CODESYS®

The Comprehensive Software Suite for Automation Technology

Roadmap [last update: September 2024]

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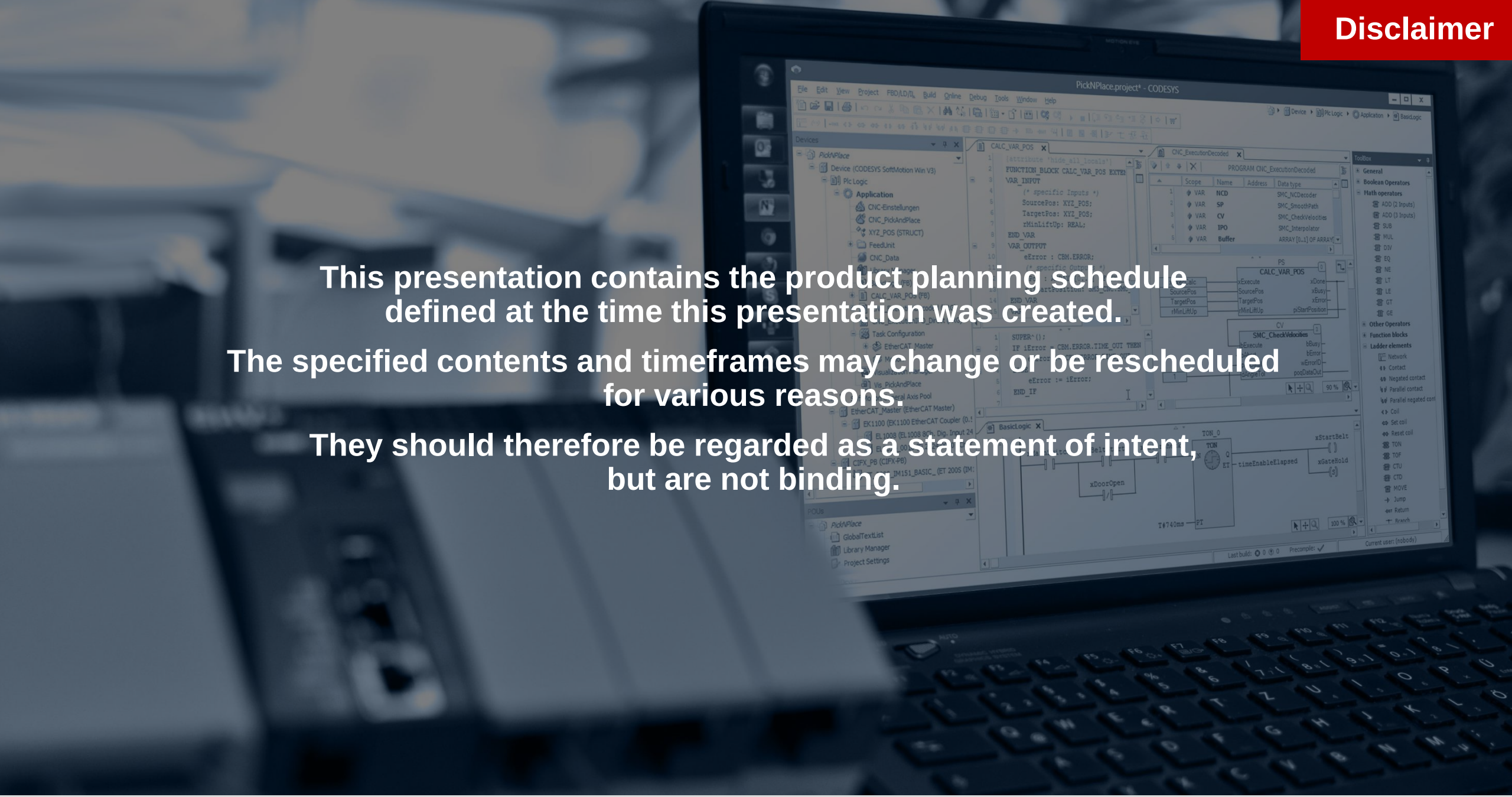
Disclaimer



