



# **CODESYS Update: New features everyone needs**

**CODESYS Users' Conference 2014, Boris Schuster**

1

Engineering features

2

Visualization features

3

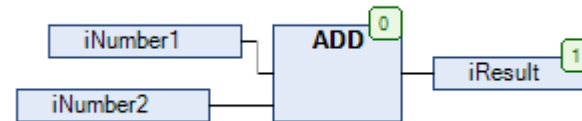
Runtime features

4

Fieldbus features

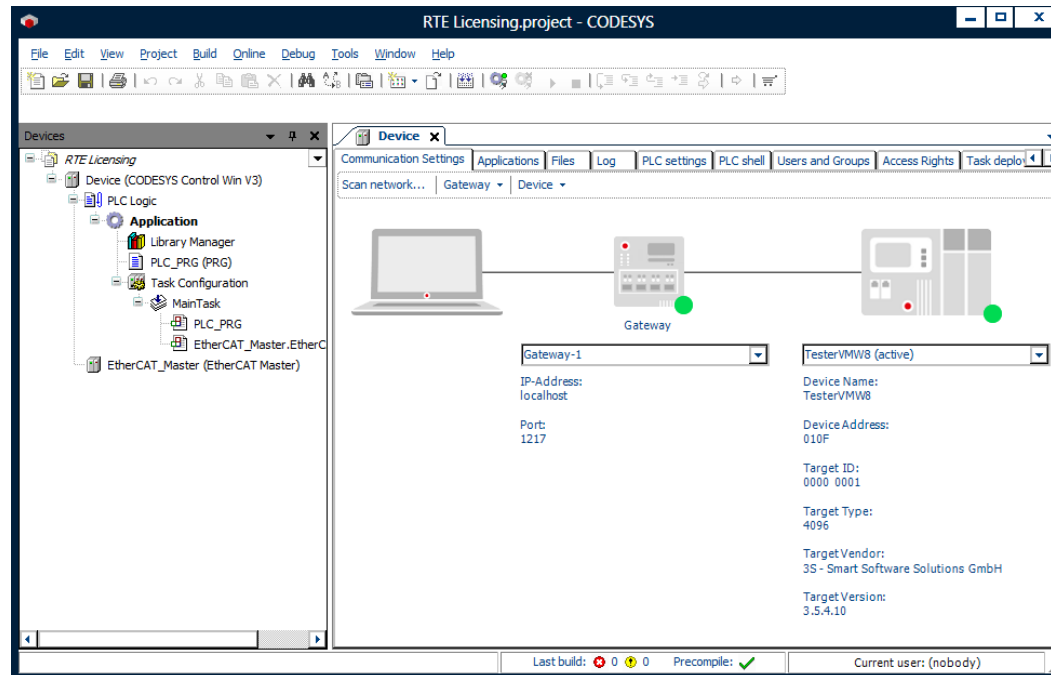
## Improvement of the CFC editor

- Influenceable connecting line
- On demand routing - faster handling
- Element groups
- Colored connecting lines according to data types
- Improved mouse and zoom handling (all graphical editors)
- Grid lines
- Improved monitoring
- Flow Control (as of V 3.5 SP4)
- Improved printing



## New communication dialog

- Simplified connection to the controller
- Device names or IP addresses can be filed and managed as favorites.
- Favorites (gateways and controllers) can easily be selected via menu.





## New library concept

- Introduction of "free" placeholders
  - No resolution via device description or library profile
  - Users can choose version in the library manager
  - "Project Environment" dialog offers updates.
- Self definition of libraries
  - Implementation libraries (→ should be inserted via placeholders)
  - Interface libraries (→ should be inserted via "star")
  - Container libraries (→ should be inserted via concrete version)
- Significant facilitation when adding library references



# Engineering features

## Improvements in performance and debugging

- Fast online change in case of
  - Code modifications
  - Modifications of initial values
  - New local variables in functions, methods and programs
- Improved debugging
  - New details in the dialog following crashes
  - Crash position with "GoTo" function
- Conditional breakpoints

## New plug-in EPLAN Exchange

- Available in the CODESYS Store



**EPLAN Exchange**

The product EPLAN Exchange allows to import and export device configurations from and to EPLAN Electric P8 via the PLC exchange format (pbf files) of EPLAN.

