

CODESYS®

The Comprehensive Software Suite for Automation Technology

Roadmap | April 2025

Hilmar Panzer, Managing Director & CTO

This presentation contains our product planning schedule defined at the time this presentation was created.

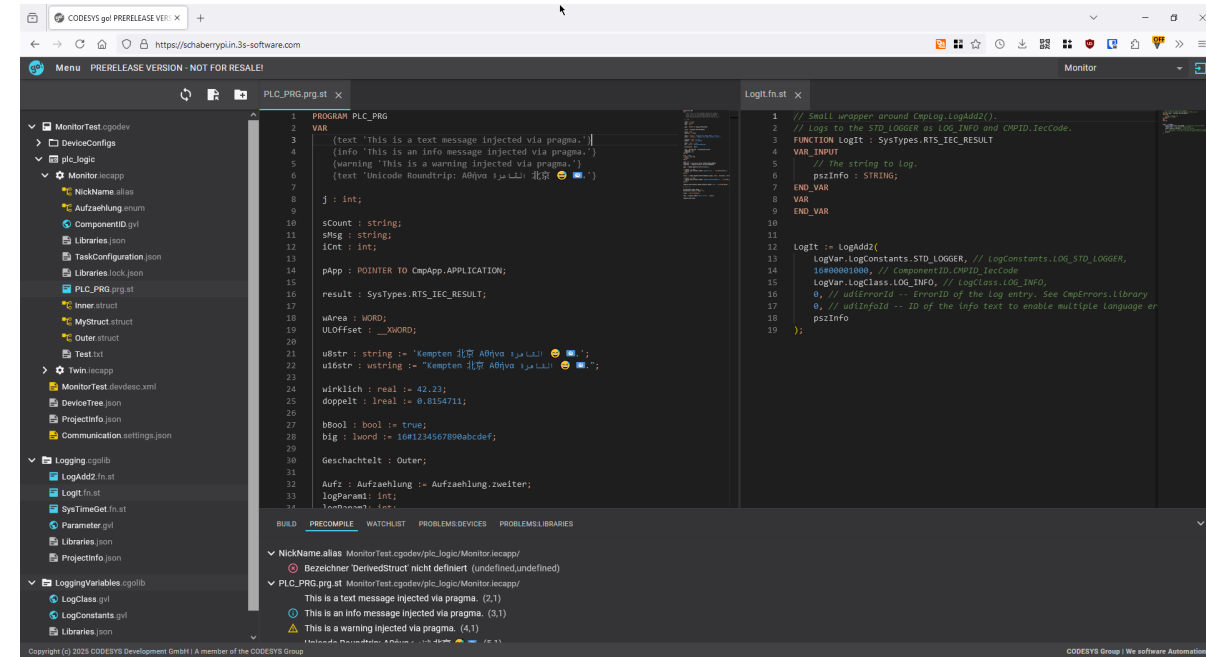
The specified contents and timeframes may change or be rescheduled for various reasons.

