scalability across all SIMATIC controllers
- Engineering performance with S7-PLCSIM Advanced for testing PLC code and simulating applications
- Analysis and optimization of PLC runtime with SIMATIC Profiling

Flexible machine safety

- Fail-safe integrated in the complete range (PROFIsafe communication, I/Os)
- Improved F-IO Portfolio with F-SBs and mixed I/O modules
- Fail-safe engineering integrated in STEP 7 Basic

Efficient motion control

- New motion control functions based on the same instructions across the SIMATIC controller portfolio
- Control of single axes, coordinated axes and simple kinematics
- Integrated motion control technology objects simplifying configuration



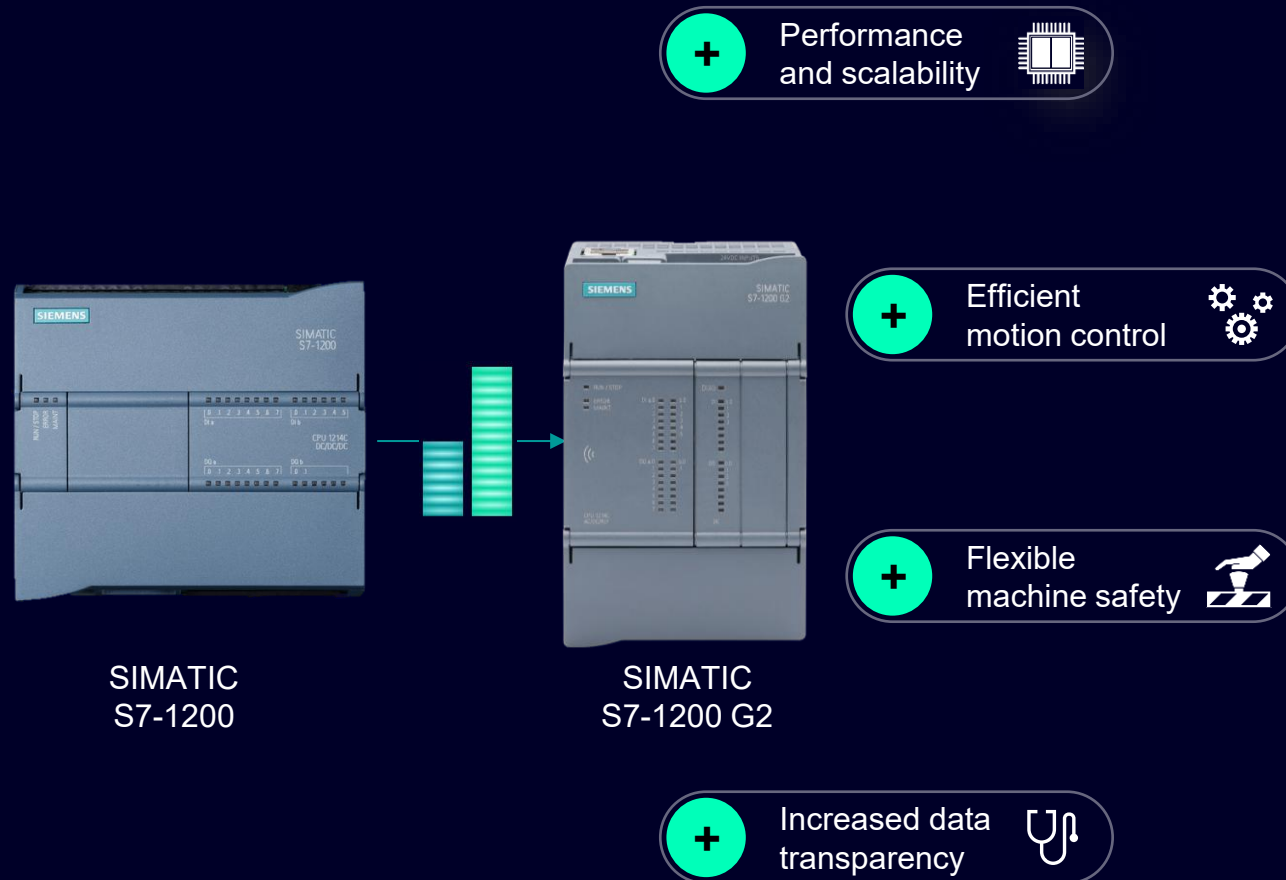
Increased data transparency

- Near Field Communication (NFC) for wireless access to diagnostic, operational and device data
- Integrated webserver with modernized default websites in a uniform display concept
- New Web API as an interface for reading and writing CPU data
- OPC UA Server support for improved connectivity and integration

i Scalable, cost-optimized and powerful portfolio for the basic automation segment

Machine Performance and Reliability

Increase Machine Performance



Powerful controller system for the basic automation market

Challenge

- Find a reliable and transparent automation system to avoid production downtimes
- Select a perfectly coordinated and target-oriented, not oversized system that is nevertheless scalable
- Achieve optimum price-performance ratio

Solution

SIMATIC S7-1200 G2 ensures that simpler automation systems can handle increased demands, such as:

- New performance requirements for faster data processing and multitasking
- New motion control functions to realize versatile motion control solutions
- New machine safety options for cost-effective fail-safe applications
- New levels of data transparency for quick access to diagnostic/device data

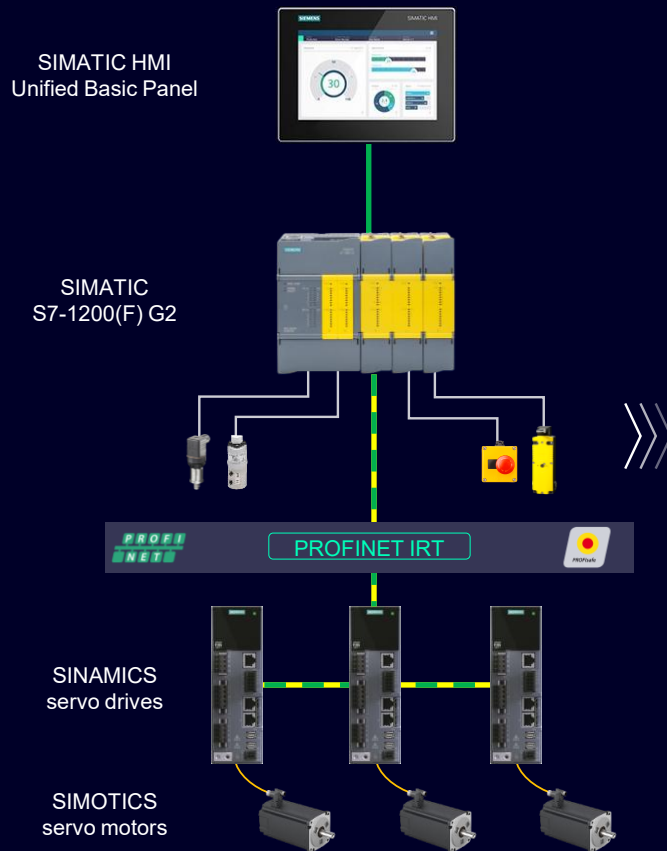
Full engineering standardization with unified libraries and a common firmware architecture across all SIMATIC controllers

Value

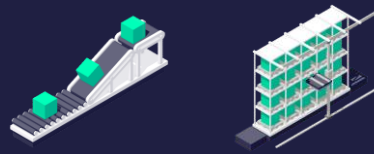
- High productivity
- Maximum scalability
- Cost optimization

Efficient Motion Control

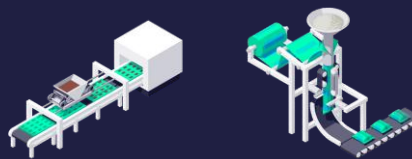
Motion Control System Scalability



Moving / Positioning



Processing



Handling



Scalable motion control systems for basic automation

Challenge

- Ensuring scalability of motion control systems when starting in the basic automation segment
- Selecting motion control components and solutions with low complexity and high consistency in the engineering
- Meeting specific performance requirements with equidistant and synchronous signal processing for all motion control components

