Features & Improvements
CODESYS V3.5 SP12
Agenda

1. Runtime
2. Engineering
3. Visualization
4. Motion
5. Fieldbus
Overview

- MultiCore support (beta version)
- Improved device user management
- OPC UA: Support of events
- General improvements
MultiCore support

- Beta version of MultiCore support for CODESYS Control Win
- Consistent read / write of 64Bit data types
- New MultiCore-specific target settings
- New PLC shell command “getmulticoreinfo”
- Extended task configuration
  - Configuration of task groups with defined core distribution
- Display of variable usage in different tasks
- New operator for problems through memory reordering: __MemoryBarrier()
Improved device user management

- New device editor for configuration of access rights
- New password and security options
  - Change of password at next login
  - No change of password by user
- Restriction of login trials
Improved device user management

- Improved pre-defined user groups and roles
- Enforcement of device user management by runtime component SecurityManager
- Separate runtime components for user authorization and authentication
  - Possible connection to external user management
OPC UA: Support of events

- Creating of OPC UA events within alarm configuration
- Triggering of events via IEC code
- Monitoring of events with the OPC UA client “UaExpert”
General improvements

- Conversion of UTF-8 / UTF-16 data types
- Configuration of PLC shell commands
- New interface for current heap consumption
- Interface to support get/set additional ethernet adapter information
General improvements

- New interface for creation of events which cannot be registered from IEC applications
- Possibility to copy whole directories (CAA File)

- Hilscher CIFX support: possibility to select a different firmware dependent on the device version
General improvements

- **PLCHandler**
  - API method for changing PLC's node name
  - Support of Unicode node names
Overview

- Usage statistics
- Function block memory
- CODESYS Memory Tools
- General improvements
Usage statistics

- Collection of anonymous usage analysis data

- Analysis data
  - Installation ID
  - CODESYS information: profile name, plug-in information, package information, 32 Bit / 64 Bit version
  - Language information: language of UI and online help
  - Processor information: type and core count
  - OS information: version, 32 Bit / 64 Bit
  - Size of physical memory
  - Monitor information: number, total resolution, resolution of primary monitor, scaling
  - Time stamp for first and last usage
Function block memory

- Possible extension of function block memory

- Usage of additional memory for online change data

- Improved online change performance i.e. for add or delete function block variables
CODESYS Memory Tools

- New graphical view for display of memory allocation in areas

- Available in CODESYS Store
Features & Improvements V3.5 SP12

General improvements

- Improved project compare
  - Opening of multiple comparison windows at the same time
  - Explicit commit of changes
  - Usage for pending changes view in upcoming release of CODESYS SVN
- Improved refactoring
- Improvements in web-based online help
- Distinction into local and global search
- Compile
  - Support of „Set next statement“ for ARM, THUMB2, PPC, SH and x64
  - Undefine of compiler defines from device descriptions
  - New compiler defines for library development
Overview

- New visualization element: XY-plot
- General improvements
New visualization element: XY-plot

Graphical display of values from a numeric array in a cartesian X-Y diagram

- ARRAY [0..500] OF POINT
- ARRAY [0..500, 0..1] OF REAL
- ARRAY [0..200] OF FB
General improvements

- Support of dynamic scaling for meter, bar display, potentiometer, histogramm and slider

- Optimization of alarm and trend storage
  - Update to latest version of SQLite
  - Longer retention of data in memory for display of trend
  - Performance optimization

- Alarm improvements
  - Alarm banner: switching between most important alarms
  - Triggering of multiple alarms in one cycle
General improvements

- Touch scrolling
  - Support of touch scrolling for alarm table
  - Control optimization for existing elements

- File transfer
  - Possibility to transfer file with original name
  - Request to overwrite already existing files

- CODESYS HMI
  - Reduction of generated code size
  - Application example available in CODESYS Store

- Automatic adjustment of font size for large texts

- Use of format %t for date and time input and output

- Dynamic image alignment
Overview

**General improvements:**

- Robotic
- CNC
- New drive drivers
General improvements

- CODESYS SoftMotion Releases since CODESYS V3.5 SP11
  - V4.2.2.0, V4.3.0.0 and V4.3.1.0

- Robotics
  - Jogging of axis groups in the product coordinate system (PCS) and tool coordinate system (TCS)
  - Support of orientation interpolation "Axis" for Scara and 6-axis kinematics

- CNC
  - Tool length compensation (G43)
  - Rotation and scaling of the coordinate system in the G code (G53 .. G56)
  - Full 3D tool radius compensation in general levels (G41, G42)

- New drive drivers
  - Bonfiglioli iBMD
  - Panasonic MINAS A6B (EtherCAT)
  - Stäubli robot uniVAL (EtherCAT)
Overview

General improvements:

- CANopen
- EtherCAT
- Sercos
- PROFINET
General improvements

- **CANopen Device**
  - Improvement of EDS export workflow
    - Separate buttons for „save only in EDS file“ and „install in device repository and update all affected devices in the project“

- **EtherCAT, Sercos**
  - Generation of own tasks for EtherCAT and Sercos stack
    - Generation of a new task as bus cycle task when adding a new bus system (analog PROFINET and EtherNet/IP)
    - No change of original behavior at update of the bus system
### General improvements

- **PROFINET Configurator**
  - Support of I&M function, date and description
    - Extension of scan dialog and storage of additional information in the device
  - Global communication settings
    - Central editor for all PROFINET devices, e.g. IP addresses
  - Improved alarm display
    - More information on alarms in the status page (e.g. cable break)
  - Additional input for the status of the IO data
  - Custom defaults for SendClock and Reduction
    - Simpler commissioning at cycle times > 1ms
  - Support of SendClock and RT-Class
    - Better detection of misconfiguration in Profinet devices
General improvements

- **PROFINET Controller**
  - Automatic configuration of the phase for easier commissioning of devices (load distribution)

- **PROFINET Device**
  - Support of IO Provider / Consumer States: additional IO channels for the device status

- **PROFINET Drivers**
  - Display of alarms in logger
  - Diagnosis outputs: additional outputs in FB instance for better diagnostics

- **Profinet Device (CIFX)**
  - Update to Firmware V3.12.x.x
  - Additional information (status page) to avoid mismatch of projected and online configuration data
Thank you for your attention.