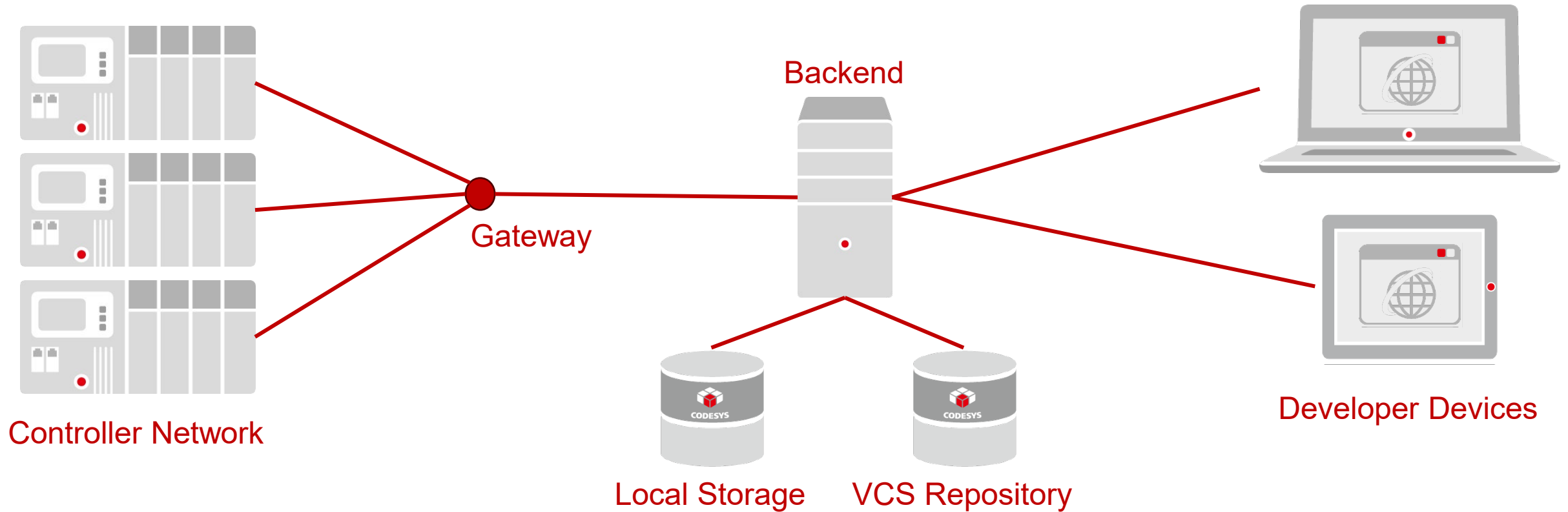
They should therefore be regarded as a statement of intent, but are not binding.



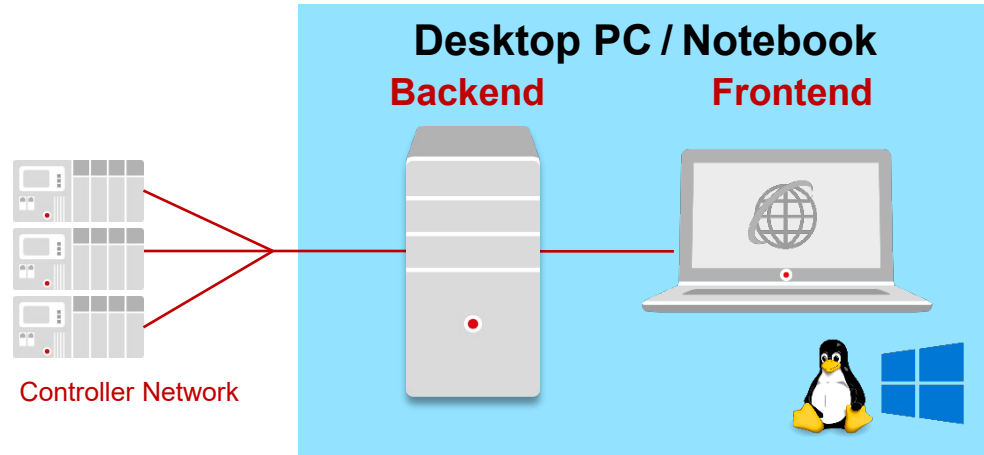
CODESYS go!

- Alternative programming tool based on web technology
 - Only the compilers that are proven in operation are reused from CODESYS V3.
- Compatible with CODESYS Control V3
- Platform-independent engineering tool for CODESYS PLCs
 - Backend running on desktop, server, cloud, or on the PLC itself; Windows- and Linux-based
 - Frontend running on every device with web browser support
- Textual project storage
- Development started in 2020
- First public presentation at the CODESYS Technology Day (10 May 2023)
- First public version will be released in 2025.

