acontis technologies GmbH

SOFTWARE

EC-Simulator

Release Notes

V3.3.2.01

AT3500 **Edition: July 23, 2026**

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1 New Features

1.1 V3.3

- Update to expat V2.6.4
- Simplified clean IoCtl interface
- Application variables can be mapped to “ENI/Process variables”, now (conversions are possible via callbacks)
- New Ethernet real-time driver XDP and DPDK
- Update RtaccWin V1.0.9
- Update atemsys V1.4.32

2 Migration

2.1 From V3.2

- EC_T_LINK_PARMS_SIMULATOR (dwBusCycleTimeUsec has been removed and completely replace with dwBusCycleTimeNsec)

2.1.1 EC-RtEth Real-Time Ethernet Drivers

- Rename EC_T_LINK_PARMS_EOM::abyIpAddress to abyTargetIpAddress
- Rename EC_T_LINK_PARMS_EOM::abyDstMac to abyTargetMac
- Add EC_T_LINK_PARMS_EOM::eNetworkMode
- Add EC_T_LINK_PARMS_SOCKXDP::eXdpMode
- Remove Dongle licensing via Microchip ATSHA204A for emllGEM (32Bit)

2.1.2 RAS

- Rename EcRasServer.h to EcSimulatorRasServer.h
- Rename EcRasClient.h to EcSimulatorRasClient.h
- Rename ECMASTERRAS_T_CONNOTIFYDESC to EC_T_RAS_CONNOTIFYDESC
- Rename ECMASTERRAS_T_REGNOTIFYDESC to EC_T_RAS_REGNOTIFYDESC
- Rename ECMASTERRAS_T_MARSHALERRORDESC to EC_T_RAS_MARSHALERRORDESC
- Rename ECMASTERRAS_T_NONOTIFYMEMORYDESC to EC_T_RAS_NONOTIFYMEMORYDESC
- Rename ECMASTERRAS_NOTIFY… to EC_RAS_NOTIFY… .
- Rename ECMASTERRAS_ACCESS_LEVEL… to EC_RAS_ACCESS_LEVEL…
- Add EC_T_MBX_GATEWAY_SRV_PARMS::dwStackSize

2.1.3 EC_IOCTL...

- Refactor esIoControl() to esIoCtl(). EC_T_IOCTLPARMS removed as all parameters are passed as flattened parameters to esIoCtl().

2.1.4 EC_LINKIOCTL...

- Refactor EcLinkIoCtl(). EC_T_LINK_IOCTLPARMS removed as all parameters are passed directly to EcLinkIoCtl.
- Rename EC_LINKIOCTL_PROMISCOUSMODE to EC_LINKIOCTL_PROMISCUOUSMODE
- Change EC_LINKIOCTL_INTERRUPTENABLE: not the pbyInBuf itself is interpreted/evaluated, but the buffer that is pointed to (… == *((EC_T_BOOL)*pbyInBuf)). Affected Ethernet real-time drivers are: emllCCAT, emllCPSW, emllEG20T, emllETSEC, emllGEM, emllI8254x, emllIntelGbe, emllL9218i, emllLAN743x, emllRTL8139, emllRTL8169.
- Change EC_LINKIOCTL_PROMISCUOUSMODE: not the pbyInBuf itself is interpreted/evaluated, but the buffer that is pointed to (… == *((EC_T_BOOL)*pbyInBuf)). Affected Ethernet real-time drivers are: emllCCAT, emllETSEC, emllI8254x, emllIntelGbe, emllL9218i, emllRTL8139.

- Change EC_LINKIOCTL_GETLINKMODE: not the pbyOutBuf itself is written, but the buffer that is pointed to (((*EC_T_LINKMODE*)(pParms->pbyOutBuf)) = …). Affected Ethernet real-time drivers are: emllBPF, emllBcmNetXtreme, emllCCAT, emllEG20T, emllETSEC, emllGEM, emllI8254x, emllIntelGbe, emllL9218i, emllLAN743x, emllRTL8139, emllRTL8169.
- Change EC_LINKIOCTL_FORCELINKMODE: not the pbyInBuf itself is interpreted/evaluated, but the buffer that is pointed to (… == ((*EC_T_DWORD*)pParms->pbyInBuf)). Affected Ethernet real-time drivers are: emllI8254x, emllIntelGbe.
- All Real-Time Ethernet Driver set pdwNumOutData in EC_LINKIOCTL… set the amount of bytes actually written to pbyOutBuf if pdwNumOutData provided by application.
- Add some missing input parameters checks in Real-Time Ethernet Driver for some EC_LINKIOCTL… .

