

EtherCAT® Workbench - Release Notes

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Revision history

Listed below are the improvements, changes and fixes between different releases of the [EtherCAT Workbench](#) in reverse chronological order.

Version 1.5.0

Release date: 2024-11-18

New features

- Support for SCI (SubDevice Configuration Information) files defined in ETG.2000 since V1.0.13 which allow to specify use-case specific device descriptions, containing a complete configuration:
 - Import of SCI files via new menu "Files/Copy SCI files to SubDevice library" or Drag'n'Drop.
 - Export of current SubDevice configuration as SCI file via SubDevice context menu.
 - Filter option in the *Device Cache* dialog to show / hide SCI files.
 - Dialog *Change Revision* also shows available SCI files for this device.
- Support to export an uploaded online CoE dictionary as offline CoE dictionary in ESI format with "Export" button on "SubDevice->CoE Dictionary" view.
- Support for *ADS over EtherCAT* (AoE) mailbox protocol.
 - Transmit/Receive AoE commands in "SubDevice->Mailbox->AoE" view.
- Support for *Vendor specific profile over EtherCAT* (VoE) mailbox protocol.
 - Transmit/Receive VoE commands in "SubDevice->Mailbox->VoE" view.
- Support to cancel long-lasting modal tasks (e.g. reading the CoE dictionary).
- Support to configure the "Auto-Reinit" and "Auto-Restore" feature of the esd MDevice stack (requires V1.11.3) in the "SubDevice->General" view.
- Last SubDevice AL status now indicated in the the "SubDevice->General" view.
- Enhanced and extended the device specific dialog for CAN gateways (MDP 5000) to support CAN FD and especially the esd CAN-EtherCAT/2-FD gateway.
- SubDevices with erroneous SII (EEPROM) no longer fail the online bus scan but are created with internal dummy default SII data.
- New hotkey "Alt+C" to show MainDevice/SubDevice context menu.
- New menu "Tools/Reset all Windows settings" to reset all GUI configuration options to the factory defaults.
- New command line option "/nosplash" to suppress splash screen during startup.
- Support to create EEPROM data from online scan and to reset to default values after changes in "SubDevice->EEPROM" view as option of the "New" button.
- Support for long (> 31 bytes) PDOs according to ETG.1020 for the online SubDevice scan scan and the ENI export.
- ESD MainDevice specific configuration options are now exported with XML processing instructions in addition to proprietary keywords. If not required for backward compatibility (esd MDevice before V1.11.3), the export of the proprietary keywords can be disabled completely with the option "ENI conformity". These ENI files are also required for (ENI) XML schema validating MainDevices or tools.
- New parameter *XmlExportBOM* for global settings which controls the Byte Order Mark (BOM) behavior exporting ENI files in UTF-8 format.

Changes

- The EtherCAT medium access control method follows the master/slave principle. Although these terms are used to describe the relation between electronic devices, the EtherCAT Technology Group (ETG) decided to establish different terms to prevent that any person or organization is offended. For this reason starting with this release of the EtherCAT Workbench the user interface uses *MainDevice* or *MDevice* for "master" and *SubDevice* or *SubordinateDevice* for "slave". This change does not affect the names of scripting API functions to keep existing scripts backward compatible.
- Drastic performance improvement creating/updating the ESI/SCI device cache.
- Drastic performance improvement of bus online scan.
- Data type of string variables in "SubDevice->CoE Dictionary" view is now indicated as STRING(n) instead just STRING.
- Support for multiple EtherCAT Workbench instances.
- Improved startup with new splash screen.
- GUI configuration settings now stored separately in FormMain.xml and no longer together with other configuration parameters in Settings.xml.
- Several GUI improvements
 - Fixed size dialogs can no longer be minimized/maximized.
 - Reduction of graphics flicker.
 - More help information.
- Updated/Enhanced database for interpretation of ESC register values in "SubDevice->Memory" view.

Fixes

- Several bugfixes and improvements affecting usability and robustness.

Component Updates

- EtherCAT MainDevice stack V1.11.3 for Windows with
 - Zlib library V1.3.1
 - Expat library V2.6.3
- Remote Interface V1.7.0
 - Support for AoE/VoE protocol
 - Several fixes to improve robustness.
- Scripting update to [IronPython](#) V2.7.12
- .NET Framework 4.8 (.NET Framework 2 is no longer supported)

Version 1.4.3

Release date: 2021-12-17

New features

- One step configuration option to support (ENI) configurations for EtherCAT cable redundancy mode via new "Apply redundancy configuration" combo box on Master->General Tab).
- General scripting function: ApplyRedundancyConfiguration().
- Support for selection of multiple CoE initialization commands in "Slave->Mailbox->CoE" for context menu operations (Delete, Copy, ...).
- Original "Process data variable name" added to monitor window.