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

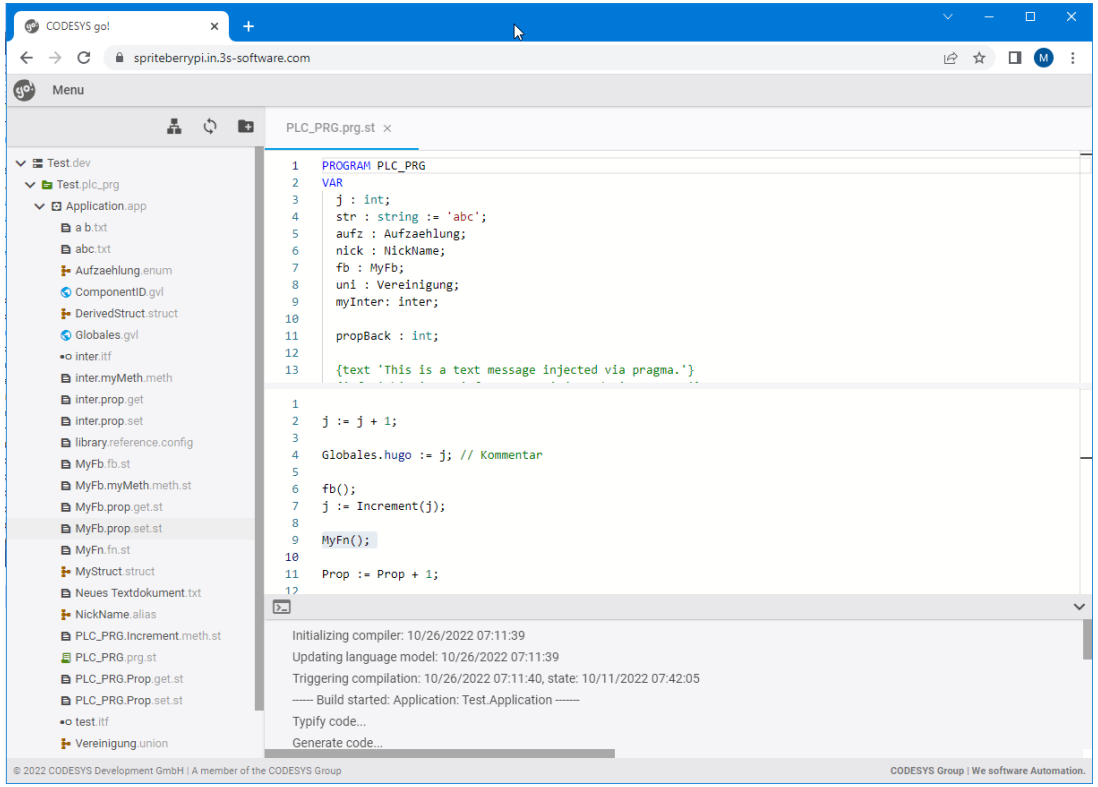
The specified contents and timeframes may change or be rescheduled for various reasons.

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 are reused.
- Compatible with CODESYS Control V3
- Platform-independent engineering tool for CODESYS PLCs
  - Running on desktop, server, cloud, or on the PLC itself
  - Server is running on Windows or Linux
- Textual project storage

- First public presentation on the CODESYS Technology Day (10 May 2023)
- Not yet available for users



CODESYS go! – next steps

- Architecture and deployment
  - Extension platform (Q4 2024)
    - component-based architecture, allowing customer extensions in the future
  - Controller deployment (Q4 2024)
    - install and run the server on Raspberry Pi as proof of concept
  - On-prem deployment (Q4 2024)
    - install and run the server on Linux systems
  - Desktop deployment
    - install and run the server on Windows
  - CAS integration
    - integration into the CODESYS Automation Server
  - Cloud deployment
    - *go!* is hosted on AWS.

CODESYS go! – next steps

- UI and editors
  - Editor/view host (done)
  - Navigator (Q4 2024)
  - Command infrastructure (Q4 2024)
  - Integrated terminal (Q2 2025)
  - ST editor
    - Enhanced offline functionality (Q2 2025)
    - Online mode with basic monitoring (Q4 2024)
    - Extended online mode and debugging (Q2 2025)
  - Ladder editor offline (Q2 2025)
- Fieldbus configuration:
  - EtherCAT (textually configured) (Q4 2024)
  - EtherCAT (graphically configured) (Q2 2025)
- Compiled library generation, compatible with V3 (done)

Modularization, Installer, Deployment Server …

- **Sandbox Light** (released with V3.5 SP20, March 2024)
  - CODESYS installations can use separate repositories and will have no cross impact.
- **Sandbox** installation (Q4 2024)
  - A CODESYS installation is contained in a folder and can be copied from one PC to another without executing a full setup.
  - The CODESYS Installer manages the sandboxes as it does with standard installations.