2.1.5 Custom Ethernet real-time drivers

- Refactor PF_EcLinkIoctl pfEcLinkIoctl to PF_EcLinkIoCtl pfEcLinkIoCtl (upper case changed from “Ioctl” to “IoCtl”) with the corresponding flattened parameters.
- All EC_LINKIOCTL… must set the amount of bytes actually written to pbyOutBuf if pdwNumOutData provided by caller.

2.1.6 Renamed structs

EC_CMD_TYPE is renamed to EC_T_CMD and also consequently used on the API instead of EC_T_BYTE. The enum values EC_CMD_TYPE_X are renamed to eCmd_X.

2.1.7 Binary incompatible structs

The following struct types are not binary compatible with previous versions:

- EC_T_CYC_COPY_INFO
- EC_T_SIMULATOR_INIT_PARMS (dwBusCycleTimeUsec has been removed and completely replace with dwBusCycleTimeNsec)

2.1.8 Preprocessor macros and defines

The following deprecated preprocessor macros got removed

- #define FILTVAL 128
- #define OLD_WEIGHT (FILTVAL-1)
- #define ROUNDINGVAL (FILTVAL/2)
- #define AVG_MULT (FILTVAL/8))

2.1.9 OS Layer

- Linux binaries are now compiled with GCC7 the runtime system must provide the appropriate runtime library versions (e.g. Ubuntu 18.04 or higher)
- Rename SafeOs[Free|DeleteEvent|DeleteLock] to OsSafe[Free|DeleteEvent|DeleteLock]
- Remove OsForceThreadPrioNormal use OsCreateThread with desired thread priority or OsSetThreadPriority instead

- Rename and seperation of concerns using preprocessor definitions from “EC_VERSION_[LINUX|WINDOWS|…]” to “EC_OS == EC_OS_WINDOWS” (and/or “EC_OS_VERSION == [WINVER|_WIN32_WINNT|__GLIBC__|2|3|…]”)
- Remove GO32, RIN32, RTAI, RTXC, XMC
- Remove Windows DotNet2/EcWrapperDotNet.dll (use DotNet4 or DotNetStd instead)

2.1.10 Examples

- T_EC_DEMO_APP_PARMS (dwBusCycleTimeUsec has been removed and completely replace with dwBusCycleTimeNsec)

2.2 From V3.1

- Rename RAS client and server to EcSimulatorRasClient, EcSimulatorRasServer
- Replace emllI8254x with emllIntelGbe and support of TTS for Intel® i210 and i211
- Rename emPerfMeasInternal to emPerfMeas, old deprecated API removed

3 Enhancements/bug fixes

3.1 V3.3.2.01

Enhancement

- #6966 - Add support for command line flags to EC-Wrapper examples
- #6965 - Add support for EC-Motion to EcWrapperRust examples
- #6964 - Add support for multi-instance to EcWrapperRust examples
- #6963 - Remove unnecessary ref parameters from EC-Wrapper APIs
- #6938 - Add Task ID to CycFrameRxCallback
- #6918 - Add support for emllRemote to EC-Wrapper examples
- #6887 - Increase performance for cyclic frames matching ENI
- #6723 - Remove EcWrapperDotNet2
- #6619 - Remove ESC Register Shadow
- #6476 - Add FP Third Party MainDevice
- #6063 - Fix dependencies for EcMaster, EcSimulator and EcMonitor in EcText.cpp and EcLogging.cpp
- #6635 - Add eRspErr_MAC_FLOWCTL_FRAME to EC_NOTIFY_FRAME_RESPONSE_ERROR for MAC flow control frames with Opcode pause
- #6699 - Replace T_EC_DEMO_APP_PARMS::dwBusCycleTimeUsec with dwBusCycleTimeNsec
- #6739 - Add support for interrupt mode for simulated firmware using AL Event Request (0x0220)

Fixes

- #6980 - Fix crash in ecwCoeGetEntryDesc() if name length exceeded
- #6979 - Fix missing debug flags for non-generated Rust enums
- #6958 - Set thread stack size to 8MB in EcWrapperRust examples
- #6957 - Fix performance measurement logging in EC-Wrapper examples
- #6956 - Fix support for arrays in EcWrapperRust (broken since V3.3.0.03)
- #6955 - Fix ecwPerfMeasApp…() in EC-Wrapper (broken since V3.3.0.03)
- #6954 - Fix crash in EC-Wrapper examples if started with “-sp” and without port number
- #6945 - Fix crash on unexpected child element below Mailbox/CoE in EXI
- #6764 - Fix INCLUDE_EMLL_… for Windows
- #6729 - Fix exception in “Start Simulator” in EcSimulatorHilDemoGuiDotNet (regression since V3.3.0.03)
- #6734 - Fix truncated data read of Configured address list Objects 0xF02n and Detected address list Objects 0xF04n in Master OD using complete access
- #6736 - Fix memory leak in examples using emllEom, emllMultiplier, emllVlan
- #6738 - Fix performance measurement not reset when no new values were sampled
- #6740 - Fix unterminated FoE upload filename when no file was downloaded before
- #6750 - Fix truncated strings due to using OsSafeStrncpy() / OsSafeStrncpy2() with nLen instead of nSize at some locations (broken since V3.3.0.02)
- #6754 - Accept SDO download with zero length