Solution

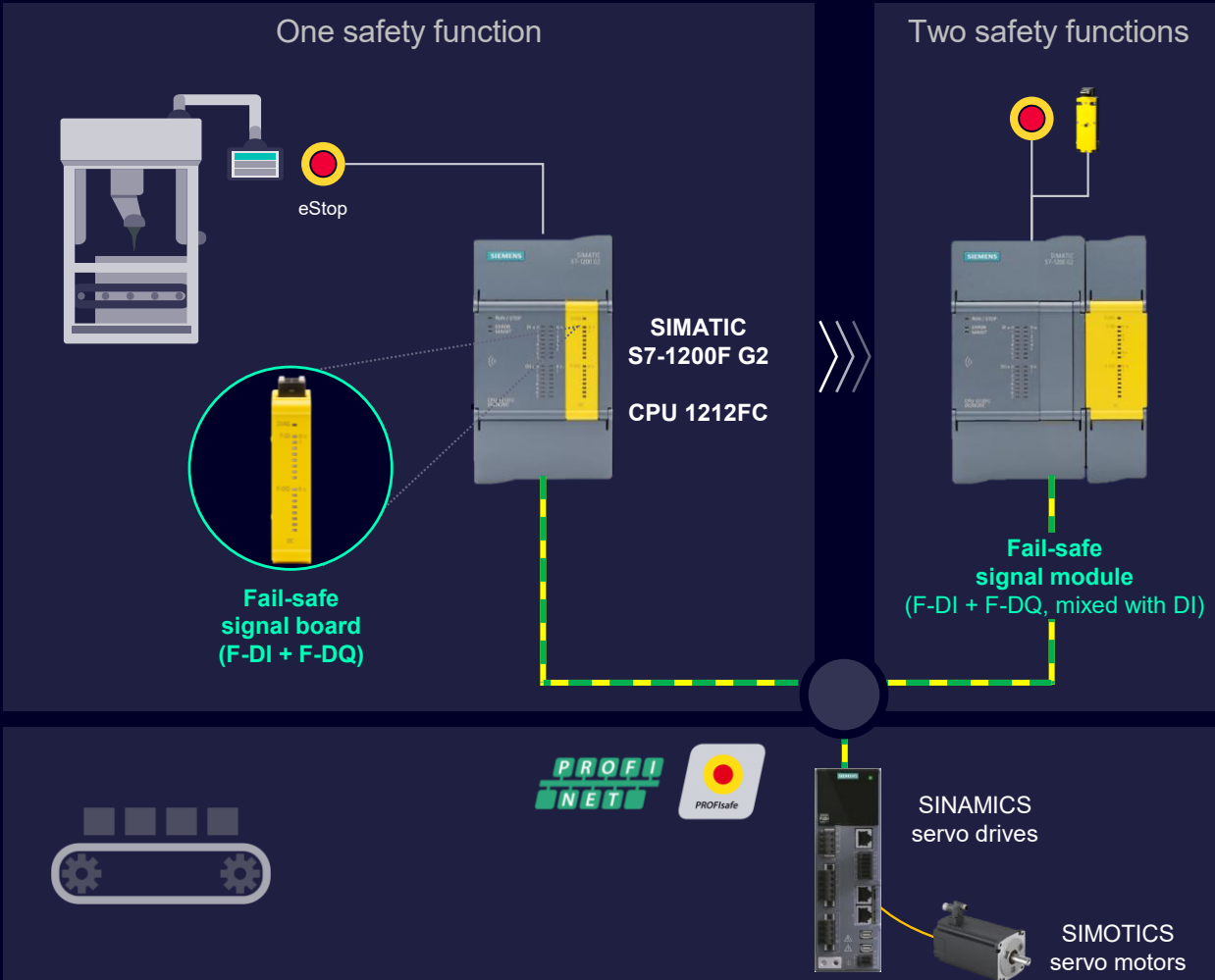
- SIMATIC S7-1200 G2 enables the control single axes, coordinated axes and simple kinematics with PROFINET IRT communication
- Technology objects for Motion Control simplifying system configuration during engineering, commissioning and service
- Seamlessly scalable portfolio, to expand the functionality of machines simply by selecting a CPU of a higher performance class

Value

- Easy engineering
- Consistent tool landscape
- Flexible adaptation

Machine Safety for Industrial Automation

Flexible Machine Safety



Space-saving machine safety for basic automation

Challenge

- Identifying and implementing suitable safety hardware solutions for different levels of complexity
- Ensuring diagnostic capabilities and easy integration into control systems
- For a huge number of safety functions, many hardware devices might be necessary, leading to high wiring effort and complex system architectures

Solution

SIMATIC S7-1200F G2 with improved fail-safe portfolio and SINAMICS servo drives enable the implementation of flexible operating and safety modes:

- Flexible expansion of fail-safe I/Os with mixed fail-safe signal modules or fail-safe signal boards directly on the CPU
- Unified engineering environment (TIA Portal) for standard and fail-safe automation tasks, with fail-safe engineering integrated in STEP 7 Basic
- Safety integrated in SIMATIC S7-1200F G2 also with the associated communication (PROFIsafe) to safety integrated SINAMICS drives

Value

- Space-saving
- Flexible
- Cost-efficient

Simulation for Industrial Systems

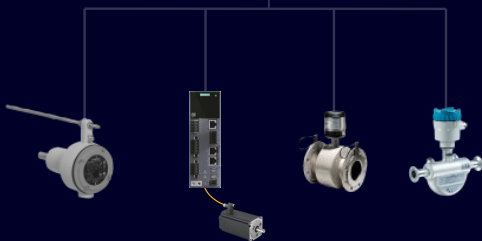
Validate and optimize production machines

Real world

S7-1200 G2
Hardware Controller

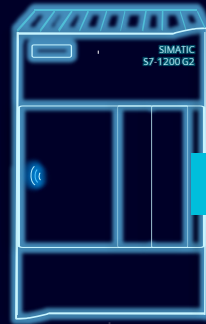


Process

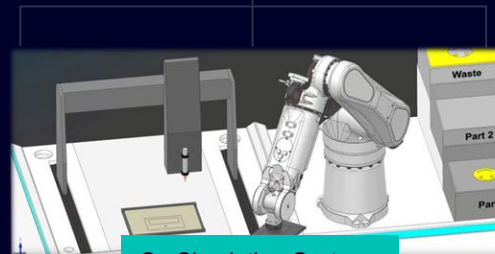


Simulation system

PLCSIM Advanced
Simulated S7-1200 G2 CPU



API



Co-Simulation Systems

Development performance through virtual commissioning of PLC code

Challenge

- PLC code needs to be debugged and validated before actual commissioning
- Hardware-in-the-loop setups for components are a lot of effort and often infeasible

Solution

- Test the PLC code using a simulated SIMATIC S7-1200 G2 controller with S7-PLCSIM Advanced
- Simulated controllers can also be tested and validated in the context of a plant/machine (Co-Simulation) thanks to API connection

Value

- Ensure deployment-ready PLC code through comprehensive functionality validation
- Provide risk-free testing environment to mitigate system damages
- Enable more extensive testing in a simulated environment

Operational Performance and Reliability

Increase Data Transparency



Smart solutions along the machine life cycle via NFC

Challenge

- On-site programming required for adaptation of customer-specific network settings in the PLC
- Additional hardware devices with direct access necessary
- Long machine downtimes in the event of machine failure if efficient diagnostics are not provided
- High programming effort for availability of diagnostic information

Solution

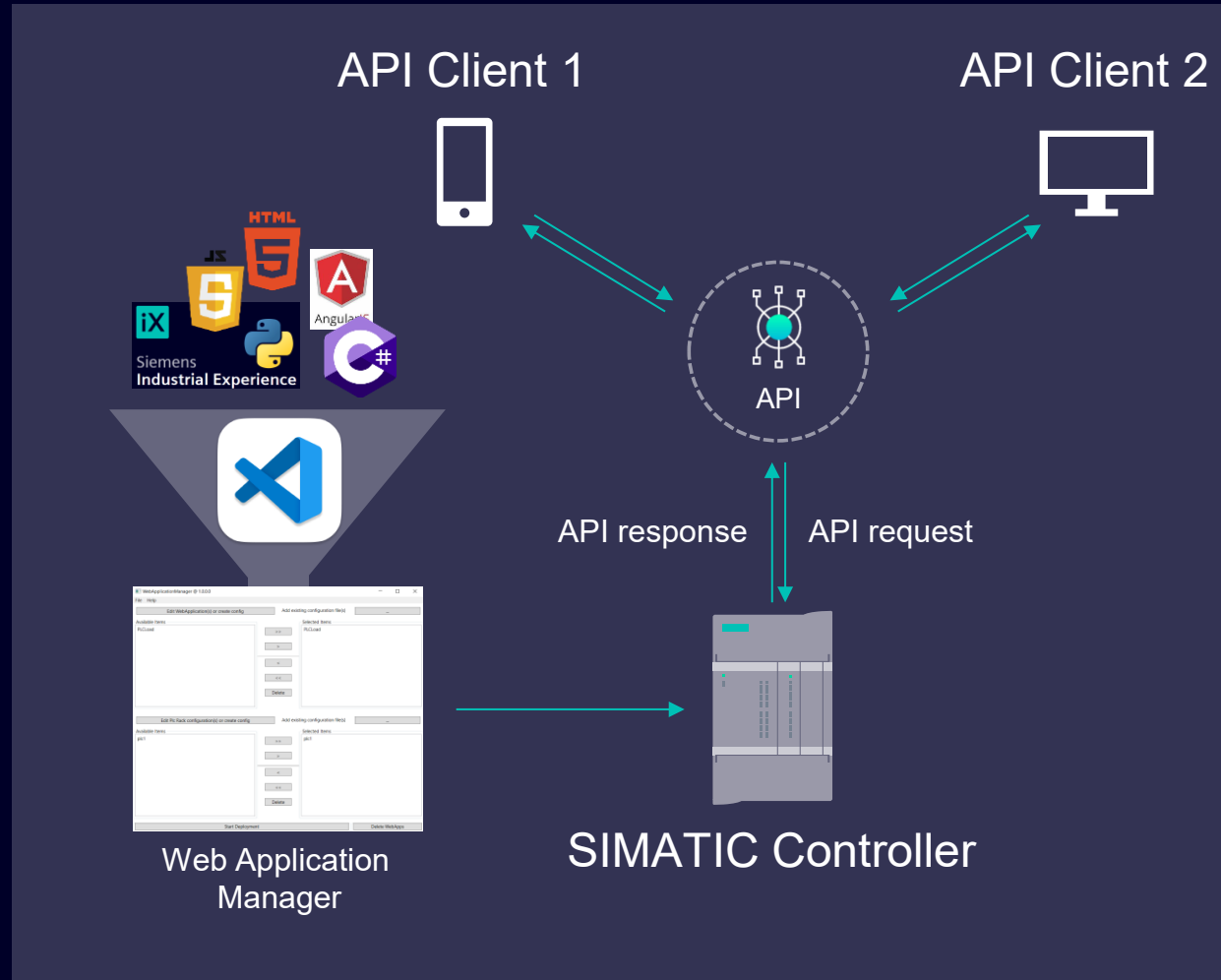
- SIMATIC S7-1200 G2 with Near-Field-Communication (NFC) in every PLC
- NFC can be configured in TIA Portal to enable NFC and to enable write access with NFC security protection via password
- Access to diagnostic and device data for quick and easy machine service to reduce downtimes
- Setting time, IP-addresses and other network settings without additional programming devices and licenses during commissioning
- SIMATIC S7-1200 G2 NFC app available for Android and iOS