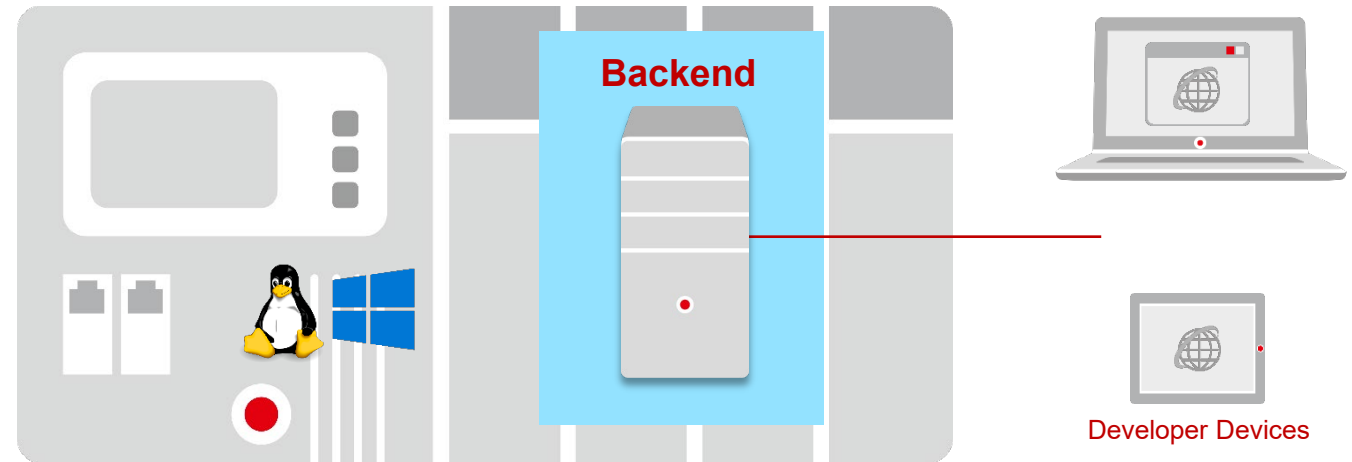




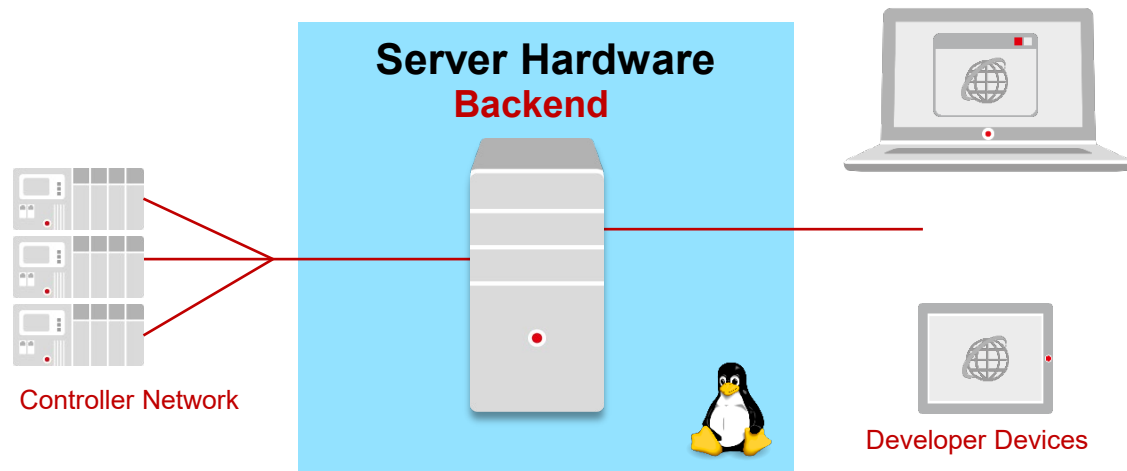
Desktop



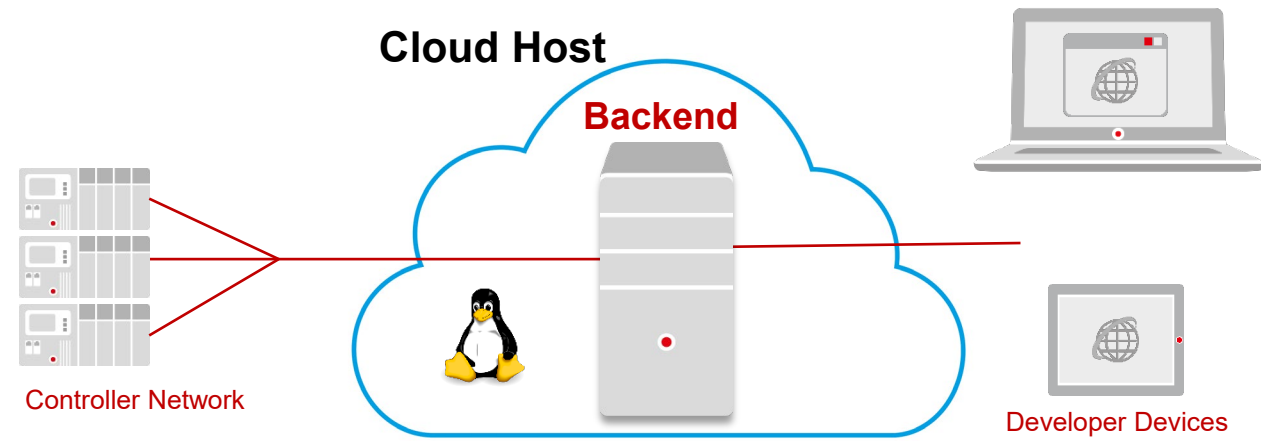
Device



On-Premises



Cloud



CODESYS go! V1.0.0 (end of 2025)

- Architecture and Deployment
 - Extension Platform – component-based architecture, allowing for customer extensions in the future
- Controller deployment
 - Install and run the backend server on Raspberry Pi as proof of concept, other Linux systems can be provided.
- Desktop deployment
 - Install and run both frontend and backend server on a Windows desktop system.
- On-prem deployment
 - Install and run the backend server on a Linux-based server.
- CAS integration – integration into the CODESYS Automation Server



CODESYS go! V1.0.0 (end of 2025)

- UI and editors
 - Navigator and editor/view host
 - Command infrastructure
 - ST editor
 - Enhanced offline functionality
 - Online mode and debugging
 - Ladder editor (offline)
- Fieldbus configuration:
 - Textual configuration of on-board GPIOs on Raspberry Pi with IO mapping
 - EtherCAT (textually configured)
 - MODBUS configuration of client and server (textually and graphically)
- Compiled library generation, compatible with V3



Toolbox customization (2025)

- Customers can define the toolbox content according to their preferences.
- First editor to use this new feature: Ladder (Q4 2025), others will follow

Ladder (Q2 2025)

- Alignment of execution order within a network
- Same behavior as with LD FBD

Scripting (4.2, Q2 2025)

- Update of the scripting engine to IronPython 3

Compiler

- **CI/CD workflow support for Static Analysis (Q2 2025)**
 - Enable the integration of Static Analysis and Profiler into CI/CD workflows.