Fixes

- General bugfixes and improvements

Component Updates

- N/A

Version 1.4.2

Release date: 2021-09-11

New features

- Startup of the EtherCAT Workbench without elevated privileges, elevation only for local MainDevice service start
- ETG.5001 Modular Device Profile support with modules/slots
- DC-settings from EEPROM
- Cyclic data update option for "Process Data/Image" and SubDevice "CoE Dictionary"
- "colored" filter for CoE dictionary entries
- Scan online net options in global settings (Standard = like before, Manual and Always)
- CoE Tool under Slave "Device Specific" tab
- New menu under "Tools" to copy a folder to the SubDevice library
- General scripting functions: GetSelectedSlaveAddr
- CoE scripting functions: SlaveCoEInitCmdRemoveAll, CoEDictionaryRecreateFromESI, CoEPDORecreateFromESI, CoEPDORecreateFromEEPROM
- DC scripting functions: DCRecreateFromESI, DCRecreateFromEEPROM, DCRecreateEmpty
- MDP script functions: MslGetSlots, MslListAllModules, MslListModules, MslGetSlotAssignment, MslSetSlotAssignment, MslClearSlotAssignment, MslAssignModule, MslUnAssignModule, MslGetModuleSetNames, MslGetModuleSet, MslRequestSlotAssignment
- Example script "ModulesSlotsDC.py"
- Show slot number for CoE dictionary objects
- Data types according to ETG.1020 (base data types)
- CoE/SDO Read/Write extended to data length 4096 (from 1024)
- Added support for SI/SO/SP flags of FSoE related objects

Fixes

- Export of Config/Slave/ProcessData/"Pdo-Type"/Sm sometimes missing
- EEPROM size calculation fixed
- Import CoE Access Read/WriteRestrictions fixed
- Scanned SubDevice: don't generate init commands for default values of WatchdogMultiplier, WatchdogPdiValue and WatchdogSmValue
- ENI export: VendorId, ProductCode, RevisionNo, SerialNo as "uint" instead of "int"
- Exit the EtherCAT Workbench after the last finished script when running as hidden
- General bugfixes and improvements

Component Updates

- N/A

Version 1.4.1

Release date: 2020-01-08

New features

- ESD ESI files are pre-installed in repository.
- Improved handling of device cache

Fixes

- Fixed EtherCAT Workbench binaries not signed with new EV publisher certificate.
- Fixed crash processing <Dictionary/DictionaryFile> key in ESI files if device cache was enabled.
- Fixed crash parsing <Dictionary/Objects/Flags/Attribute> key in ESI files.

Component Updates

- N/A

Version 1.4.0

Release date: 2019-12-20

New features

- Added support to distribute PDOs of a single SubDevice which exceed 1486 bytes on consecutive Ethernet frames (EtherCAT commands).
- Added support to indicate MainDevice *Link Level Driver Framework* support in *Master Info* dialog.
- Added *MinSize*, *MaxSize* and *DefaultSize* member to mailbox classes Send/Recv.
- Added support for *IdentificationAdo* bit.
- Added support to create an offline CoE object dictionary derived from a separate file referenced inside the ESI.
- Device cache for SubDevice library speeded up
- GUI: Splash dialog, minor design modifications and improvements in user guidance
- GUI: Add SubDevice dialog with detailed info area (revision, ports, FMMU, SM, mailbox, SDO, PDO, DC)
- GUI: Change SubDevice revision dialog
- GUI: Indication of cable redundancy in the topology view as redundant adapter
- Scripting: No interactive scan dialog when running scripts
- Scripting: New "eewHelper" modal dialogs (WorkbenchMessageBox, WbMBoxConfirm, WbMBox)
- Scripting: New "eew" methods: VarGetList, CoEGetObjectName, AppendRx/TxPDO
- Scripting: New samples: "GetVariableList", "Append PDO", "Python Std Lib Usage"

Fixes

- Fixed wrong WKC for PDOs distributed on consecutive Ethernet frames if process variable definition leads to LRW commands where data is only read or written.
- Install and run under .NET 4 (without .NET 2 / 3.5)
- Preserve SubDevice names on scan and merge with existing project.
- "Reset all windows settings" retains configured user password.
- Fixed crash for SII/EEPROM DC category with more than one entry.

Component Updates

- EtherCAT MainDevice V1.10.2 for Windows with
 - Zlib library V1.2.8.
 - Expat library V2.1.0.