Value

- Reduced downtime
- Efficient diagnostics
- Easy integration

Operational Performance and Reliability

Increase Data Transparency



Custom web applications tailored to specific requirements

Challenge

- Monitoring and controlling equipment without investing in additional hardware
- Flexibility to implement customized user interfaces and applications without high investment
- Access to operational data and process variables from standard browsers and mobile devices

Solution

SIMATIC S7-1200 G2 and its integrated web server with standard web pages enable easy display of service and diagnostic information. Additionally, individually created user-defined web applications can be developed and accessed via Web API:

- Develop front end by creating the HTML Files
- Download the web application to the PLC with the Web Application Manager
- Access the custom-made web pages on every device (also mobile devices) worldwide via standard internet browser

Value

- Cost-effectiveness thanks to integrated web server and web API
- Highest flexibility with customized web applications
- Location-independent access via standard web browsers

What's new in FW V4.1 and TIA Portal V21?

Software

- OPC UA server
- System web pages for the Web server
- Motion control
 - Support for Pulse Train Outputs (PTOs), compatible for basic motion control
 - Additional Motion Control functionality
 - Full standard cam support (curves, segments transitions, VDI), Absolut gearing, kinematics with SCARA (up to 3D with orientation) and kinematics workspace & tools, torque limiting
 - Dual core support for motion control
- S7-PLCSIM Advanced support
- NFC for Android
- Support for central users on UMC server
- Backup and Restore
- Modbus TCP redundancy instructions
- PROFINET security class 1
- Communication load default of 20%
- Support for a nesting depth of 26 hierarchical levels of Structs

Hardware

Signal Modules (SM) 1223

- SM 1223 DI 16x 24VDC/DQ 16x relay
- SM 1223 DI 16x 24VDC/DQ 16x 24VDC Sink
- SM 1223 DI 16x 24VDC/DQ 16x 24VDC



Battery Board (BB) 1297

- For real-time clock long-term buffering (without CR1032 battery)
- Hold up time Approximately 1 year



Communication Processor CP 1243-1 G2

- Industrial Ethernet 100 Mbit/s (RJ45 Port)
- DNP3 Telecontrol protocol



Overview

SIMATIC S7-1200 G2 configured in the TIA Portal fits perfectly

Modular space-saving controller for automation systems requiring simple or extended functionality in the area of logic, HMI and networking.

- Perfect for stand-alone and interconnected machines as well as cost-effective automation solutions
- Enabling more flexible, scalable, and higher-performance motion control demands
- Increasing operational performance and reliability with smart automation solutions and fail-safe integration
- Simple integration into interconnected systems and into systems that require one or more HMI devices
- Extended functionality for small motion control systems and small process applications
- Two communication ports on each CPU

Controller, HMI and Networking

Everything developed in one software architecture



Overview

CPUs and communication

	CPU 1212(F)C	CPU 1214(F)C
RAM Data	500 k	750 k
RAM Progr.	150/200 k	250/300 k
Retentive Memory	20 kB	20 kB
Bit performance	37 ns	37 ns
W x H x D (mm)	70 x 125 x 100	80 x 125 x 100
Integrated DI/DO	8/6	14/10
PROFINET/Modbus TCP	2 ports IRT	2 ports IRT
Communication Modules	3 max	3 max
Total SMs + CMs	6 max	10 max
High-Speed Counter	8	8
Total SBs	1 max	2 max
Position axes Typical ¹ Maximum ²	4 10	4 10
Motion Control (MC) Resources ³	800	800
Extended MC Resources ⁴	40	40
NFC	✓	✓
SIMATIC Memory card	Optional	Optional
Variants	DC/DC/DC & DC/DC/RLY & AC/DC/RLY (Std. only)	

Communication

CB 1241

RS485

CM 1241

PtP (RS232/RS485/RS422)



1 At 4 ms Servo/IPO cycle time and 35% CPU load due to Motion Control. Estimated values are subject to implementation of use case | 2 No further TOs applicable
3 Resources for Motion Control technology objects: Speed axis = 40 | Positioning axis = 80 | Synchr. Axis = 160 | Output cam= 20 | Output cam track = 160 | Measuring input = 40 | Ext. Encoder = 80
4 Resources for Extended Motion Control technology objects: Cams (1,000 points and 50 segments) = 2 | Cams (10,000 points and 50 segments) = 20 | Kinematic objects= 30 | Interpreter = 60 | Leading axis proxy = 3

Communication

Serial communication

Serial Network communication with SIMATIC S7-1200 G2

RS-485, RS-422 & RS-232 – point-to-point (PtP) communication for character-based serial protocols, and this provides maximum freedom and flexibility for the use of PtP communication instructions in the user program.

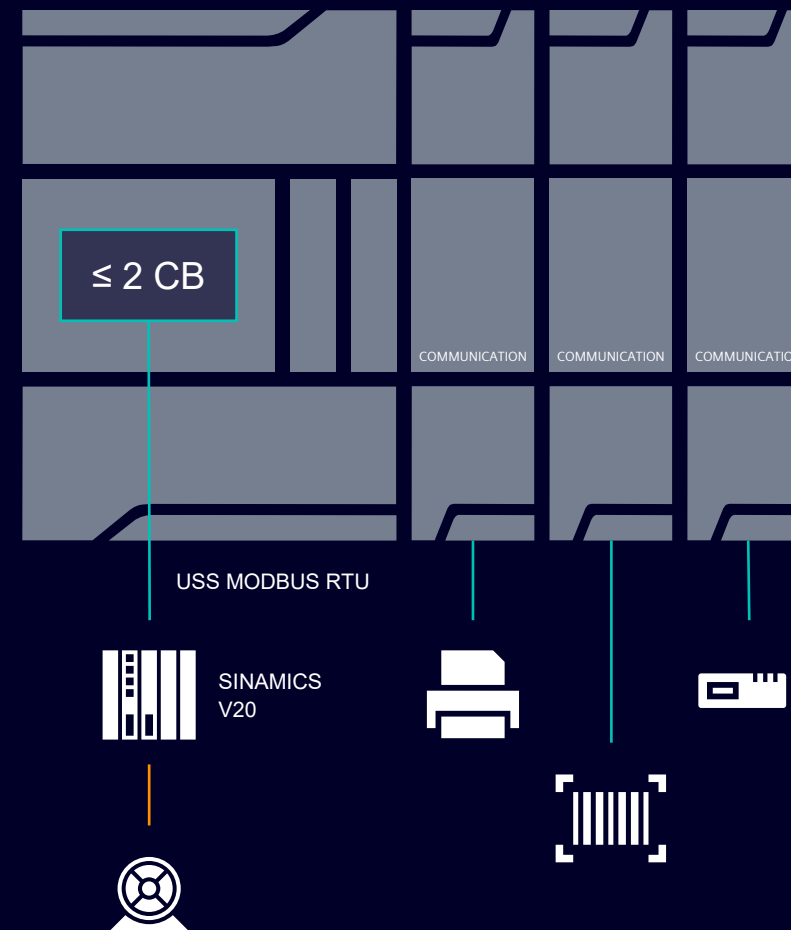
Modbus RTU – using the Modbus instructions the Modbus master or slave is able to communicate with devices that use the Modbus RTU protocol.

USS – Using simple USS instructions you can control the operation of drives that support the USS (Universal Serial Interface) protocol.