- **Raw ST parser (V3.5 SP22, Q1 2026)**
 - Improve parsing of raw ST files in compiler to improve readability of File-Based Storage due to less special metadata that are required in the files.
 - Provide possibility to implement several POUs in one single file. (FB with all methods)
- **Native compiler logging features (V3.5 SP22, Q1 2026)**
 - New compiler features to access compile information.
 - Helps application programmers to log info more easily and precisely .

CODESYS Online Help Portal (<https://www.helpme-codesys.com/>)

- Installation of CODESYS Examples directly from the Online Help Portal (Q3 2025)
- Machine translation based on terminology data base (Q3 2025)

CODESYS Virtual Control SL

- Support of RPM Package Manager format (4.15.0.0, Q2 2025)
- Support of Red Hat base image (4.17.0.0, Q3 2025)
- Usability and security improvements (4.15 & 4.16, Q2 2025)
- Kubernetes support (prototypes in 2025, release 2026)
- margo support (prototypes in 2025, release 2026)

User right support: Root access is no longer essential (4.16.0.0, Q2 2025)

Realtime Ethernet on Linux using XDP (2025)

- Fast sending/receiving of Ethernet frames bypassing OS layers

CODESYS Control for Weidmüller SL (4.16.0.0, June 2025)

TargetVisu support for Janz emPC-A/iMX6 SL (4.15.0.0, April 2025)

CODESYS Control (SP21, Q1 2025)

- User management backend to Linux (based on PAM)
- Enhanced real-time ethernet communication using XDP
- Redundancy improvements
- PLCHandler: supports ARM64 platform on Windows

CODESYS Control (SP21 Patch 1, May 2025)

- Consistent RETAIN data for virtual PLCs
 - Provide an efficient mechanism for consistent retains based on a double buffer system.

