CODESYS

For Users



CODESYS®

One software.
All applications.
Your automation solution.

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Your customized automation solution in no time - with CODESYS.

01

Choose your hardware – independent from the manufacturer

- Linux- or Windows-based embedded devices, boards, industrial PCs, server platforms or virtual PLCs with container/hypervisor
- Open industrial controllers
- CODESYS-compatible devices from around 500 suppliers

CODESYS turns your hardware into a **full-fledged controller.**

02

Choose your functionality

- Visualization and communication with other systems
- Testing, debugging, analysis, version control
- Fieldbus and I/O connection
- Deployment of motion control, CNC, robotics, and safety

Programming and engineering with **scalable function range**

03

Choose between extensive Industry 4.0 possibilities

- Administration platform for your controllers and projects
- Remote maintenance and remote access
- Data logging and display
- Connection to external systems for Big Data/Machine Learning/AI

Competitive edge thanks to **forward-thinking technology**

Qualified support whenever you need it, for example in these cases:

- Establishment of continuous integration processes
- Creation of libraries
- Prototypes
- Application development

Machine Engineering and Production Ltd.* uses self-built systems to manufacture consumer goods at various locations. CODESYS was the automation software of choice right from the start.

CONTROLLING
- Real-time Linux-based SoftPLCs on industrial PCs for compute-intensive processes, as well as virtual controllers on server platforms with container technology
- Safety controllers for functional safety, partly virtualized per Diversified Encoding based on Coded Processing
- Central orchestration of virtual controllers

COMMUNICATION
- EtherCAT for I/Os and drives incl. programmable safety terminals
- OPC UA server/client for data exchange between interconnected machines

ADD-ONS
- Motion, CNC, and robotics functionality for handling tasks
- Visualization on remote displays for commissioning, operation and monitoring
- Support in establishing a continuous integration process for application development

INDUSTRY 4.0 & IIoT
- Cloud-based rollout of application updates to extend the functionality of the system
- Logging, analysis, and display of control data via seamlessly connected cloud platform

The machines of Mobile Machines Corp.* are in operation around the world and can be accessed remotely at any time. For this purpose, the company benefits from the powerful possibilities in CODESYS.

CONTROLLING
- Mobile control units (ECUs) for electrical automation, optionally with safety certification according to EN13849 PLc/d

COMMUNICATION
- CAN bus for communication with sensors, encoders, actors, and control terminals via CANopen or J1939

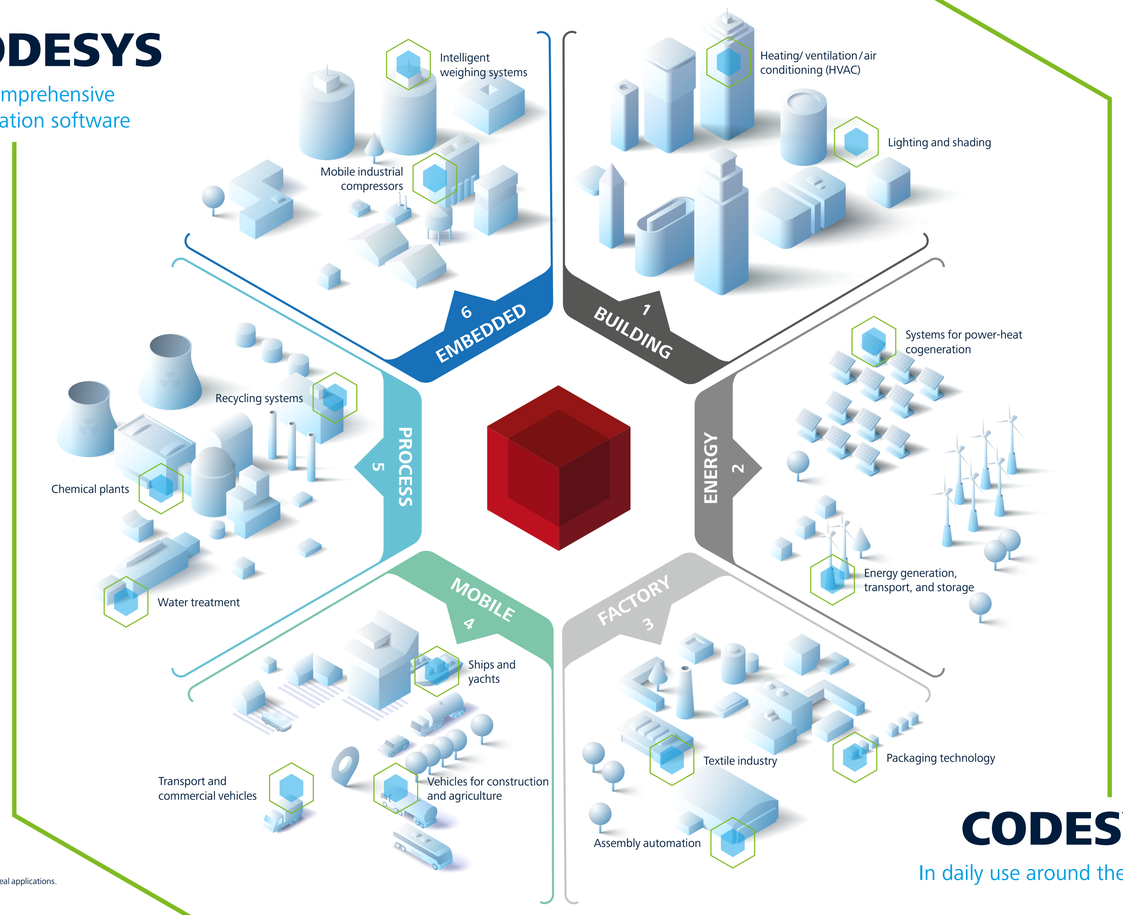
ADD-ONS
- Static code analysis for early detection of potential programming errors
- Profiling/test automation tools for facilitated acceptance according to EN13849 PLd
- Creation of graphical user interfaces for testing and commissioning via WiFi