CB 1241: RS-485

CM 1241: PtP (RS-232/RS-485/RS-422)

CPU



OPC UA at S7-1200 G2

Full functional compatibility to S7-1200 G1

OPC UA Server functional compatible to S7-1200 G1

- Support of standard mechanism
Read, Write, Browse, Subscriptions, Methods
- Support of user-defined Server interfaces and Companion Specs
- Security (sign & encrypt)
- OPC UA Server diagnostic
- Fully supported by SiOME



1200 G2

User-defined server Interface

No. of server interfaces	2
No. of nodes for user-defined server interfaces	2,000

Subscriptions

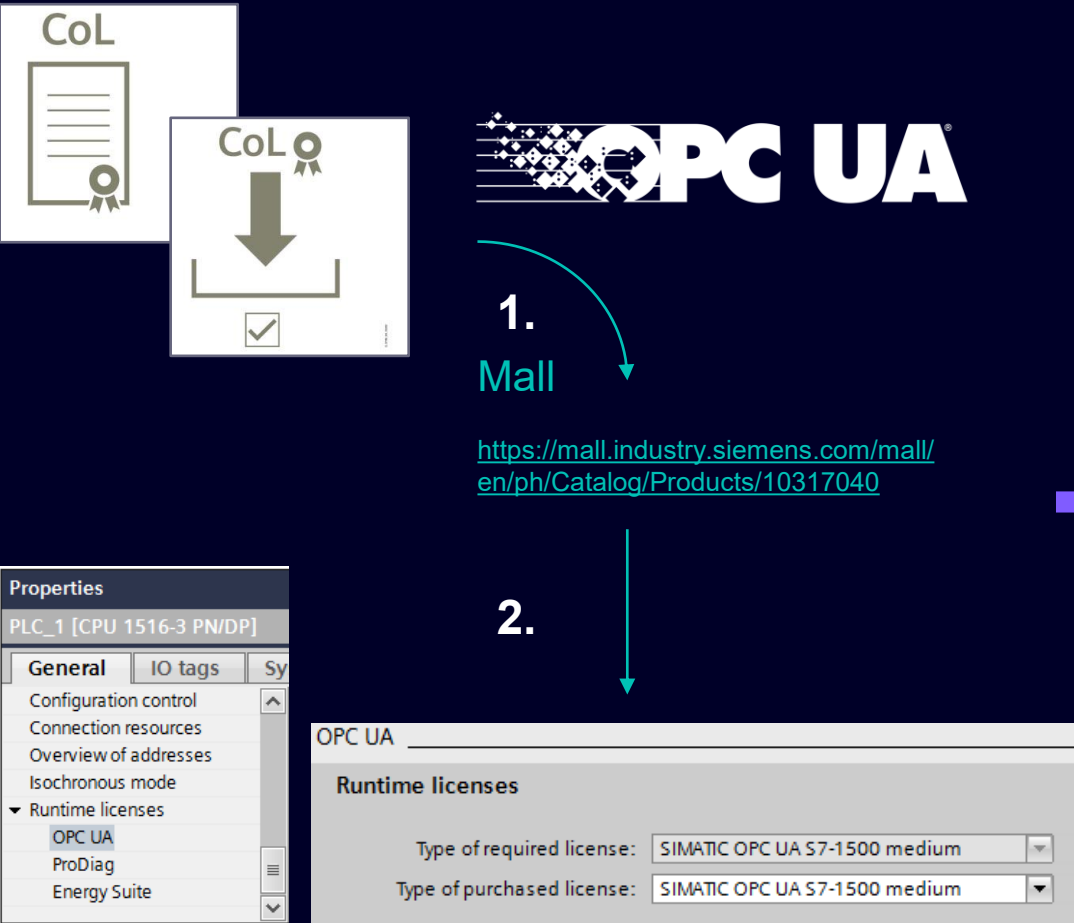
No. of subscriptions per session	5
No. of monitored items, total	1,000

Methods

No. of server methods, max	20
No. of parallel running server methods, max	20
No. of in/outputs per server method	20

OPC UA license model

The usage of OPC UA server and/or client requires a runtime license



Not NEW – but always good to be remind 😊

- Operating the OPC UA server or client on the S7-1200 and S7-1500, a license is required.
- The type of license needed depends on the performance of the respective CPU.

Basic	CPU S7-1200, CPU S7-1200 G2
Small	up to CPU 1513, 1505S
Medium	up to CPU 1516, 1507S
Large	up to CPU 1518, 1507D , 1508S

Overview

Signal boards and signal modules

SBs

Digital SBs

- 8 DI 24V 100 kHz
- 8 DQ 24V 100 kHz
- 4 DI/4 DQ 24V 100 kHz
- 4 DI/4 DQ 5V 200 kHz

Analog SBs

- 4 AI
- 4 AQ
- 2 AI/2 AQ
- 4 TC
- 2 RTD



SMs

Digital SMs

- DI 16 x 24 V DC
- DQ 16 x 24 V DC 0.5 A
- DQ 16 x Relay
- 8 DI/8 DQ
- 8 DI/8 RLY

Analog SMs

- 8 AI
- 8 AQ
- 4 AI/4 AQ
- 8 AI TC
- 4 AI RTD



Overview

Fail-safe: signal boards and signal modules

SBs

2x F-DI(1oo1)/1x F-DI (1oo2),
1x F-DQ. PP-PM¹

SMs

8x F-DI(1oo1)/4x F-DI(1oo2), 8-Vs¹

4x F-DQ, PP-PM¹

4x F-DI(1oo1)/2x F-DI (1oo2),
2x F-DQ. PP-PM, 2x DI

1oo1 (One out of One):

1oo1 as simple redundancy, a single input connected to a fail-safe digital input

1oo2 (One out of Two):

Redundancy with cross-diagnosis: There are two independent sensors, each connected to an F-DI. Both sensors provide signals to the F-DI. The F-DI monitors the signals and makes decisions based on both inputs. This configuration is normally used in safety-critical applications

Vs: Integrated Sensor supply,

allows to detect short-circuit or overload scenarios, and react accordingly

i Initial failsafe portfolio release in April 2026

¹ Not within initial failsafe Portfolio release



Design and handling

S7-1200 G2 CPU new hardware design

PROFINET interface (2 ports)

Digital inputs
(Push-in wiring design)

