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Introduction: CoDeSys V3

We software Automation.

CoDeSys 3.0

Enter the next level!



Overview

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- § The five main improvements
- § Further Improvements in detail (excerpt)



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Object Orientation

PLC Networks

Version Profiles

IEC 61131-3 Visualisation

Automation Platform



CoDeSys V3: Object Orientation

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Interface

Class

Methods

Seamless extension with new keywords

```
1 FUNCTION_BLOCK Objekt EXTENDS BaseClass IMPLEMENTS Interf
2 VAR_INPUT
3   P1: BOOL;
4   P2: BOOL;
5 END_VAR
6 VAR_OUTPUT
7   Res: INT;
8 END_VAR
9 VAR
10  Internal: BOOL;
11 END_VAR
1 Res := SEL(P1, 100, 200);
2 Internal := NOT(P2);
```

Description	Project	Object	Position
Build complete -- 0 errors, 0 warnings : ready for download!			
typify code ...			
Compile time before typification: 796 ms			
Compile time after typification: 812 ms			
Size of generated code: 0 bytes	MyFirstFanta		
Compile complete -- 0 errors, 0 warnings			

- Object-orientation is an option – you can certainly program your applications without object orientation



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CoDeSys V3: Object Orientation

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CoDeSys V3 lets you program your PLC
with the advantages of high-level
programming languages.



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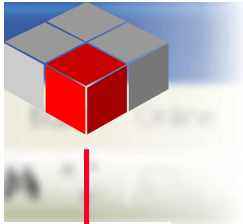
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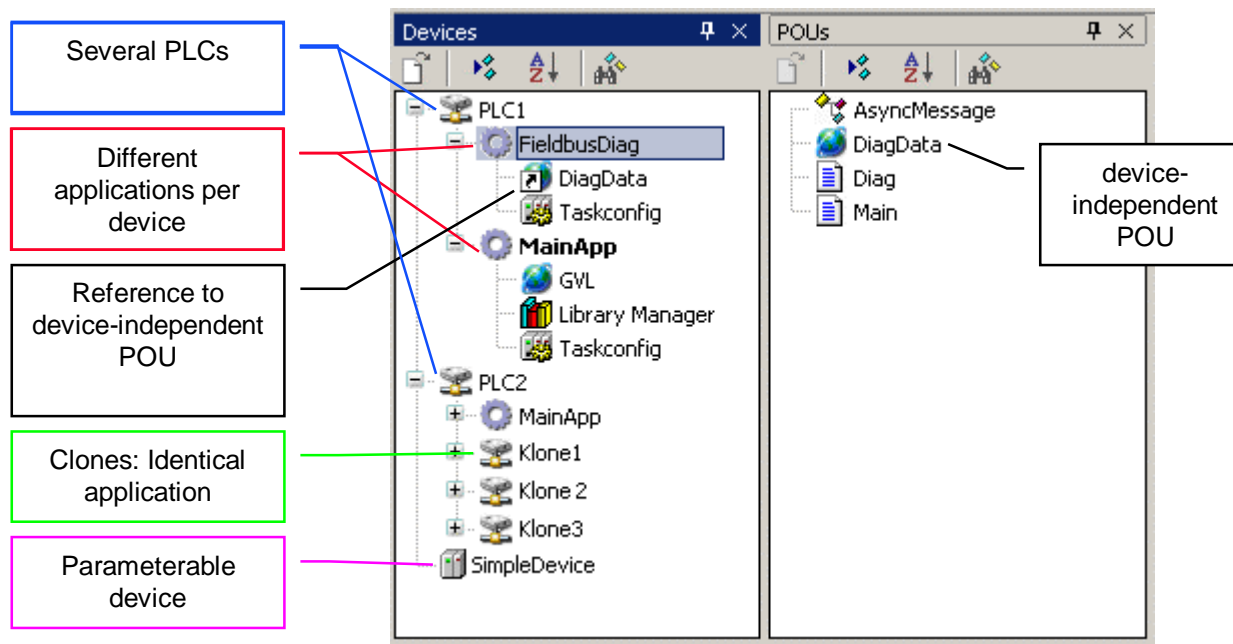
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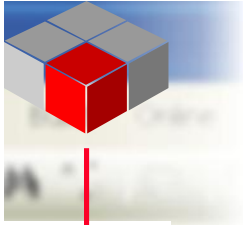
CoDeSys V3: PLC Networks

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CoDeSys V3 lets you program all your
**controller devices in one single project –
regardless of manufacturer or type.**