- #6797 - Fix DCM Bus Shift control limit reached for reference clock other than first DC slave

Platform

- #6977 - Add connect timeout detection to CEcSocketIp
- #6940 - Add connect timeout to emllRemote
- #6920 - Move bStartTimingTask to DN_EC_T_INIT_PARMS_MASTER in EC-Wrapper
- #6888 - Update atemsys V1.4.39
  - Add PHY management for PCI devices described in the device tree (atemsys_pci)
- #6862 - Add support for TI AM263 to emllTiEnetIcssg
- #6857 - Add ecwOptimizeProcessPerformance() to EC-Wrapper
- #6833 - Add support for Rust on Linux ARM 64Bit
- #6805 - Add emllFslEnetc
- #6800 - Add support for NVIDIA Jetson AGX Thor to emllDwXgmac
- #6783 - Remove ARMv4 and ARMv6 from Linux and Xenomai deliveries
- #6772 - Add support for TI AM64x/AM243x to Fingerprint
- #6719 - Add EC_GETINT(), EC_SETINT() for ARM, PPC
- #6093 - Remove emllPcap for Windows
- #5487 - Remove EC_LINKIOCTL_SET_LINKMODE (duplicate of EC_LINKIOCTL_SETLINKMODE)
- #6064 - Include EcDemoTimingTaskPlatform.h through EcDemoApp.h
- #6393 - Add ATEMRAS_NOTIFY_EXCEPTION
- #6447 - Add support for Nvidia AGX Orin to emllDW3504
- #6448 - Add emllDwXgmac for Synopsis DesignWare Cores XGMAC
- #6570 - Add OsSetThreadAffinity() for RTX64
- #6636 - Add support for RTL8221D to Phylib
- #6712 - Add card specific buffer alignment to emllIntelGbe
- #6778 - Update atemsys V1.4.38
  - Fix support gpio phy reset device tree overlays
- #6873 - Add IOMMU support to emllDwXgmac
- #6936 - Fix invalid administrative Client ID in RAS Client after emConfigureNetwork()
- #6921 - Fix ThrowTranslateEvent() in EC-Wrapper Python
- #6919 - Fix jitter on FreeRTOS with TI AM243LP
- #6886 - Fix missing check if instance already opened in emllVlan (broken since V3.2.3.07/V3.3.1.01)
- #6819 - Add support for MSI interrupt on QNX
- #6798 - Fix poor timer resolution on Windows 11 due to process power throttling
- #6706 - Add support for PHY OS Driver to emllBcmGenet (ePHY_OSDRIVER)
- #6016 - Fix thread affinity parameter in OsSetThreadAffinity() on Linux and Xenomai
- #5960 - Fix gcc 13.3 compiler warnings
- #6174 - Increase stack size of RAS Server worker threads for SWIFT
- #6732 - Fix memory leak in CreateLinkParmsFromCmdLine…() with invalid parameters
- #6768 - Fix occasional lock-up in EcLinkRecvFrame() in emllRemote with Cable Redundancy

- #6894 - Fix missing initialization in EcLinkOpen() in emllMultiplier (broken since V3.2.3.07/V3.3.1.01)
- #6967 - Fix frame loss on Ti Am57x with emllIcss when using instance 1 and 3 or 2 and 4 simultaneously

3.2 V3.3.1.01

Enhancement

- #6701 - Replace EC_T_LINK_PARMS_SIMULATOR::dwBusCycleTimeUsec with dwBusCycleTimeNsec
- #6699 - Replace T_EC_DEMO_APP_PARMS::dwBusCycleTimeUsec with dwBusCycleTimeNsec
- #6690 - Remove obsolete performance measurement defines FILTVAL, OLD_WEIGHT, ROUNDINGVAL, AVG_MULT
- #6582 - Replace EC_T_SIMULATOR_INIT_PARMS::dwBusCycleTimeUsec with dwBusCycleTimeNsec
- #6339 - Unify optional command line parameters usage
- #6224 - Refactor EC_OS and EC_VERSION… macros
- #5859 - Add pAppContext parameter to EcSelectLinkLayer functions
- #5757 - Add esCoeGetEntryDesc(), esCoeGetObjectDesc(), esCoeGetODList()
- #6605 - Apply application parameters to linklayer parameters in SetAppParmsFromCommandLine() and SetAppParmsLogging() instead of main()
- #6614 - Add Nvidia Thor support to Fingerprint
- #6682 - Add emllIntelGbe for QNX71 ARM_64Bit