Optional memory extension

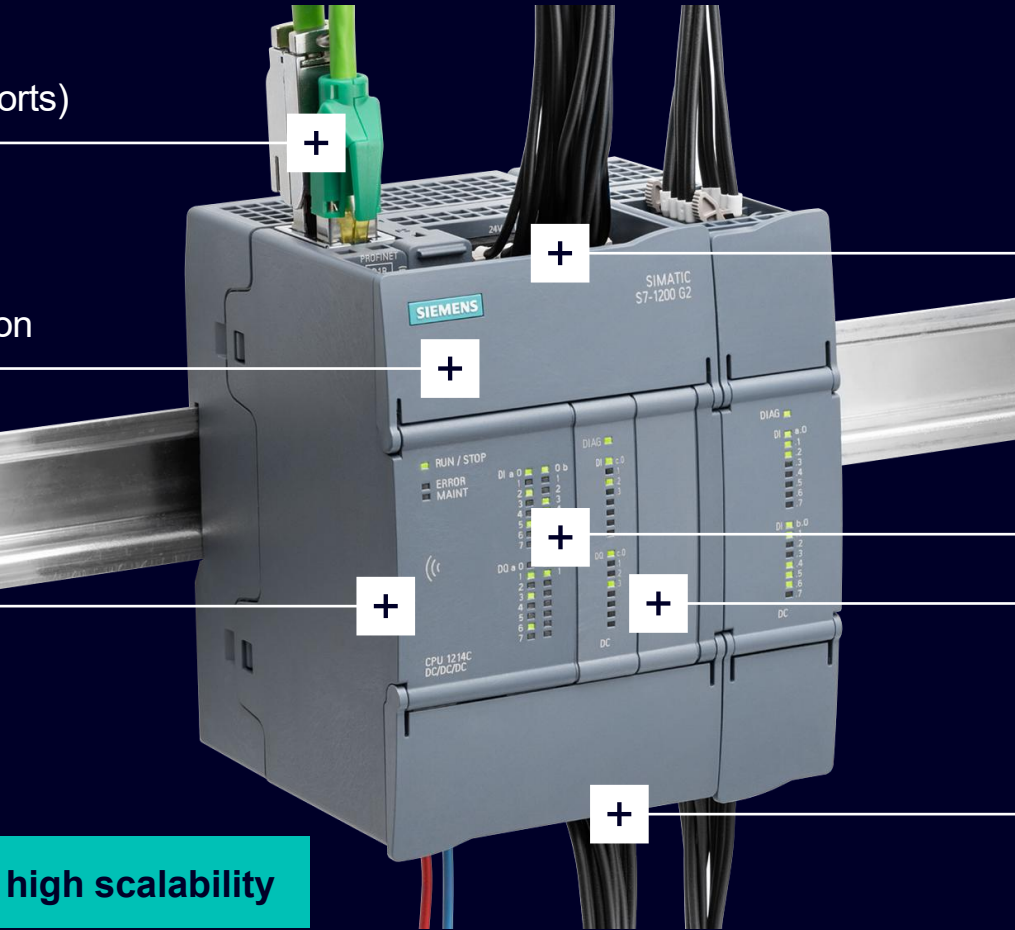
Integrated HSCs
& PTOs/PWMs

NFC tag

Optional plug-in
expansion board

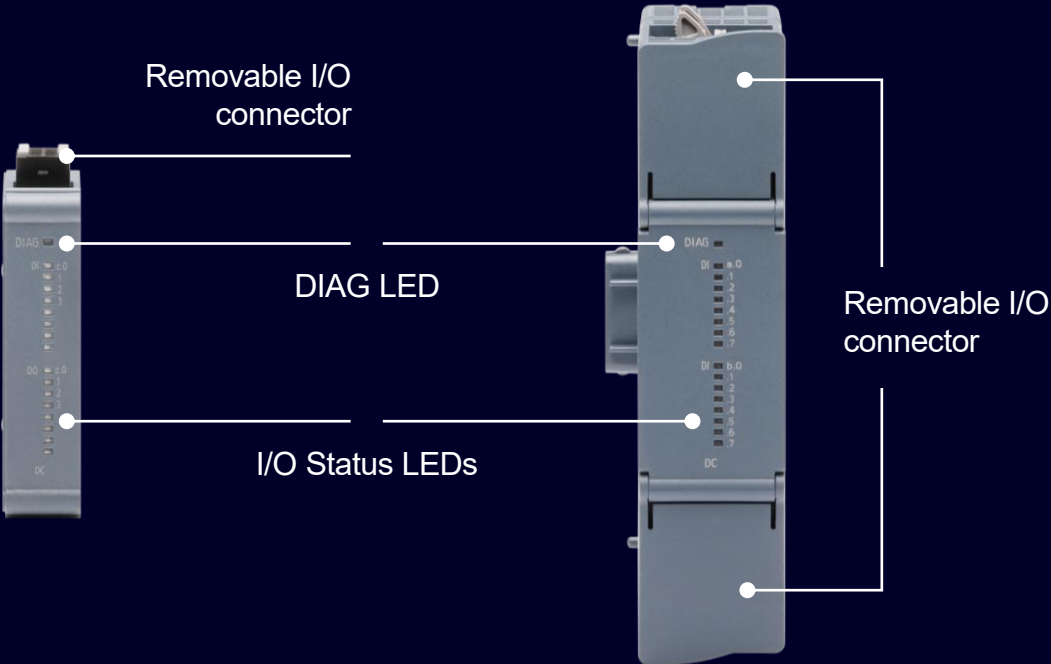
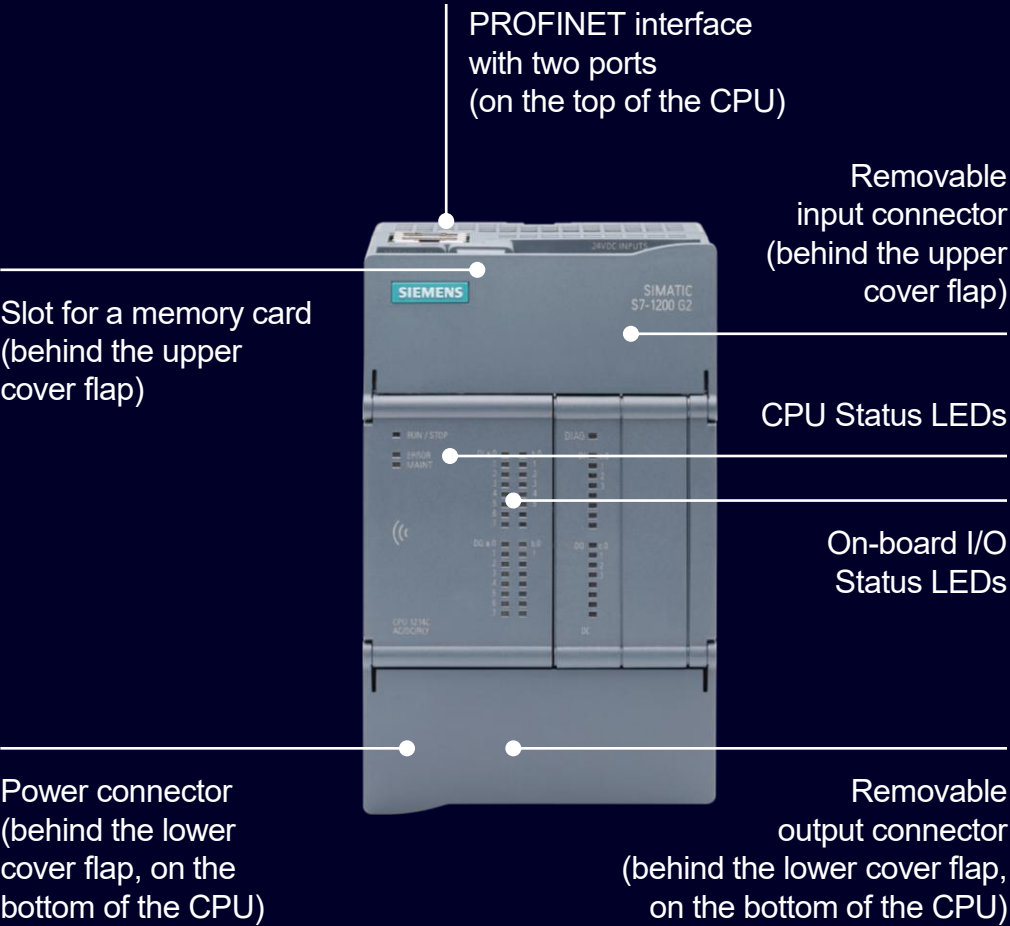
Digital outputs (DC or relay)

i Innovative & modular design with high scalability



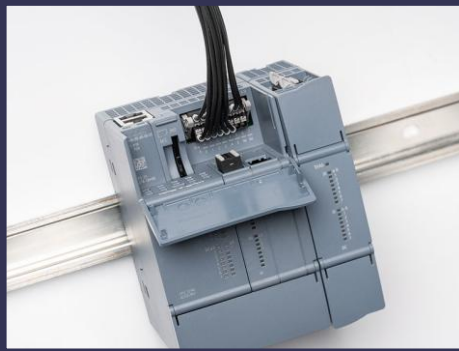
Design and handling

S7-1200 CPU, board and module details

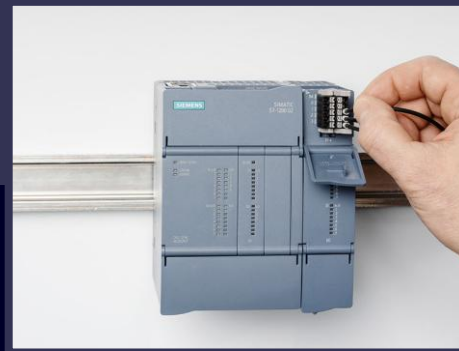


New hardware design

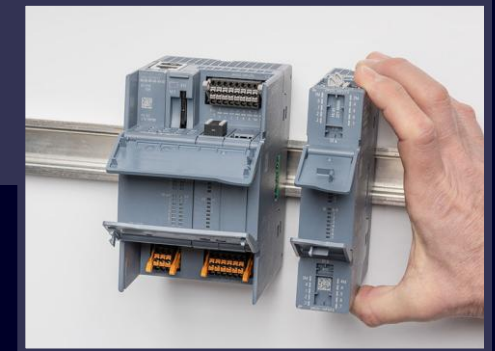
Handling



Memory Card access, 2xPN Ports and improved signal board concept (up to two SBs).



Removable high(er) density terminal blocks with push-in wiring for ease of use
→ non-contact pre-wiring position.



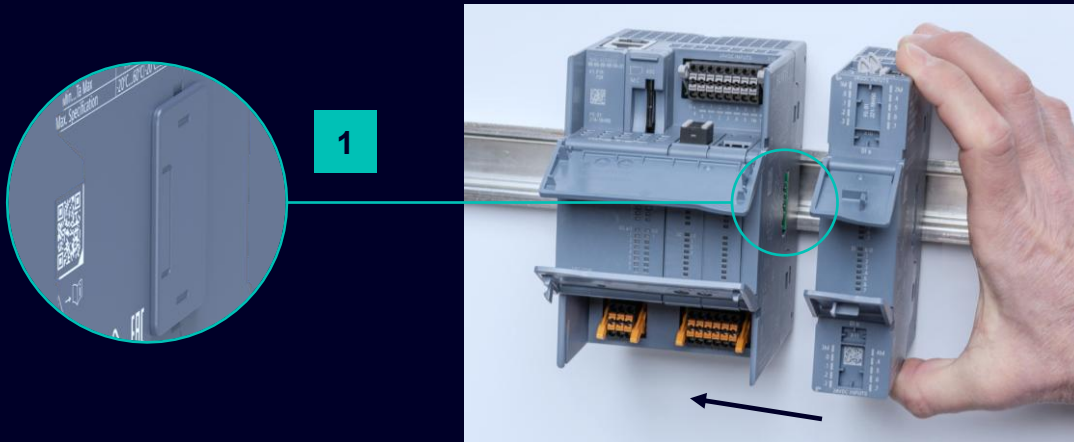
DIN rail footprint reduced by ~25%.
Single, reliable bus connection system for both SMs and CMs.