IEC 61131-10 – essential support (Q1 2025)

- Import/export format according to IEC 61131-10
- First step will cover elements of CODESYS Essentials
- Needs to be implemented subsequently in the add-ons

Scripting (Q2 2025)

- Update scripting engine to IronPython 3

Compiler

- **CI/CD workflow support for Static Analysis (Q2 2025)**
  - Enable the integration of the Static Analysis and the Profiler into CI/CD workflows

- **C Integration discontinuation (Q4 2024)**
  - Use case of C Integration is supported by Runtime Extension SL Package
  - Discontinue the old C Integration add-on

- **Library compatibility (V3.5 SP21, Q1 2025)**
  - Allow to use the latest versions of CODESYS for editing libraries without breaking compatibility to previous versions.
  - Not all features in library will be supported, most notably libraries containing visualization elements.

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

- Installation of CODESYS Examples directly from the Online Help Portal (Q4 2024)
- Machine translation based on terminology data base (Q1 2025)

CODESYS Virtual Control SL

CODESYS Virtual Control SL (4.12.0.0, 4.13.0.0)

- Runtime running in a container
- Easy to install and use
- Scalable (many runtimes on one device)
- Connection to field via IT mechanisms (vLAN, vXLan, TSN, specialized switches)
- Delivered as Debian (osadl) based container image

CODESYS Virtual Control SL (4.14.0.0 – Q4 2024)

- Usability and security improvements

RedHat integration (Q4 2024)

- Delivered as RedHat based container image (UBI)

TargetVisu support for Janz emPC-A/iMX6 SL (Q1 2025)

SL Deploy Tool (4.14.0.0 – Q4 2024)

- Unified tool for all SL platforms
- Improved usability

Realtime Ethernet on Linux using XDP (2025)

- Fast sending/receiving of Ethernet frames bypassing OS layers

CODESYS Control for Weidmüller SL (Q1 2025)

User right support: root access is not longer essential (Q1 2025)

CODESYS Control

- Independent release cycle for Runtime Toolkits (2025)
  - Instead of releasing the runtimes along with CODESYS V3 Essentials, they can be released in an independent cycle.
- User management backend to Linux (based on PAM) (SP21, Q1 2025)
- Enhanced Realtime Ethernet Communication using XDP (SP21, Q1 2025)
- Redundancy improvements (SP21, Q1 2025)
- PLCHandler: support ARM64 platform on Windows (SP21, Q1 2025)
- Handling of certificates in the runtime (2026)
  - SCEP support (to enroll certificates)
  - Improve management of certificates

OPC UA

- OPC UA non-transparent redundancy (V3.5 SP21, Q1 2025)
- OPC UA compliant alarms (V3.5 SP21, Q1 2025)
  - Improve the current basic support of alarms and events
- OPC UA Server certification
  - Embedded device profile (V3.5 SP21, Q1 2025)

OPC UA PubSub

- Secure communication (Q2 2025)

Symbol Sets Editor (Q2 2025)

- Support of PLCHandler, in addition to OPC UA

PROFINET

- Certification on virtual controls (Q4 2024)
- Topology editor (2025)
  - define and supervise graphically the topology of all PROFINET devices
- Dynamic reconfiguration (2025)
  - Allows a bumpless reconfiguration of a PROFINET device.

EtherNet/IP (Q4 2024)

- Connection API for scanner and local adapter (Q4 2024)
- Performance improvements (Q4 2024)
- Network overview (Q2 2025)
  - A new network overview editor shows and allows to edit all connections to all adapters in one list (sorted by Adapter).
- Support asynchronous services
  - The interface to implement acyclic services currently requires an immediate answer. Change this interface to allow asynchronous answers, which allow the result not to be processed within the same cycle.

CAN FD (SP21, Q1 2025)

- Support layer 2
- Only for communication between controller and programming system

Online change support in IO configuration (2025 and later)

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

IIoT Libraries (Q1 2025)

- Azure IIoT Hub via Websocket proxies
- Weather Forecast library (WebClient-based)

Application Composer update (Q1 2025)

- Performance and licensing improvements
- Maintenance

SRCI (Q2 2025)

- Robotics interface library following PI SRCI specification

PLCopen FBs: MC_CamIn extensions II (4.18.0.0 – Q4 2024)

- Additional segment types inclined and modified sine
- Full support of the new segment types in the visualization