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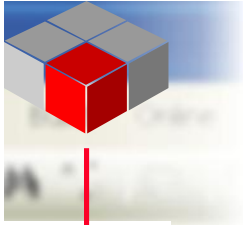
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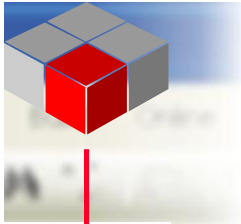
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CoDeSys V3: Version Profiles

- § Installation of several component versions simultaneously
- § Individual components can be added / updated without having to update the whole version
- § The active version is determined by a selected version profile, which is saved in the project è Every project knows with which version it was created
- § Each new installation contains all previous versions
- è Every service employee has all versions available

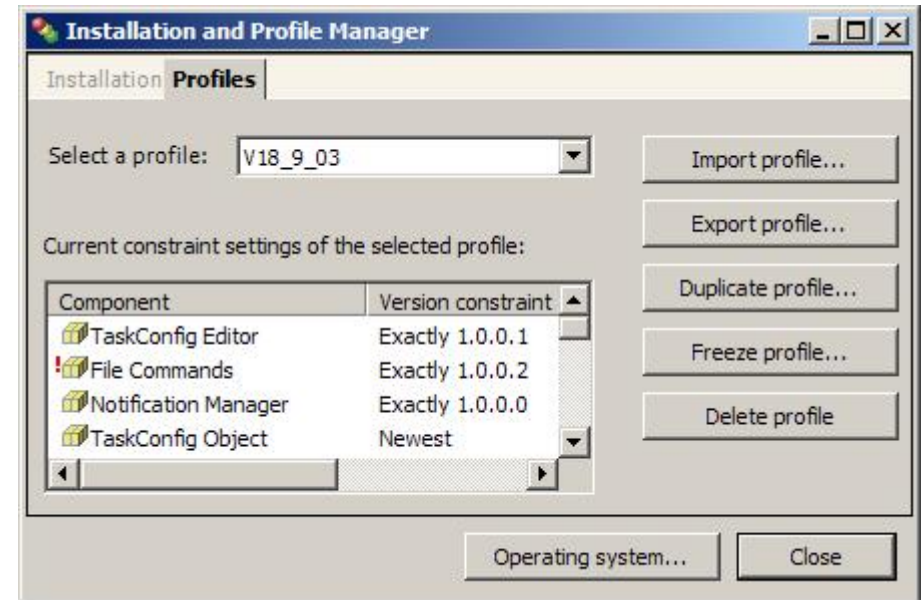
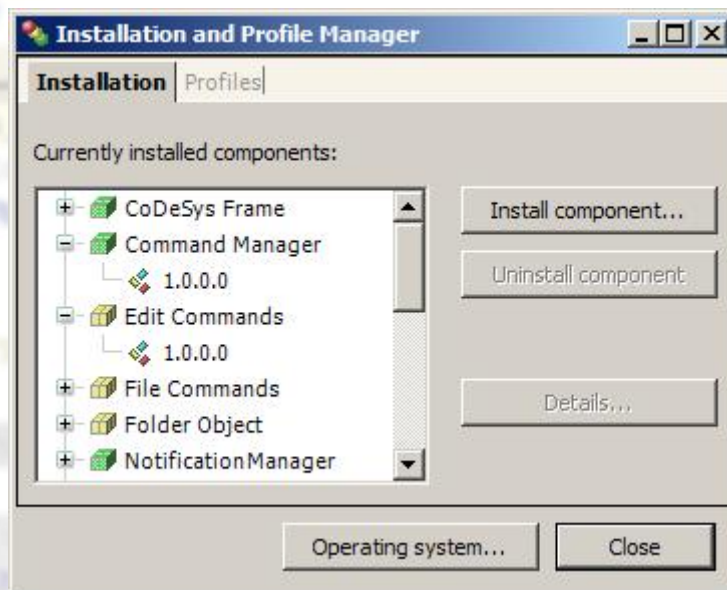


CoDeSys V3: Version Profiles

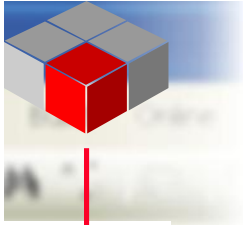
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CoDeSys V3: Version Profiles

CoDeSys V3 contains all available
versions and automatically programs
your PLC with the correct one.