Design and handling

Extension module assembly

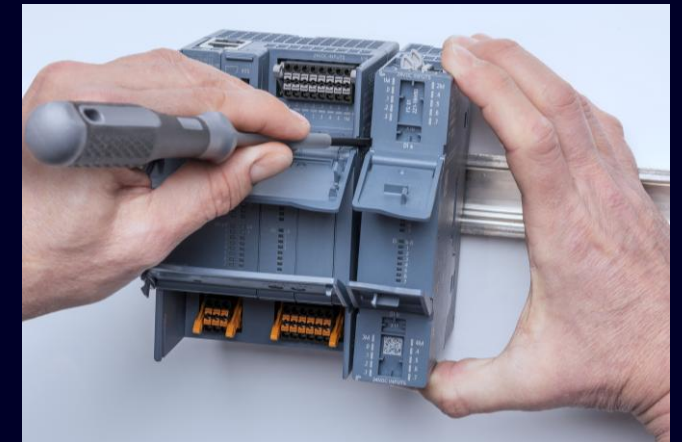
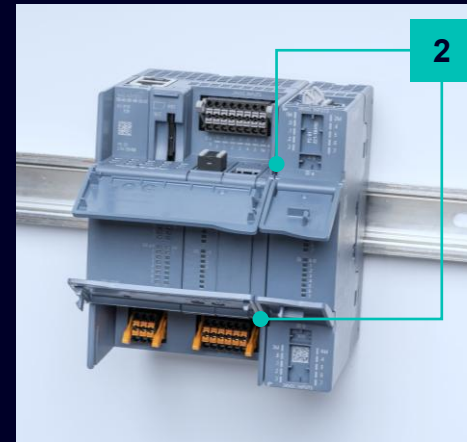
Installing

- 1 Remove the bus cover
- 2 Align the bus connector and the posts of the module with the holes of the CPU or module, and firmly press the units together until the posts snap into place
- 3 If you are DIN Rail mounting, push the lower DIN rail clip in to secure the module. If you are panel mounting, screw the module to the panel



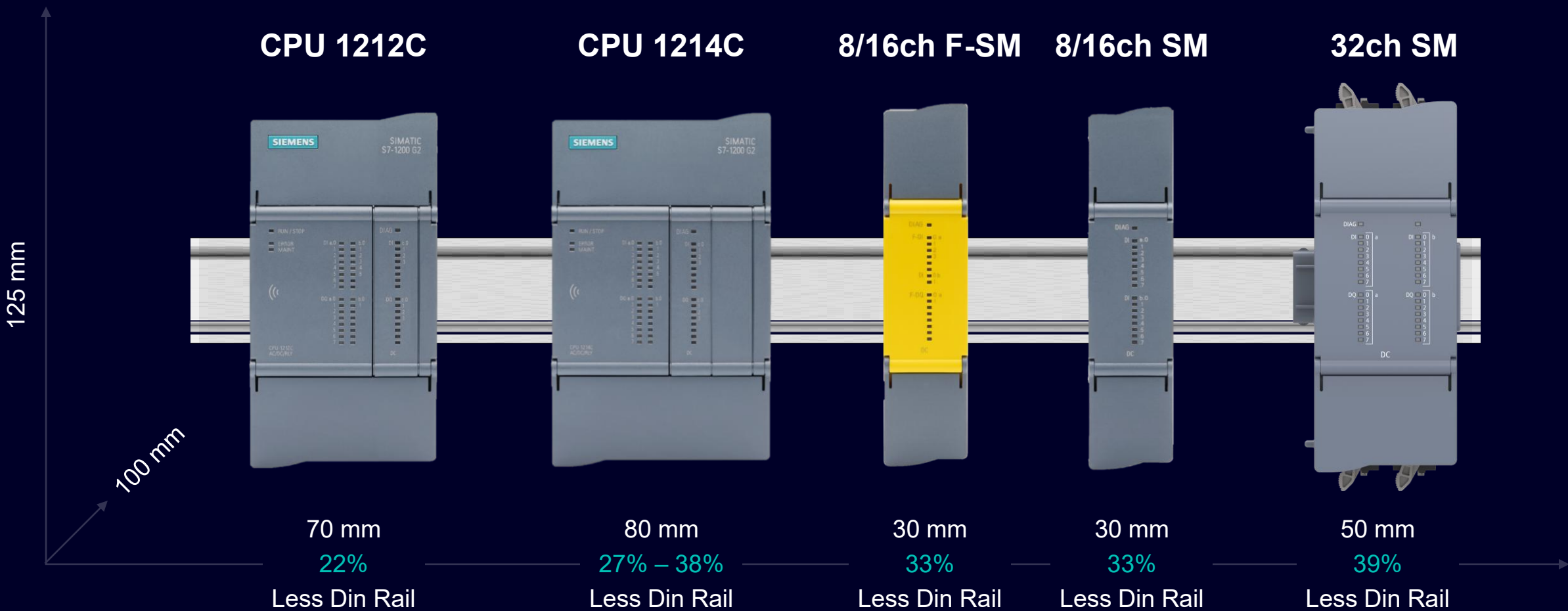
Removing

- 1 Grasp the units and pull them apart
- 2 Place an M3 screwdriver in the provided slot under the doors and pry the devices apart
- 3 Remove the module(s) from the DIN rail or panel; if removing a module(s) from a DIN rail, rotate it up and off the rail



New hardware design

Dimensions

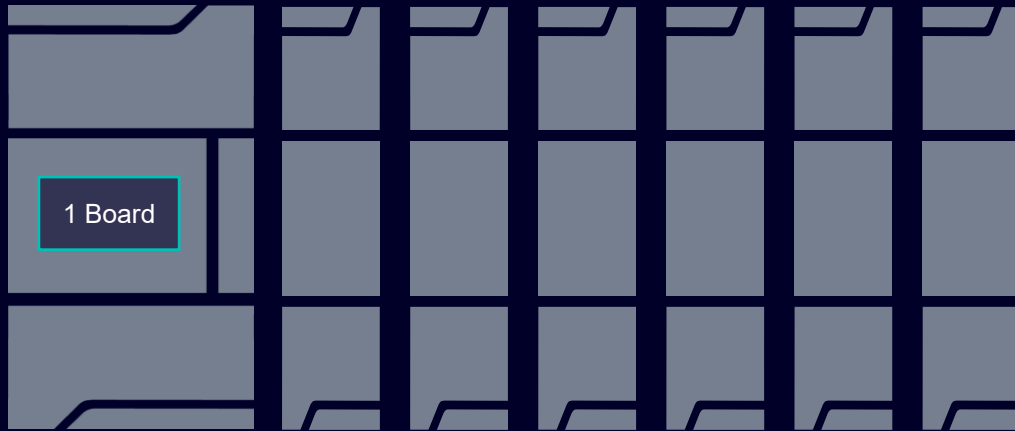


Design and handling

Set-up and extension options

CPU 1212C

CM/SM – Max. 6 expansion modules



- Max. **1** signal board or communication board expansion
- Max. **6** signal module expansions including SM and CM
- Max. **3** communication module expansions

CPU 1214C

CM/SM – Max. 10 expansion modules



- Max. **2** signal board or communication board expansions
- Max. **10** signal module expansions including SM and CM
- Max. **3** communication module expansions

- Both communication modules and signal modules are installed to the right of the CPU
- CM must connect to the right of the CPU or to the right of another CM
- SM must connect to the right of a CPU, CM, or another SM

CPU 1212/1214

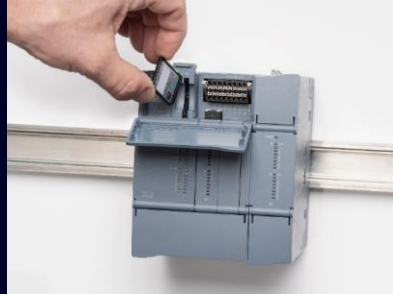
i Variable extension and set-up options for differing requirements

New hardware design

Accessories: SIMATIC memory card

Capacity

- 4 MB
- 12 MB
- 24 MB
- 256 MB
- 2 GB
- 32 GB



What can be saved on a S7-1200 memory card?

- Program
- Data
- System data
- Recipes
- Data protocol
- Files
- Projects

i SIMATIC memory card optional

SIMATIC Memory Card

- Increased lifespan 500,000 write accesses possible
- Project sent as an e-mail with transfer to memory card using standard PC
- No special card reader required (SD card with FAT 32 file system)
- No data lost despite openness with CPU shutdown
- Increased copy protection – Option of linking the programs to the memory card serial numbers



Efficient motion control

Integrated motion control for basic automation machines

SIMATIC Motion Control

Supported Technology Objects (TO)¹

	TO_SpeedAxis		TO_CamTrack
	TO_PositioningAxis		TO_MeasuringInput
	TO_SynchronousAxis		TO_Cam
	TO_ExternalEncoder		TO_Kinematics
	TO_OutputCam		