CODESYS Control (SP22, 2026)

- Independent release cycle for Runtime Toolkits
 - Instead of releasing the runtimes along with CODESYS V3 Essentials, they can be released in an independent cycle.
- Certificate Handling: Improved handling of signed certificates / CSRs
 - CODESYS Automation Server as a certificate server to renew/update certificates
- Licensing infrastructure for device vendors
 - Single license mechanism for device vendors
 - Application-Based Licenses (ABL) support for device vendors
- Redundancy improvements
- Process certification according to IEC 62443-4.1

OPC UA Server

- Non-transparent redundancy (V3.5 SP22, 2026)
- GDS support (V3.5 SP22, 2026)
 - Supports OPC UA certificate management by connecting to a third-party global discovery server.
- Support of backticks (4.7.0.0, 2025)
- Node set export (4.7.0.0, 2025)
 - Supports offline configuration of OPC UA clients connecting to our PLC.
- OPC UA GDS Support (V3.5 SP 22, 2026)
 - Support OPC UA certificate management by connecting to a third-party global discovery server.

OPC UA Client

- Supports certificate chain analysis (V3.5 SP22, 2026).

Symbol Sets Editor (4.7, 2025?)

- Supports PLCHandler, in addition to OPC UA.

OPC UA PubSub (1.3, Q2 2025)

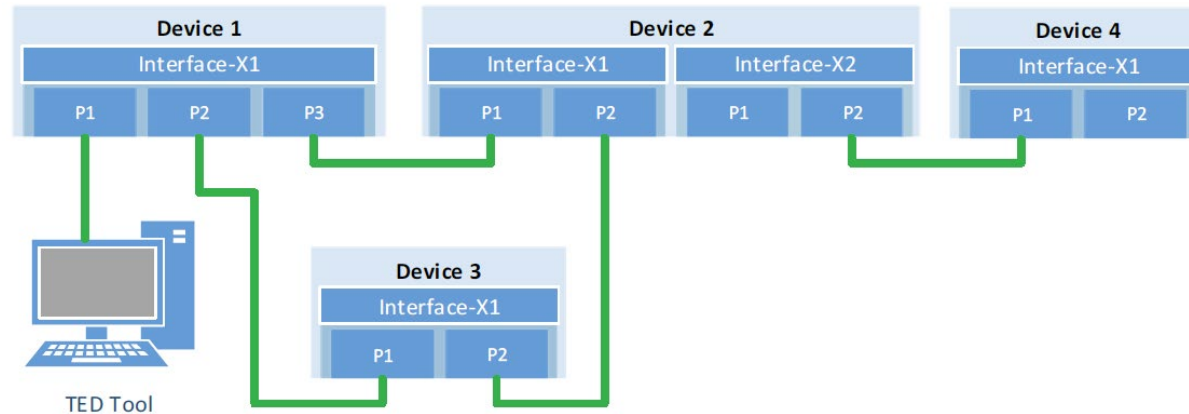
- Secure communication

DNP3 (V2.0, Q2 2025)

- Supports more datatypes for the DNP3 Outstation.

PROFINET

- Topology editor (2026)
 - Defines and supervises the topology of all PROFINET devices graphically.



- Dynamic reconfiguration (4.7, 2025)
 - Allows a bumpless reconfiguration of a PROFINET device.

EtherNet/IP (Q2 2025)

- Network overview
 - A new network overview editor shows and allows to (bulk) edit all connections to all adapters in one list (sorted by adapter).
- Support of asynchronous services
 - The interface doesn't require an immediate answer, so that the application has more than one cycle to generate the response.

MODBUS

- Network redundancy (Q2 2025)
 - Client supports a secondary / back-up connection to the servers.
 - Requires for server devices to support two networks.
 - Requires additional license.
- Support of the CODESYS Redundancy add-on (CPU redundancy) (Q4 2025)

CAN FD (SP22, Q1 2026)

- Configuration dialog for Gateway communication

Online change support in IO configuration (2025 and later)

- Extended online change support for
 - local I/O drivers (SP22, 2026)
 - PROFINET (2026)

String Library (April 2025)

- Optimization for 7-bit ASCII-only strings
- Terminal Null in string buffer simplifies use with classic string functions

IIoT Libraries (April 2025)

- Azure IIoT Hub via Websocket proxies
- Weather Forecast library (WebClient-based)
- „JSON Utilities 2 SL“ as successor of “JSON Utilities SL“ supporting faster operations

Application Composer update (Q2 2025)

- New licensing model
- Maintenance

SRCI (Q3 2025)

- Robotics interface library following PI SRCI specification

SoftMotion basic (4.18.0.0 – April 2025)

- Additional cam segment types inclined and modified sine
- Full support of the new cam segment types in the visualization
- Improved SoE (Servodrive over EtherCAT) support
- Improved SMC3_PersistPosition

Robotics improvements (4.18.0.0 – April 2025)

- Improved logging of errors and path events
- Improved behavior of aborting movements
- Allow different limits for acceleration and deceleration

Robotics improvements (Q4 2025)

- Support for additional/auxiliary axes

CNC improvements (Q4 2025)

- G-code for robotics: allows for programming a robot in G-code
- CNC editor: Supports already existing kernel features (e.g. subprograms, expressions, ...)