INDUSTRY 4.0 & IIoT
- Remote access for maintenance, diagnostics, monitoring, and debugging via the associated Industry 4.0 platform
- Cloud-supported analysis of operating data
- Connection to public cloud systems via MQTT for predictive maintenance by means of AI algorithms

*All company names mentioned are fictional and exemplary for real applications.

CODESYS

The comprehensive automation software



CODESYS

In daily use around the world

For the automation of building complexes and the management of the associated facilities, Advanced Facility Management Ltd.* fully relies on CODESYS in all areas.

CONTROLLING
- Expandable panel controls thanks to manufacturer independence and open systems

COMMUNICATION
- Industry standard protocols such as KNX, BACnet, and Modbus

ADD-ONS
- Engineering software for the creation of logical links and sequences
- Convenient graphical configuration of aggregates/units for trade-specific application
- Worldwide available visualizations for monitoring and operation

INDUSTRY 4.0 & IIoT
- OPC UA Pub/Sub for outsourced data distribution to many recipients
- Connection of external APIs and cloud providers through IoT clients for efficient energy management, e.g. at the energy exchange
- Analysis of incoming measurement data in the cloud and presentation of the results on configurable dashboards

As a system integrator, the engineering firm Easy System Integration* connects complex technical systems with each other at the highest level. For efficient automation solutions, the company uses the wide range of features CODESYS has to offer.

CONTROLLING
- Evaluation hardware for prototypes, e.g. Raspberry Pi or PC
- Devices from around 500 manufacturers in a wide variety of form factors and performance classes

COMMUNICATION
- Ethernet-based protocols such as PROFINET, EtherNet/IP, and EtherCAT

ADD-ONS
- Git connection for efficient collaboration of multiple application developers
- Graphical and text-based programming languages for any purpose, e.g. ST, LD, and UML
- Seamlessly integrated visualization editor for creating individual graphical user interfaces for operation, display, and alarm management
- Regular classes by experienced trainers

INDUSTRY 4.0 & IIoT
- Web client for communication with REST services to connect external systems
- Worldwide access to controllers, associated projects, and applications
- User and rights management for secure networking with colleagues and customers

CODESYS | The manufacturer-independent IEC 61131-3 Software Suite

YOUR BASIC PACKAGE

CODESYS Controller

SoftPLC, virtual PLC or CODESYS-based controller

CODESYS Development System

A free tool for all tasks and applications

CODESYS Automation Server

Cloud-based platform for the management of your controllers and projects

YOUR ADDITIONAL OPTIONS

Extend your solution according to your individual requirements.

- Fieldbuses and communication protocols for any application field
- Safety functionality to ensure safe applications
- New technologies for Industry 4.0 and IIoT
- State of the art visualization
- Powerful features for motion, CNC, and robotics control
- Consulting and training by experienced CODESYS professionals
- Online access to libraries, example projects, and add-ons

Many more options, such as redundancy, security, interactive community…

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