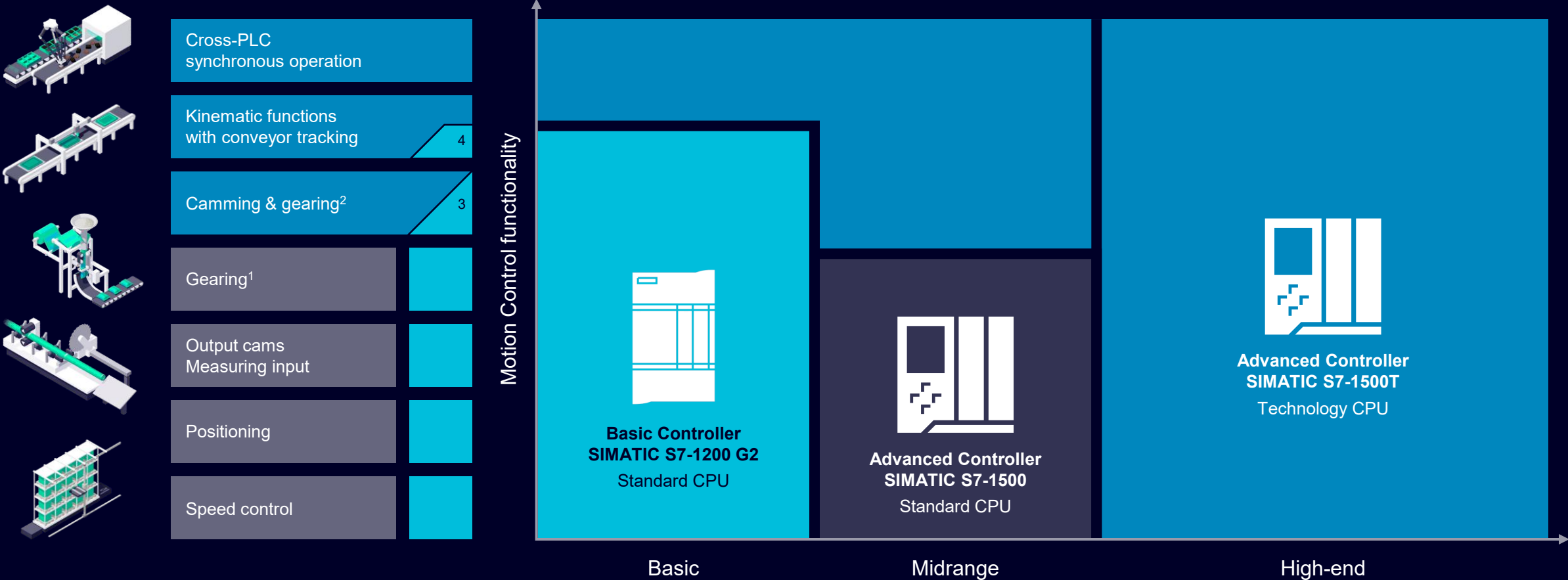
allowing to address basic motion applications

¹ Small differences in the associated instructions for some technology objects compared to S7-1500



Efficient motion control

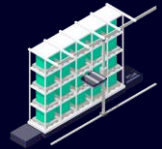
SIMATIC S7-1200 G2 within the motion control portfolio



1 Synchronization without specification of the synchronous position
2 Synchronization with specification of the synchronous position, velocity gearing | 3 Camming with points | 4 Cartesian portal without conveyor tracking

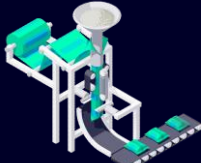
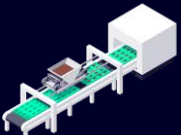
Efficient motion control

SIMATIC S7-1200 G2 key functions and motion control resources



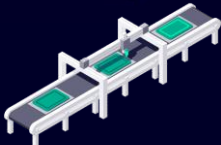
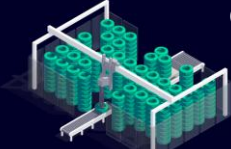
Single axes

- SpeedControl +
- Positioning +
- SuperImposed +
- TorqueLimiting +
- MeasuringInput +
- CamOutput/Track +



Coordinated axes

- GearingRelativ +
- GearingAbsolut +
- Camming +
- Phasing +



Kinematics

- Cartesian (3D+Orientation) +
- SCARA +
- Workspace Zone +

Type of CPU	CPU 1212	CPU 1214
Motion Control Resources	800	800
Extended Motion Control Resources	40	40
Typical Number of Positioning Axes ¹	4	4
Bit performance (ns)	37	37

- ➡ max. 10 PosAxes or max. 5 SyncAxes
- ➡ max. 20 Cams or max. 1 CartesianPortal

¹ At 4 ms Servo/IPO cycle time and 35% CPU load due to Motion Control



Motion Control Resources:
Speed axis = 40 | Positioning axis = 80 | Synchr. Axis = 160 | Output cam= 20 | Output cam track = 160 | Measuring input = 40 | Ext. Encoder = 80

Extended Motion Control Resources:
Cams (1.000 points) = 2 | Kinematic objects= 30

New standard system webpages

SIMATIC S7-1200 G2 webserver

SIEMENS

<<

Overview

Diagnostics

Diagnostics buffer

User program

Recipes

User files

Alarming & Logging

Alarms

Data logs

Maintenance

File browser

Web applications

Menu

Example

Category

Subcategory

SIMATIC S7-1500

CPU 1214FC DC/DC/DC

G2_PL_C_12

Log in with local user account

User

Change password

Log in

Diagnostics > Diagnostics Buffer

SIEMENS			
PLC_1			
Diagnostics > Diagnostics buffer			
Number	Date and time	Event	Status
> 1	11/13/2024 06:24:31.166 PM	Communication initiated request: WARM RESTART - CPU changes from STARTUP to RUN mode	Incoming
> 2	11/13/2024 06:24:31.163 PM	Communication initiated request: WARM RESTART - CPU changes from STOP to STARTUP mode	Incoming
> 3	11/13/2024 06:24:24.461 PM	ES/HMI communication: Transition from provisioning mode to secure mode -	Incoming
> 4	11/13/2024 06:24:24.461 PM	CPU access protection configuration changed -	Incoming
> 5	11/13/2024 06:23:08.646 PM	Follow-on operating mode change - CPU changes from STOP (initialization) to STOP mode	Incoming
> 7	11/13/2024 06:23:08.642 PM	Technology package MC Base loaded: Version: V9.0.0 -	Incoming
> 8	11/13/2024 06:23:08.430 PM	Boot up - CPU changes from OFF to STOP (initialization) mode	Incoming
> 6	11/13/2024 06:23:08.645 PM	Retentive data warning: Retentive data lost - Current CPU operating mode: STOP (initialization)	Incoming

New standard websites offering access to diverse information about the PLC and the user program, as well as custom made web applications with the integrated Web API

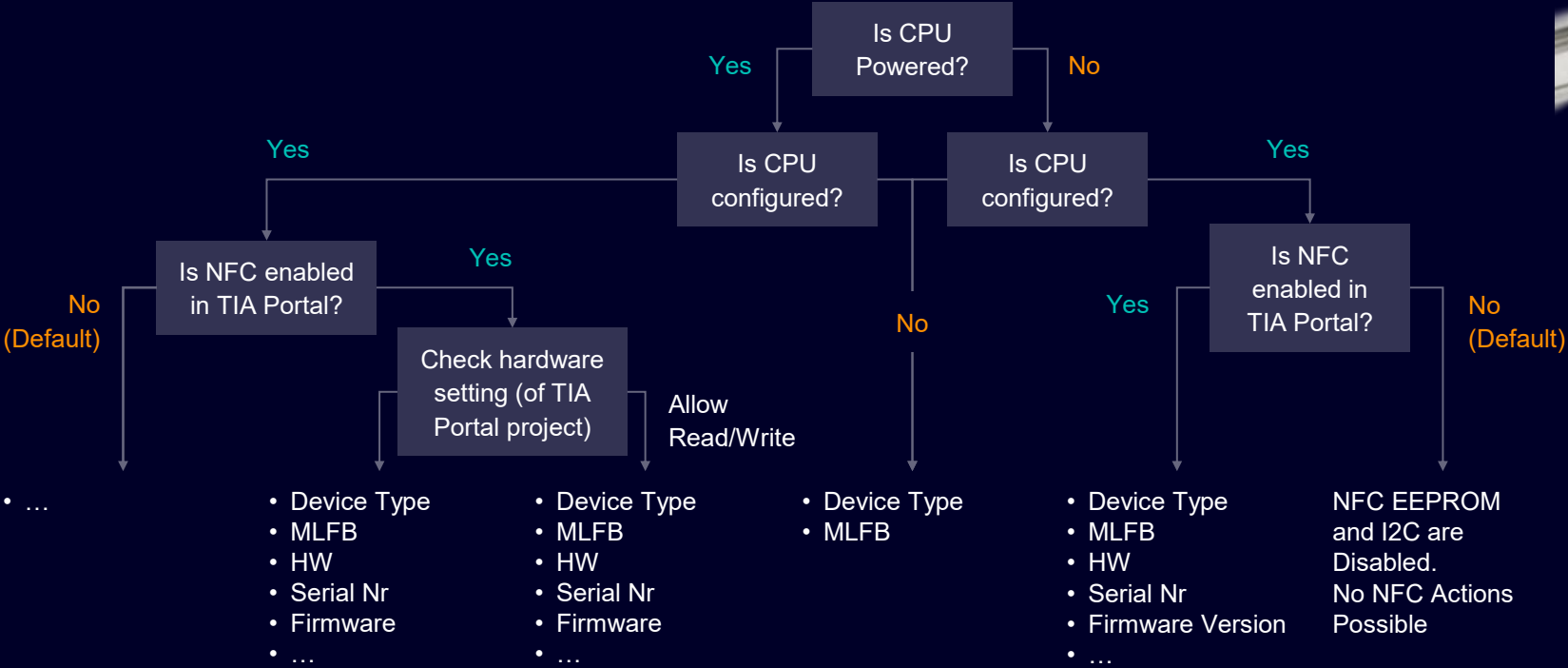
- Firmware version ≥ V4.1
- TIA Portal V21
- Web server configuration enabled
- Available under the url: <https://{ipaddress}/~system>
- Same look & feel as the S7-1500 standard websites

Increased data transparency

NFC function

Near Field Communication (NFC)

- Gather Information without having to power the Device
- Read/Write Application and Diagnostic Data (based on configuration)