SIL3

- **Virtual Safe Control SL**
 - FSoE Master support (Q3 2025)
 - ARM/ARM64 devices support (Q3 2025)
 - External library interface (2026)
- **Git support for Safety SIL3 applications (2025)**

SIL2

- PLCopen FBs for SIL2 (Q2 2025)
 - All PLCopen Safety FBs available for SIL2 runtime (except Motion FBs SafeStop1, SafeStop2, and SafelyLimitedSpeed)
- Resolve strict version binding (2025)
 - The SIL2 package can be used independently from the CODESYS IDE version.

Security

- Certification according to IEC 27001 (Q2 2025)
- Process certification according to IEC 62443-4.1 (SP22, 2026)
 - Establish secure development process (Q2 2025)
 - Finalize security management process (Q4 2025)
 - Finalize security documentation (Q1 2026)
- Product certification according to IEC 62443-4.1
 - Runtime Toolkit (2026)

**Company goal
2025**

Git (Q2 2026)

- File-based storage as backend

File-based storage (Q2 2025, V0.9)

- New project format for CODESYS V3
- Supports *CODESYS go!* project format
Alternative project format that allows to generate and load the new *go!* project format (text-based)
- Will be part of the Professional Developer Edition and require this license.
- Later version (1.0) will contain file format update, harmonized line endings, optimized user experience.

Test Manager (Q4 2025)

- Provides script driver interface to enable usage in CI/CD workflow

Simulation interface (Q2 2025, V0.9)

- Enables virtual commissioning and automated HW/SW testing of CODESYS-controlled machines
- Integrates CODESYS applications in third-party simulation tools (Software-in-the-loop)
- Standard interface based on OPC UA Pub/Sub and information model
- Alternate easily between simulation and real target without project changes
- Preview version for evaluation

On-premises support (Q3 2025)

- Cloud-independent Automation Server on customer's own IT infrastructure
- Supports CODESYS Virtual Control

Support of Certificate Signing Requests (CSR) (April 2025)

- Generate CSRs on the device and transport them from there

File management / backup / restore

- Exchange files between PLCs and clients via browser (released on June 25, 2024)
- Manage files and folders on PLCs (released on June 25, 2024)
- Central file management on the Automation Server (Q2 2025)
- Deployment of additional files (Q2 2025)
- Backup & restore of PLC files in the Automation Server (Q4 2025)

Visu Alarm performance (4.8.0.0, Q2 2025)

- Optimize runtime performance.

WebVisu automatic login (4.8.0.0, Q2 2025)

- Optionally log in as a user with the saved credentials.

VisuDialog optimizations (4.9.0.0, 2025)

- New edit dialogs for special data types like date and time
- Numpad/keypad can also be operated via the keyboard.
- Different keys can be assigned to the keyboard, depending on which language is to be displayed.

Media Player Element for Target Visu (SP22, 2026)

- Support of the Media Player Element for TargetVisu
 - Possibility to display camera streams
 - Possibility to display video streams

WebSocket support for WebServer and WebVisu (SP22, 2026)

- Reduce network load by leveraging WebSocket technology

Visualization Layer Model (4.9.0.0, 2025)

- Different layers for creating a visualization
 - Background layer for optimized drawing of static elements
 - Switching the visibility and editability of additional layers for easier editing of overlapping elements



Thank you for your attention!

Follow us. Stay up to date!



codesys.com/YouTube



codesys.com/LinkedIn

CODESYS® is a registered trademark. Technical specifications are subject to change.
Errors and omissions excepted. No reproduction or distribution, in whole or in part, without prior permission.

Note: Not all CODESYS features are available in all territories.

For more information on geographic restrictions, please contact sales@codesys.com.