Version 1.3.4

Release date: 2016-07-29

New features

- Added compatibility to .NET 4 framework and show .NET framework in use in *About* dialog.
- Added properties to modify *MboxDataLinkLayer*, *IdentALSts* and *IdentPhyM* flag located @ offset 0x0B in the category *General* according to ETG.2010.
- Added support to edit *DC category* of SII/EEPROM data.
- Added *Fast Hot Connect* type as port type.
- Added missing support for *ExplicitDeviceID* mechanisms in SII category 'General'.
- Added support to choose between 32- and 64-bit DC timestamp distribution.

Fixes

- N/A

Component Updates

- EtherCAT MainDevice V1.9.6
 - Zlib library V1.2.8.
 - Expat library V2.1.0.

Version 1.3.3

Release date: 2014-08-08

New features

- Workbench Scripting
 - Added method *SlaveCoEInitCmdAdd()* to add CoE init Cmds to SubDevice
 - Added *AddBeckhoffSlave()* to add Beckhoff® SubDevices by their name (e.g. "EK1100-0000-0017") instead of product code and revision number.
 - *SetSlaveProperty()* enhanced by properties: "PDOContent" and "SupportsCompleteAccess"
 - New methods *AddedSetWorkbenchExitCode()*, *SetWorkbenchCloseOnScriptEnd()* and *GetWorkbenchCmdLine()*
- Minor enhancements
 - Project GUID to avoid using different projects when connecting to MainDevice in monitoring mode now relaxed
 - If the local EtherCAT MainDevice service is unchecked during installation, the System does not ask for / require admin privileges at Workbench startup anymore

Fixes

- Issues with certain digital I/O Modules
 - 1-byte-SMs were assumed to be in 3-buffer-mode / single FMMU handling multiple adjacent SMs wasn't recognized

Component Updates

- EtherCAT MainDevice V1.9.1
 - Zlib library V1.2.8.
 - Expat library V2.1.0.

Version 1.3.2

Release date: 2014-08-08

New features

- Support for esd EtherCAT MainDevice's new monitor mode
 - In that mode the MainDevice runs independently from Workbench by its own application
- Output variables can now be monitored, too
 - Output variables are read from MainDevice's process image, just as inputs
- Minor enhancements
 - Added option to send process data commands for a SubDevice only in Op and not in SafeOp.
 - Variables for EtherCAT bridge can now be created automatically according to a given image size.
 - Added support for addressing SubDevices by alias/fixed address only.
 - *Switch Port* is now the default EoE mode for EoE SubDevices without ESI file.
 - DC Diagnostic tab to create variable monitors for deviation can now handle multiple SubDevices.
 - Scripting's *AddSlave()* now supports `null/None` also for previous port, to automatically select a suitable previous SubDevice.
 - Supporting esd EtherCAT MainDevices with password protected connection.
 - Minor updates to variable monitor window: Statistics button, Min/Max selectable by mouse.
 - Several MainDevice settings are now verified when going to free run, to warn if something differs from configured/expected setting.
 - SubDevice images: If no image exists parent (group/vendor) image now used.
 - Included MainDevice's server socket can now be bound to a specific IP address.

Fixes

- Offline CoE dictionary creation failed if items with MaxData/MinData element exist.

Component Updates

- EtherCAT MainDevice V1.9.0
 - Zlib library V1.2.3.
 - Expat library V2.0.1.
- Remote Interface V1.6.0

Version 1.3.0

Release date: 2014-03-04

New features

- SoE support added
 - Servo drive profile support: Complete online dictionary and init command support for AT/MDT lists, similar to CoE
- Support for "Hot Connect Groups"
 - To define groups of SubDevices that may be connected/disconnected any time (currently only for export to ENI, not yet supported by included MainDevice)
- Support for "Sync Units"
 - By assigning SubDevices to sync units it's possible to define which SubDevices' process data is handled by the same EtherCAT command
- Minor enhancements
 - Forms now correctly scaled where Windows DPI setting was increased.
 - IP addresses of some remote esd MainDevices can now be discovered automatically.
 - Topology View enhanced / now also shows some ESC error counter.
 - Messages log flickering reduced.
 - Keeping temporary history of entered MainDevice IP addresses.
 - EtherCAT Bridge page allows to clone variables from other SubDevices.
 - SubDevice EEPROM data "Comparison" menu. Some more scripting functions.
 - ENI export now automatically saves Workbench project file there too.