Version: 1.0.0.0  
Order number: 602014-F

€500.00  
plus VAT

Download >

Qty:  Add to Cart >

This product requires a dongle [More](#) [Add to My Wishlist](#) [Recommend Product](#)

- Tool enabling the exchange of configuration data between EPLAN Electric and CODESYS
- Exchange format: \*.pbf (standard PLC exchange format of EPLAN)
- Requirement: EPLAN Electric P8 with “PLC & BUS Extension”
- Live demonstration

1

Engineering features

2

Visualization features

3

Runtime features

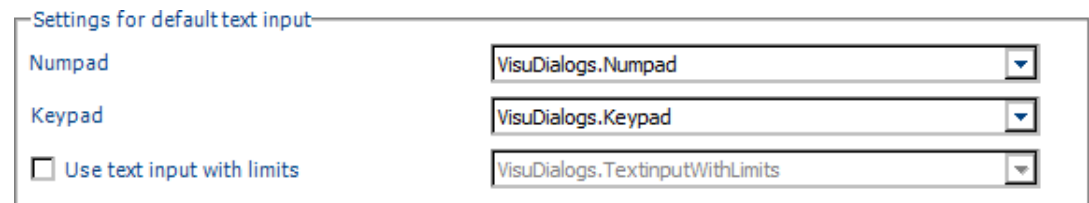
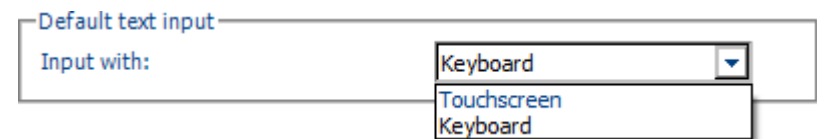
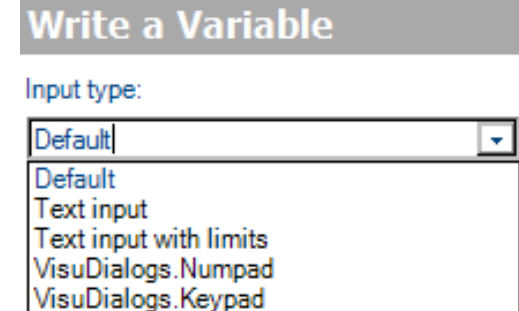
4

Fieldbus features



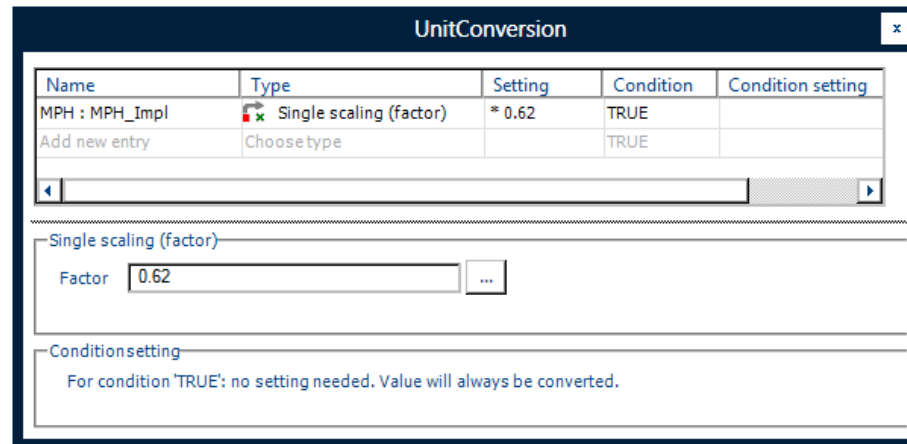
## Improved value input

- Two new input types
  - "Limited text input"
    - Opens dialog during input
    - Part of the visualization dialog
    - Freely configurable
  - "Default"
    - Definition of the input type in each Visu client
  
- Visualization Manager
  - Direct selection of the desired text input template (numpad/keypad) via "Settings"



## Unit conversion

- New object type: "Unit conversion"
- Generation of one FB per conversion
- Automatic generation of one global variable per conversion name



- Usage:
  - Within the application
  - In the visualization
  - Separation of display and value (e. g. for different countries)

## Rotation of texts and images

- New feature: "Interior rotation"
  - Usage: e. g. labeling of scales, rotation of arrows
  
- Facilitated usage of the frame element
  - Selection of the referenced visualization through variable instances

Absolute movement	
+ Movement	
Rotation	
Scaling	
Interior rotation	PLC_PRG.angle