Increased data transparency

Overview NFC functionalities

S7-1200 G2 NFC App button	Operation	Condition						
		1	2	3	4	5	6	7
Allows you to view specific device information for the CPU and its connected CB/SBs and CM/SMs  Devices	Device type	Read	Read	–	Read	Read	–	Read
	Article number	Read	Read	–	Read	Read	–	Read
	Hardware version	Read	Read	–	Read	Read	–	Read
	Serial number (SN)	Read	Read	–	Read	Read	–	Read
	Firmware version	Read	Read	–	Read	Read	–	Read
	Slot number	Read	Read	–	Read	Read	–	Read
	MAC address	Read	Read	–	Read	Read	–	Read
	IP address, Subnet, Gateway, PROFINET name	Read/Write	Read	–	Read/Write	Read	–	Read
	Webserver on/off	Read	Read	–	Read	Read	–	–
	TIA Portal version	Read	Read	–	Read	Read	–	–
	SD card info	Read	Read	–	Read	–	–	–
Allows you to read/write operations  Operations	Operation mode	Read/Write	Read	–	Read	–	–	–
	Reset memory	Write	–	–	Write	–	–	–
	Set Time of Day	Write	–	–	Write	–	–	–
Allows you to read diagnostics  Diagnostics	Configured vs actual device diagnostics	Read	Read	–	Read	Read	–	Read
	Cycle times	Read	Read	–	Read	–	–	–
	CPU memory usage	Read	Read	–	Read	–	–	–
	Diagnostic buffer	Read	Read	–	Read	–	–	–



Condition

CPU is powered on:

1. Configured in STEP 7, NFC and write access enabled for the CPU
2. Configured in STEP 7, NFC enabled for the CPU, write access not enabled for the CPU
3. Configured in STEP 7, NFC is not enabled for the CPU
4. Not configured in STEP 7

CPU is powered off:

5. Configured STEP 7, NFC is enabled for the CPU
6. Configured in STEP 7, NFC is not enabled for the CPU
7. Not configured in STEP 7 configured

The right Power Supply Unit

Optimal 24 V DC supply of SIMATIC S7-1200 G2



Power module PM 1207

- Input voltage: 120 - 240 V AC/DC wide range input
- Output: 24 V/5 A
- Efficiency > 88 %
- Power information via diagnostics interface over a digital input of the PLC
- Removeable push-in clamps for input and output
- DIN rail and wall mounting
- Width: only 70 mm, same size with double performance compared to previous device
- 2 variants: without and with Ex-protection certification
- Configurable in the TIA Portal



- Firmware updates provided in SIOS to correct errors and implement functional enhancements
- [Recycler guides](#) for SIMATIC S7-1200 G2 CPUs, signal modules and signal boards are available in SIOS

How to migrate technically

CPU's

Modules

Migration Possibility

SIMATIC S7-1200 to SIMATIC S7-1200 G2: CPU 1212

S7-1200

Type of CPU	CPU 1211C	CPU 1212C	CPU 1212FC
Interfaces			
Program memory/ Data memory	75 kB	100 kB	150 kB
Bit performance (ns)	85	85	85
Integrated DI/DO	6/4	8/6	8/6
Integrated AI/AO	2/-	2/-	2/-
HSC	6	6	6
Width (mm)	90	90	90



S7-1200 G2

CPU 1212C	CPU 1212FC
	
150/500 kB	200/500 kB
37	37
8/6	8/6
Optional SB	Optional SB
8	8
70	70

 PROFINET/IE

Migration Possibility

SIMATIC S7-1200 to SIMATIC S7-1200 G2: CPU 1214

S7-1200

Type of CPU	CPU 1214C	CPU 1214FC	CPU 1215C	CPU 1215FC	CPU 1217C
Interfaces					
Program memory/ Data memory	150 kB	200 kB	200 kB	250 kB	250 kB
Bit performance (ns)	85	85	85	85	85
Integrated DI/DO	14/10	14/10	14/10	14/10	14/10
Integrated AI/AO	2/-	2/-	2/2	2/2	2/2
HSC	6	6	6	6	6
Width (mm)	110	110	130	130	150

S7-1200 G2

CPU 1214C	CPU 1214FC
	
250/750 kB	300/750 kB
37	37
14/10	14/10
Optional SB	Optional SB
8	8
80	80



 PROFINET/IE

TIA Portal

Engineering for standard and fail-safe S7-1200 G2
from TIA Portal V20 onwards

Fail-safe SIMATIC S7-1200 (G2): No more separate Safety license from V20 onwards

STEP 7 Safety Basic will be discontinued from V20 onwards

Until TIA Portal V19

Hardware:
S7-1200 F-CPU/F-DI/F-DQ

Software:

- STEP 7 V19 Basic (or Advanced)
- STEP 7 V19 Safety Basic



SIMATIC S7-1200



Starting with TIA Portal V20

Hardware:
S7-1200 (G2) F-CPU/F-DI/F-DQ

Software:
STEP 7 V20 Basic (or Advanced)



SIMATIC S7-1200 G2



Scalable automation solutions

Scalable portfolio for standard and machine safety functions.



Seamless system integration

Seamlessly integrated in STEP 7 without need for separate license.



Reduce license costs

- Reduce entry costs
- Especially customers requiring just few F-PLCs

Hints

- V18/V19 Safety Basic licenses will still be available
- Future S7-1200 (G2) Hardware will use similar principles
- SUS contracts for Safety Basic will be discontinued end of 2024

TIA Portal V20 onwards STEP 7 Basic

Support of SIMATIC S7-1200 (G2) standard and fail-safe hardware

- S7-1200 (G2) Std.- & F-CPU's
- S7-1200 (G2) Std.- & F- I/O
- ET 200SP Std.- & F-I/O



Supports engineering for standard and fail-safe application

SIMATIC
STEP 7 Basic



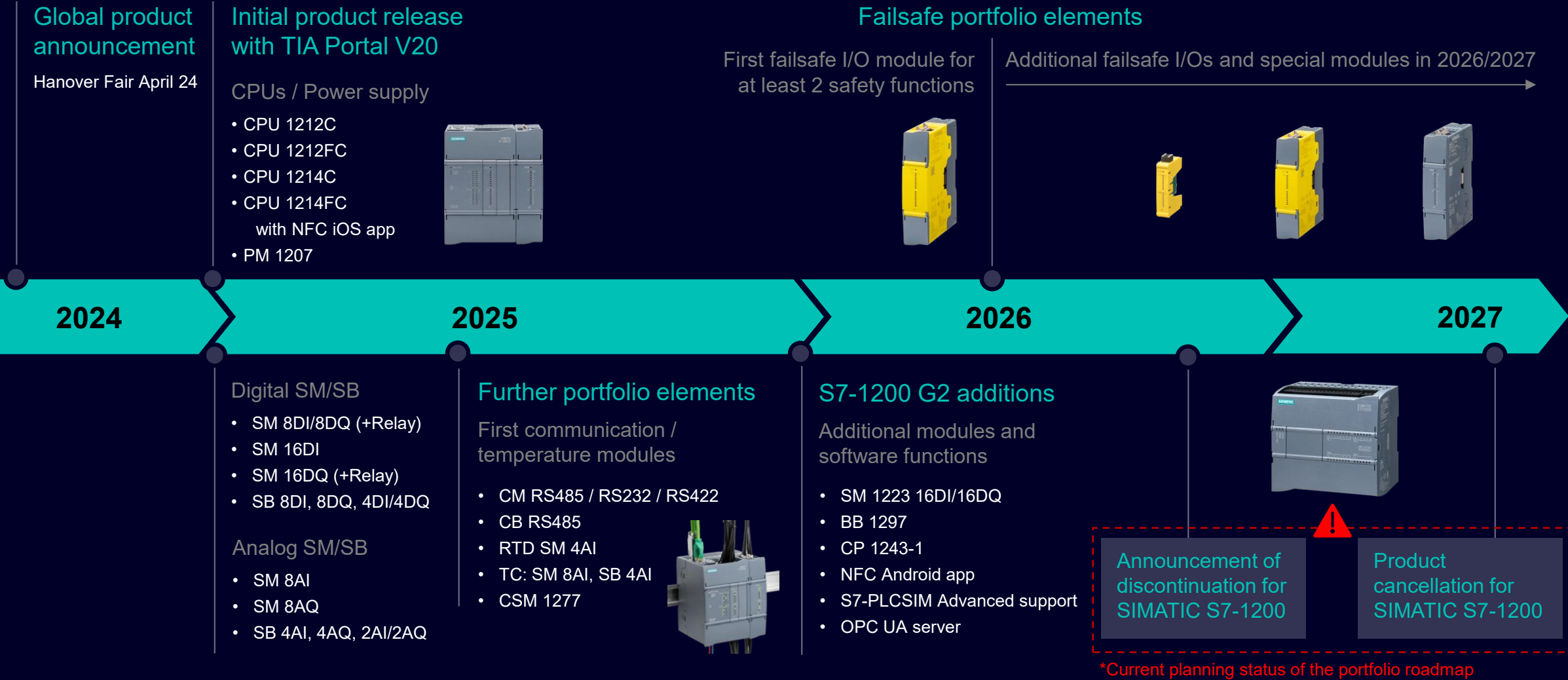
- STEP 7 Basic
 - One engineering package for standard and fail-safe
- S7-1200 (G2) standard & fail-safe incl. ET200 (F) periphery

STEP 7 Basic

One engineering for standard and fail-safe S7-1200 (G2)

SIMATIC S7-1200 G2

Roadmap – Summary and Outlook



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