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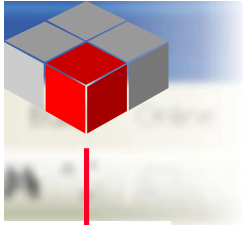
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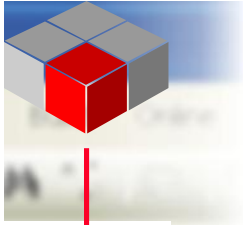
IEC 61131-3 Visualisation

Automation Platform



CoDeSys V3: IEC 61131-3 Visualisation

- § Visualisation based completely on IEC 61131-3 applications which generate drawing commands
- § Integrated editor for the generation of visualisation screens
- § Extension of the pool of drawing commands by means of the IEC 61131-3
- § Display of the screens on non-intelligent displays, on intelligent devices (control panels) and on the internet browser



CoDeSys V3: IEC 61131-3 Visualisation

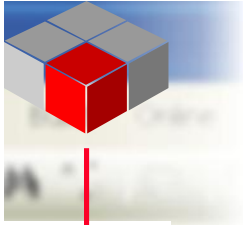
```
IF NOT EffectiveState.bInvisible THEN
  btnRect := VisuFctGetPaintRectFromRectangle(ADR(m_StaticPosition));

  DrawButton(btnRect, ButtonPressed, m_pCurrentClientData, pPaintBuffer);

  IF m_StaticTexts.stText <> '' THEN
    IF ButtonPressed THEN
      FOR i := 0 TO 3 DO
        btnRect.m_Points[i].iX := btnRect.m_Points[i].iX + 1;
        btnRect.m_Points[i].iY := btnRect.m_Points[i].iY + 1;
      END_FOR
    END_IF
    m_pCurrentClientData^.GlobalData.DrawingContext.DrawText(btnRect, Visu
    m_StaticTexts.stText, VisuDummyTextProperties.Alignment,
  END_IF
END_IF
```

IEC 61131-3 code generates
visualisation element:





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CoDeSys V3: IEC 61131-3 Visualisation

CoDeSys V3 offers an integrated
**visualisation editor, which can be
extended by selfdefined elements,
as well as visualisation clients
for all platforms**

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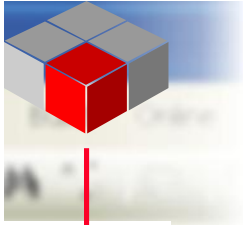
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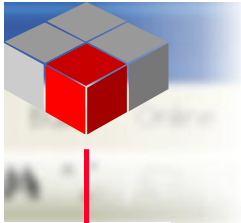
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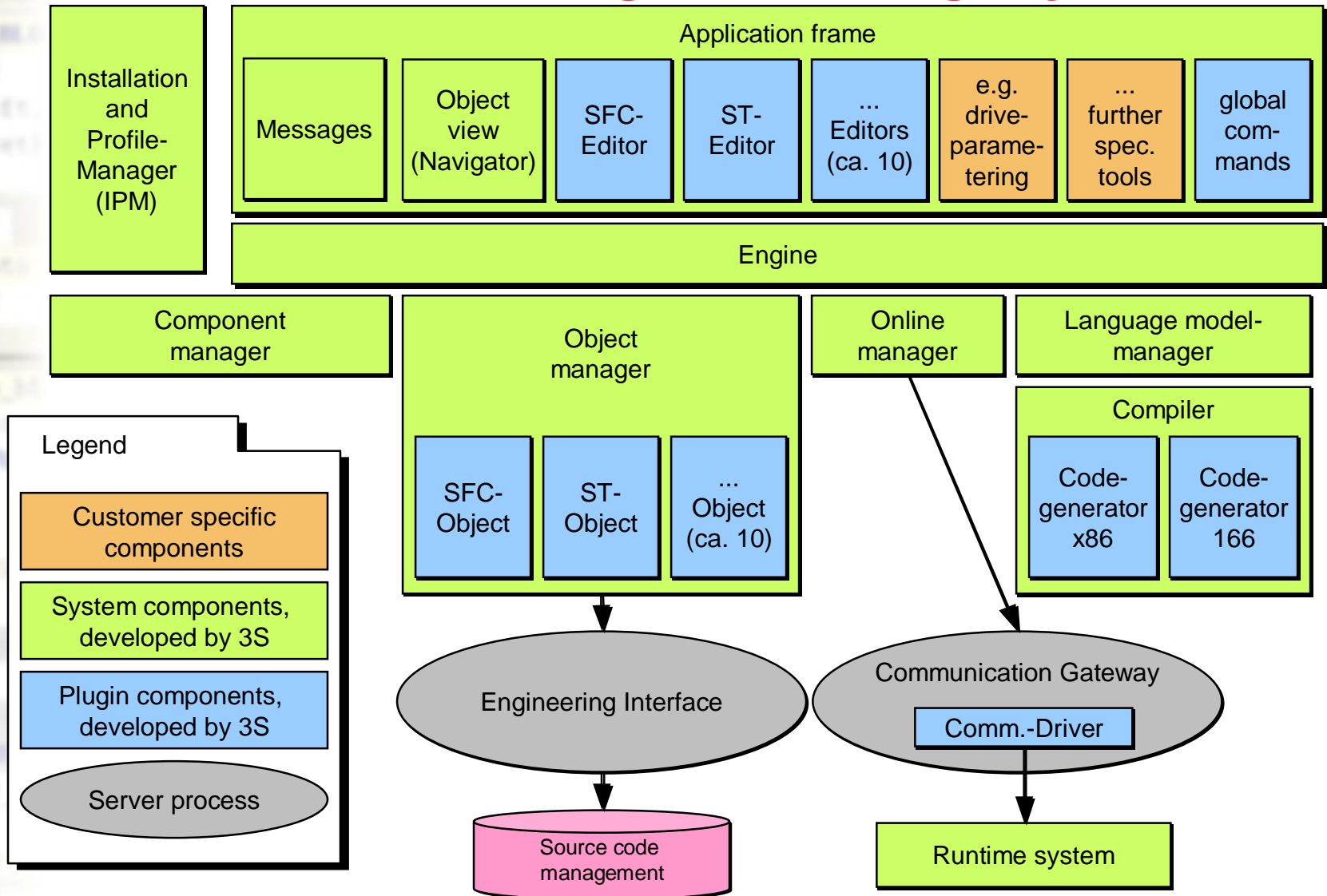
CoDeSys V3: Automation Platform