SoftMotion basic: trigger and forecast (4.18.0.0 – Q4 2024)

- Improved user interface for triggers

Robotics improvements (4.18.0.0 – Q4 2024)

- Add-on for Stäubli robot support

Robotics improvements (Q2 2025)

- Support for additional/auxiliary axes

CNC improvements (Q2 2025)

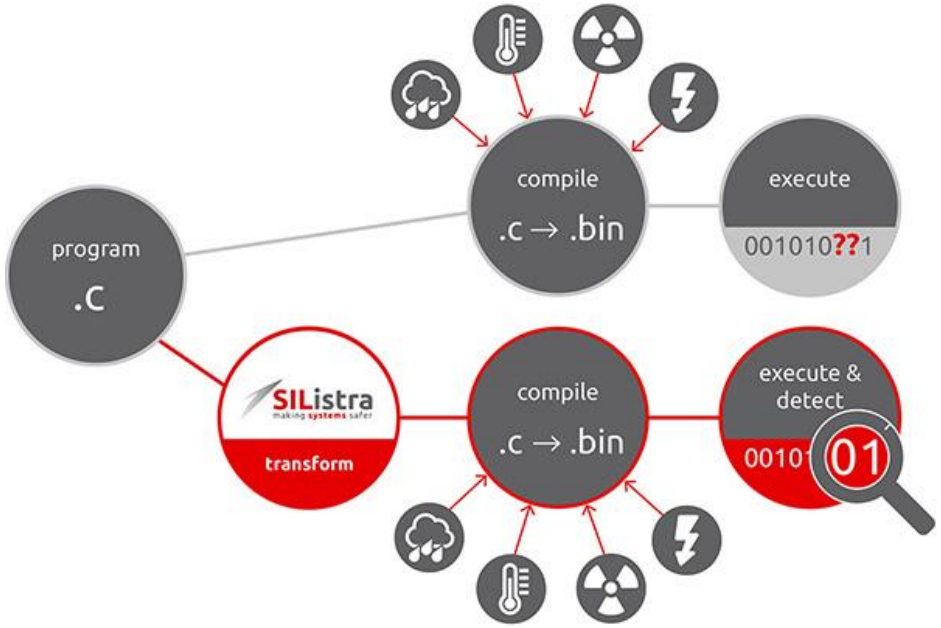
- G-code for robotics: allow to program a robot by G-code
- CNC editor: support already existing kernel features (e.g. sub programs, expressions, …)

SIL3

- **PROFISAFE 2.6 (Q4 2024)**

- **Virtual Safe Control SL (Q4 2024)**
  - Based on “Coded Processing”
  - Certified SIL3 runtime based on software
  - Running on standard x86 hardware

  - FSoE Master support (Q3 2025)
  - ARM/ARM64 devices support (Q3 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 independent from the CODESYS IDE version.

Git (Q2 2025)

- File Based Storage as backend
- Usability improvements

File Based Storage (Q2 2025)

- New project format for CODESYS V3
- Support *CODESYS go!* project format
  Alternative project format that allows to generate and load the new *go!* project format (text-based)
- Will be part of Professional Developer Edition and require this license.

Simulation interface (Q1 2025)

- Enable virtual commissioning and automated HW/SW testing of CODESYS-controlled machines
- Integrate CODESYS applications in third-party simulation tools (Software-in-the-loop)
- Standard interface based on OPC UA PubSub and information model
- Alternate easily between simulation and real target without project changes

On-premises support (Q4 2024)

- Cloud-independent Automation Server on customer's own IT infrastructure
- Pre-release versions for pilot customers in Q3 2024

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 (Q1 2025)
- Deployment of additional files (Q1 2025)
- Backup & restore of PLC files in the Automation Server (Q2 2025)

Multi-application deployment (Q1 2025)

New features and functionalities

- Certificate management (Q4 2024)
- Encrypted communication edge <-> PLC (Q4 2024)
- CODESYS Virtual Control support (Q4 2024)
- Rename devices via Automation Server (Q1 2025)
- Multi-edit and tags for projects and applications (Q1 2025)

Responsive design (4.7.0.0 – Q4 2024)

- Repositioning of elements depending on the client size
- Changing the size of elements depending on the client size

Alarm management (4.7.0.0 – Q4 2024)

- Support of online change

Client-specific localization (4.7.0.0 – Q4 2024)

- Each client can define the language.

XY chart for date/time data types (4.7.0.0 – Q4 2024)

- Use Date, Time, DateAndTime and TimeOfDay variables for an axis.