Fixes

- #6724 - Fix missing EcMemoryLog.h in packages (regression since V3.3.0.02)
- #6641 - Fix crash in SetAppParmsFromCommandLine() due to missing null pointer checks
- #6612 - Fix EcDemoPython duration
- #6157 - Always send as many bytes as possible in SDO info service
- #6602 - Fix Bus Scan performance issue caused by loop in loop in RefreshObjectDictionary()

Platform

- #6623 - Remove Dongle licensing via Microchip ATSHA204A for GEM 32Bit
- #6620 - Add support for Swift on Linux x86_64Bit
- #6563 - Add Microchip ATSHA204A support to Fingerprint
- #6540 - Update/Remove EC-Motion Demos
- #5235 - Add Software Bill of Materials (SBOM)
- #6064 - Include EcDemoTimingTaskPlatform.h through EcDemoApp.h
- #6393 - Add ATEMRAS_NOTIFY_EXCEPTION
- #6462 - Add support for Link Speed configuration to emllHpe
- #6507 - Update atemsys V1.4.37
  - Fix support for devices with up to 32 clocks to platform / Device Tree Ethernet driver
  - Add support gpio phy reset device tree overlays
  - Fix log level of verbose messages about PCI/PCIe device from INFO to DEBUG
- #6585 - Add i.MX95 support to emllDpdk
- #6591 - Add support for RTOS-32 to emllDW3504

- #6625 - Fix iq-9075 custom parameter in emllDW3504
- #6626 - Add device IDs for I219_V
- #6644 - Fix performance measurement on VxWorks ARM_64Bit
- #6647 - Add support for EC_T_LINK_PARMS_INTELGBE::linkParms.dwIstStackSize setting to emllIntel-Gbe in Interrupt Mode
- #6482 - Fix missing files in RAS SDK package (Examples\\Common\\…)
- #6684 - Fix crash with translation callback in EC-Wrapper (regression since V3.3.0.03)
- #6559 - Remove deprecated “-lang-c++” compiler flag from QNX build
- #6279 - Release libxdp and libbpf in EcLinkClose() in emllSockXdp
- #6495 - Fix erroneous RAS client disconnection with server <= V2.7 due to API timeout (broken since V3.2.2.01)
- #6542 - Fix missing error message on invalid LinkOpen() parameter
- #6633 - Fix MAC Protection for Rockchip RK3588
- #6648 - Add support for QNX8 to emllBpf
- #6659 - Fix send frame occasionally delayed in emllFslFec
- #6674 - Fix emllDW3504 resource leak causing systematic error on subsequent starts
- #6676 - Fix IRQ CPU affinity for Interrupt Mode on VxWorks
- #6680 - Fix missing adapter stop in EcLinkClose() of emllDW3504
- #6716 - Fix incremental cmake build for Linux due to EC_C_CXX_FLAGS recursion (regression since V3.3.0.02)
- #6718 - Fix crash in EcLinkOpen(…) in emllEom, emllRemote, emllSimulator, emllVlan due to name clash (S_apLinkDesc)

3.3 V3.3.0.03

Enhancement

- #6493 - Add emGetHcGroupInfo() and emGetHcGroupNumOf()
- #6349 - Add support for SwapData strings in ENI according to ETG.2100 V1.0.3
- #6056 - Add EC_NOTIFY_STATECHANGED
- #5764 - Add EC_E_VERSION_MISMATCH
- #5086 - Add FP FMI
- #4118 - Add FP FSoE
- #5444 - Add EcWrapperRust
- #6394 - Add date and time to frames from pcap recorder on Windows
- #6430 - Enable file logging specifically in CEcLogging
- #6453 - Refactor cmdline parser in EC-Wrapper examples
- #6512 - Add FP Real-time Accelerator for Windows x86_32Bit

Fixes

- #6578 - Fix EcSimulatorSilDemo pcap recorder (broken since V3.3.0.02)
- #6573 - Fix python demo freeze on error