Fixes

- Few SubDevices could not be scanned
 - Where link bit in DL Status register was not set as expected
- Setup failed to update some existing installations
 - Uninstalling these versions first is now mandatory

Component Updates

- EtherCAT MainDevice V1.8.0
 - Zlib library V1.2.3.
 - Expat library V2.0.1.
- Remote Interface V1.4.1

Version 1.2.1

Release date: 2013-05-30

New features

- Added FoE support
 - See new page "FoE" in Slave's mailbox tab

Fixes

- Removed item limitation when creating CoE dictionary from online data

Component Updates

- EtherCAT MainDevice V1.6.0
 - Zlib library V1.2.3.
 - Expat library V2.0.1.
- Remote Interface V1.4.0

Version 1.2.0

Release date: 2013-03-22

New features

- Process image layout more configurable
 - "Packed" layout (i.e. without gaps for Ethernet frame / command headers) now possible
- Slave2Slave Communication
 - SubDevice input variables/PDOs can now be mapped to SubDevice output variables/PDOs (The MainDevice performs the copy operation, see in ETG.2100 specification)
- Custom cyclic commands
 - Added convenient editor to add own cyclic EtherCAT commands
- EtherCAT Bridge Devices
 - Added device specific tabs for EtherCAT Bridge devices (e.g. esd [ECX-EC](#))
- Distributed Clocks
 - Topology form now shows some DC items (Deviation, Delay and Time)
 - Added DC diagnostics tab that allows to setup SubDevices DC sync units manually
- Minor enhancements
 - CoE init. commands can now be cloned to other SubDevices
 - ESI EEPROM data creation can now use items from .xml ESI
 - Other minor changes to usability/GUI etc.

Fixes

- Minor bugfixes and performance improvements

Component Updates

- EtherCAT MainDevice V1.5.0
 - Zlib library V1.2.3.
 - Expat library V2.0.1.
- Remote Interface V1.3.1

Version 1.1.1

Release date: 2012-07-16

New features

- Custom EtherCAT Frames
 - For diagnostic purposes it's now possible to send any EtherCAT frame with the Workbench
- Minor changes
 - MainDevice info now also show version number of remoting interface
 - SubDevice EEPROM details list slightly enhanced EoE

Fixes

- EEPROM Writing
 - EEPROM write access in Workbench V1.1.0 was incorrect

Component Updates

- EtherCAT MainDevice V1.4.8
 - Zlib library V1.2.3.
 - Expat library V2.0.1.
- Remote Interface V1.3.0

Version 1.1.0

Release date: 2012-06-12

New features

- EoE
 - Added *Virtual Port* (The MainDevice forwards frames between EtherCAT and local virtual network interface)
- CoE variables
 - The variable editor now has basic support for Unicode strings
- Scripting support
 - The EtherCAT Workbench GUI is now scriptable via [IronPython](#) V2.6.2
 - Current main features:
 - Going online/offline/free run etc.
 - Reading/writing process variables
 - Reading/writing CoE objects
 - Reading/writing complete SubDevice EEPROMs
 - Adding custom buttons to the Workbench GUI
- MDP specific pages
 - Profile No. 5000, "CAN Interface" (Set/get baud rate, send/receive CAN frames via CoE dictionary if supported by device, etc.)
- Adjustable delay for EEPROM write access
- Some SubDevice EEPROMs failed to be written without increased delay

Fixes

- Editing CoE variables with custom length
 - The variable editor is now able to handle PDOs with flag "Fixed"
 - Now correctly excluded when downloading PDO configs
- Mailbox SM size
 - Mixed size calculation error when mailbox settings are changed
- Minor bugfixes and performance improvements

Component Updates

- EtherCAT MainDevice V1.4.7
 - Zlib library V1.2.3.
 - Expat library V2.0.1.
- Remote Interface V1.2.0

Version 1.0.1

Release date: 2011-08-23

New features

- Added alias address editor
- Allows to edit alias addresses for all SubDevices at once
- Added PDO configuration editors
- Allows to add/remove or change contents of PDOs manually
- New options
- SubDevice Init Commands: "PreOp retries" -> Affects ENI: "Retries" value for commands to change state to PreOp
- MainDevice: "Max acyclic frames" - Max. No. of acyclic frames the MainDevice will send in each cycle

Fixes

- SubDevice process data / PDO assignment
 - Wrong SM size was calculated when PD objects were recreated from ESI multiple times
 - Upload of PD objects ("Online by SDO info service") now also includes current assignment
 - Minor bugfixes and performance improvements

Component Updates

- EtherCAT MainDevice V1.4.2
 - Zlib library V1.2.3.
 - Expat library V2.0.1.
- Remote Interface V1.1.0

Version 1.0.0

Release date: 2011-05-19

New features

- Initial release