1

Engineering features

2

Visualization features

3

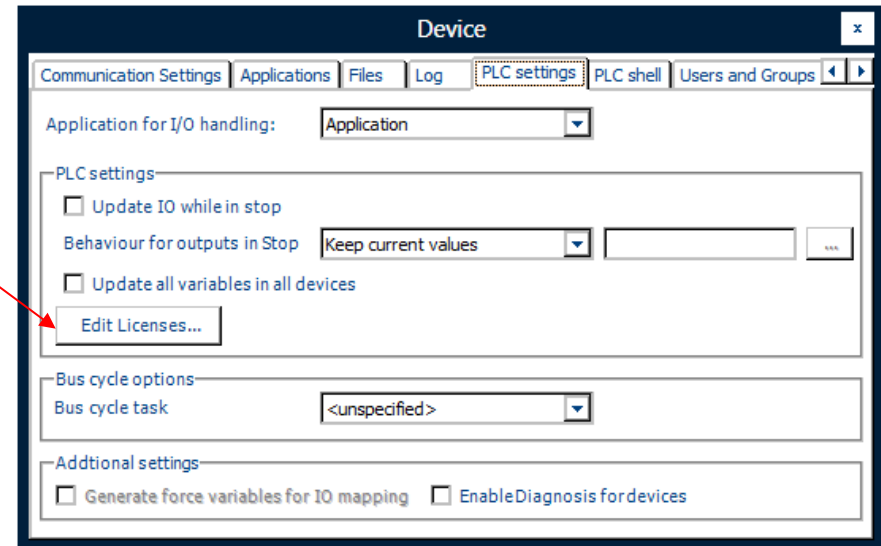
Runtime features

4

Fieldbus features

## Device licensing

- Allows for the licensing of libraries/device options per controller
- New entry in the PLC settings: "Edit licences"
- Offers entirely new options for device selection and functional extension of an existing system
  - A missing fieldbus or a visualization can be replaced for a single solution (device) without exchanging the PLC.





## Device licensing: Activation and license purchase

- Licences can be activated per device on license containers.
  - CODESYS Runtime Key (USB, SD card, CF card)
    - Available under Windows, WindowsCE and Linux as of V3.5.1.0.
    - Additional feature: Protecting the boot application
  - CODESYS Software Key (without hardware)
    - Based on a unique device identification feature (e. g. CPU serial number)
    - Currently available under Windows and Linux - based on WIBU SmartBind mechanism (further operating systems in development)
- Licenses can be purchased and activated as usual in the CODESYS Store (online and offline)

**1**

Engineering features

**2**

Visualization features

**3**

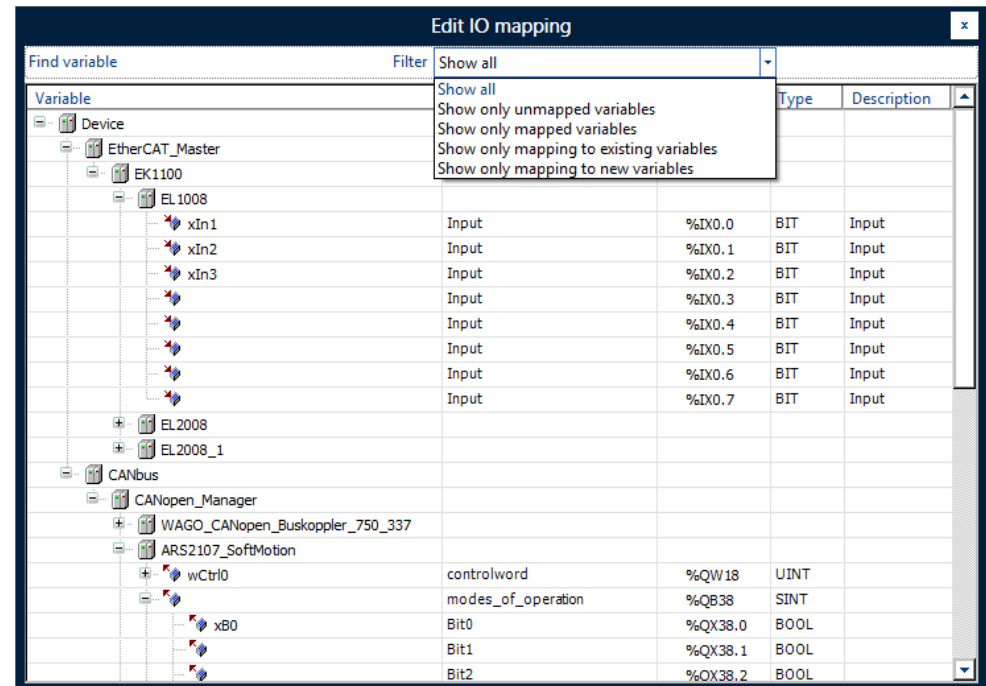
Runtime features

**4**

Fieldbus features

## I/O mapping editor

- New editor for the global editing of the I/O images of all fieldbus devices
- Available in the context menu of the controller







## Overall improvements and new products

- Multi-select and multi-copy of channels in the I/O tab and I/O mapping editor
  - Proceed to the next line with <RETURN>
- Device repository
  - Automatically recognizes file types - recognition/installation of all XML files, CANopen-eds and PROFIBUS files



## Overall improvements and new products

- CODESYS EtherNet/IP Master (configurator & stack) released
  - Realized as IEC 61131-3 library
  - No additional hardware necessary
  - User library for acyclic services
- CODESYS CANopen
  - CANopen Safety Stack released
  - CANopen Slave
    - Configuration can now be imported from the EDS files
    - Configurable object directory
  - NMT malfunction configurable



Inspiring Automation Solutions

Thank you for your attention.