- § Customer specific plug-ins
- § Customer specific adaptations
- § Local extensions are not strictly bound to the development cycles of the complete system

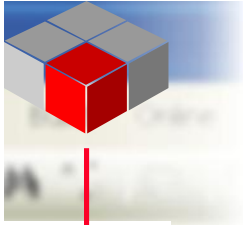


CoDeSys V3: Automation Platform (programming system)

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CoDeSys V3: Automation Platform

The **CoDeSys V3** technology is not only a PLC programming system.

CoDeSys V3 is a complete automation platform which can also be used to create customer specific software systems for programming and configuring field devices.

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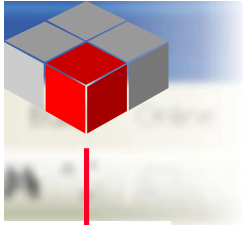
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Improved Editing assistance

- § AutoDeclare with type identification
- § Cool IntelliSense
- § Blocks and brackets belonging together are shown
- § Syntax errors already shown during editing
- § Block marking

Navigator

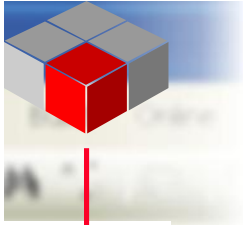
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- § Integration of external files (WORD, Excel)
- § Different sorting options
- § Multi selection



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New Language Features

- § Initialization with all kinds of expressions
- § VAR_TEMP, VAR_STAT
- § Union
- § L<int>, WSTRING
- § Single line comment
- § CONTINUE

Pragmas

§ Conditional compile, depending on

- Defines
- Attributes
- Defined variables / POUs
- Variable types



FBD/LD

§ Alternative views

- Straight connections
- with address
- with comment
- with symbol comment

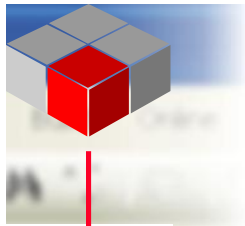
§ Switch between FBD/LD

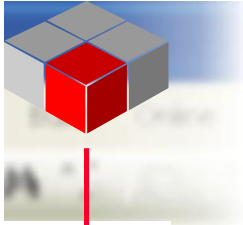
§ Inputs and outputs with edge detection

§ Outcommenting of networks

§ Connection to all outputs possible

§ Split connections





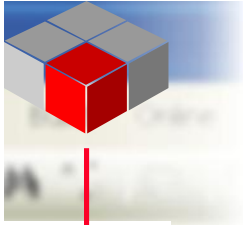
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and much more!

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Thank you for your attention!

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