Scripting support (4.7.0.0 – Q4 2024)

- Typical changes to a visualization can then be carried out using CODESYS Scripting.

Target Visu Overlay (V3.5 SP21, Q1 2025)

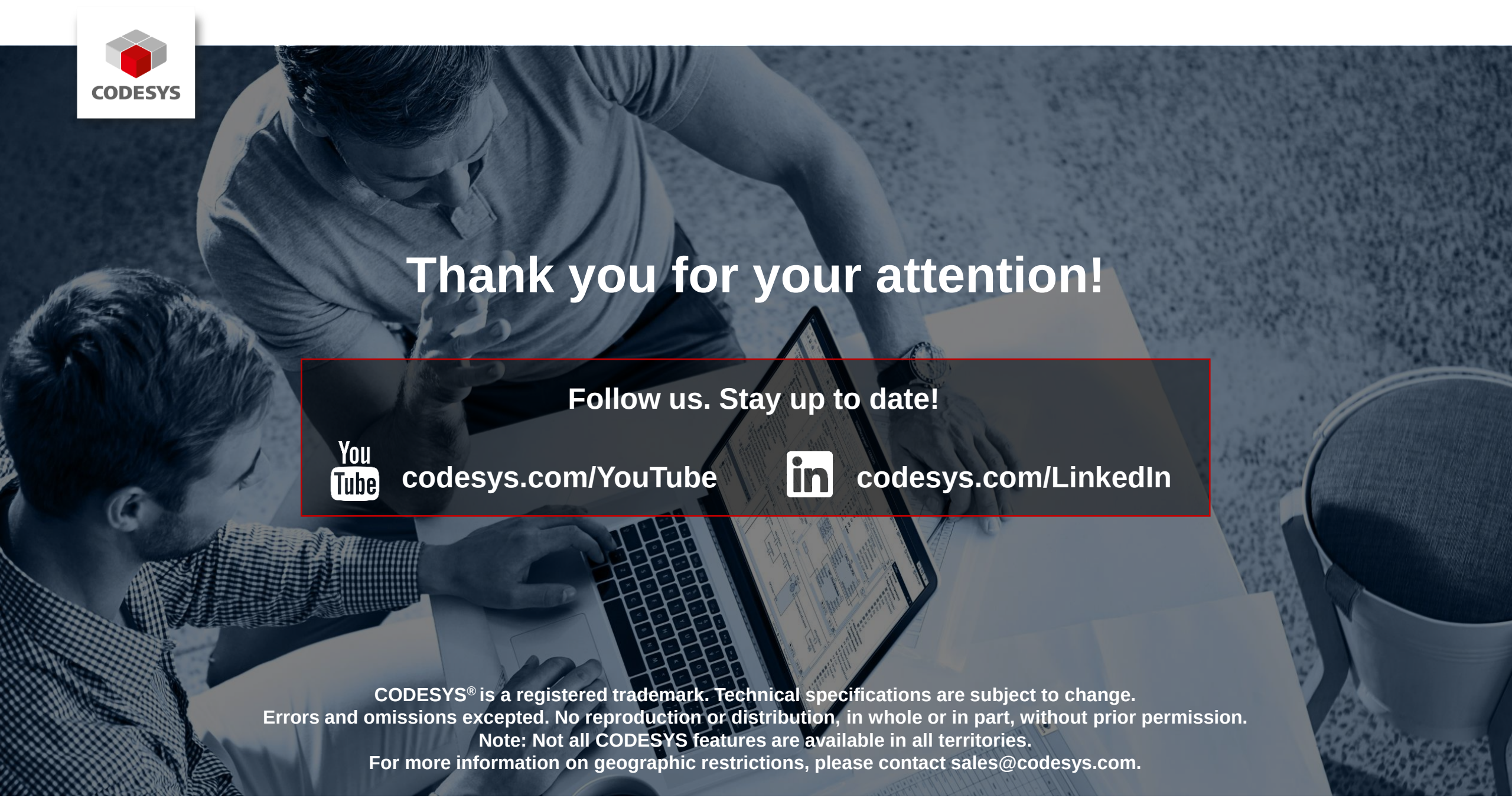
- Performance optimization when switching pages

QML Media Player for Target Visualization (V3.5 SP21, Q1 2025)

- Ready-to-use solution for camera streams

WebSocket support for WebServer and WebVisu (2025)

- Reduce network load by leveraging WebSocket technology



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