- #6566 - Fix crash in esDeinitSimulator() if SSC Core not completely initialized
- #6368 - Fix non-expedited transfer using registered CoE object transfer handler for objects not in Object Dictionary
- #6442 - Fix object type ARRAY for empty PDO assign (0x1C12, 0x1C13)
- #6459 - Fix Object Entry Description for wBitLen = 0 (gaps)
- #6491 - Fix pthread linkage for shared object libraries containing EcOs.cpp for Linux
- #6527 - Fix OUTPUT Sync Manager synchronization in Mailbox Mode for simulated slaves with firmware

Platform

- #6554 - Add support for RISC-V to emllEom on Linux
- #6571 - Bump minimum CMake version to 3.14
- #6502 - Refactor MacOS workspaces to match generic structure
- #6303 - Add fingerprint support to emllLAN743x
- #5832 - Add ROS2 support
- #5576 - Add support for SSL/TLS to RAS
- #6184 - Update emllTiEnetIcssg to TI SDK11
- #6236 - Add support for Microchip PolarFire to emllGEM
- #6238 - Add support for emllTemac
- #6271 - Fix emllCPSWG performance issues on TI Jacinto TDA4VM
- #6301 - Add support for Rockchip RK3506, Allwinner T153 and T527 to emllDW3504
- #6428 - Update RtaccWin V1.1.1
- #6436 - Add Interrupt Mode for emllDW3504
- #6484 - Add emllVlan to Windows
- #6317 - Add support for Qualcomm IQ-9075 to emllDW3504
- #6550 - Fix crash in OsGetLinkLayerRegFunc(EC_T_CHAR* szDriverIdent, EC_NULL)
- #6488 - Remove faulty signature check in emllMultiplier EcLinkIoCtl() (regression since V3.3.0.01)
- #6036 - Add workaround for I210 Errata 25 (Slow System Clock) to emllIntelGbe on VxWorks7
- #6472 - Fix unexpected MAC address when using multiple instances of emllDW3504 simultaneously
- #6483 - Fix crash in emllVlan EcLinkRecvFrame() (regression since V3.2.2.04)
- #6534 - Fix emllDW3504 support for RK3576
- #6546 - Fix sending of frames longer than 768 bytes on emllCPSWG
- #6547 - Fix link reconnect with short cycle time for emllCPSWG

3.4 V3.3.0.02

Enhancement

- #6120 - Rename SafeOs[Free|DeleteEvent|DeleteLock] to OsSafe[Free|DeleteEvent|DeleteLock]
- #6013 - Add emGetProcessVarInfoEx() and emGetProcessVarInfoNumOf()
- #5969 - Generalize Windows project properties
- #5865 - Add emGetLicenseFingerprint()
- #5757 - Add emCoeGetEntryDesc(), emCoeGetObjectDesc(), emCoeGetODList()
- #5687 - Add emGetCfgSlaveSmInfo()
- #6152 - Add support for ENI with zero slaves
- #6205 - Add support for Fingerprint to SetLicenseKey()
- #6249 - Add date and time to frames from pcap recorder on Linux
- #6275 - Add esSetLogParms()

Fixes

- #6316 - Always use EC_T_MBXTFERDESC::dwMaxDataLen for mailbox uploads
- #5838 - Fix occasional crash on demo shutdown with pcap recorder enabled
- #6122 - Fix truncated lines in log file about skipped/dropped messages in examples
- #6143 - Fix crash in LWR handler if Process Data Image at Master exceeds Process Data Image at Simulator
- #6165 - Fix EC_T_LINK_PARMS::dwIstStackSize not used in emllRemote, emllTap
- #6171 - Fix PDO mapping related prints of object dictionary in examples
- #6201 - Fix crash in esGetProcessData() if Process Data Image disabled
- #6253 - Rename CPcapRecorder::InitInstance(…) to CPcapRecorder::StartPcapRecorder(…) (fix overloaded-virtual warning)

Platform

- #6379 - Remove OsForceThreadPrioNormal function and SetPriorityClass() calls from libraries
- #6123 - Add support for Renesas RZ/G2L to emllSHEth
- #5902 - Add connection token to RAS
- #5819 - Remove bpf dependency from emllSockXdp
- #5774 - Add emllHpe for INtime
- #5849 - Add support for AllWinner T536 to emllDW3504
- #5879 - Add support for iMX8 on uC3
- #6048 - Add ZEROCOPY Driver mode to emllSockXdp
- #6139 - Update RtaccWin V1.1.0
- #6144 - Add support for Intel Alder-Lake to emllDW3504
- #6153 - Add EC_LINKIOCTL_GET_INTELGBE_STATISTICS to emllIntelGbe
- #6156 - Add OsPlatformMemoryBarrier() for x86_64Bit and ARM_64Bit
- #6198 - Rename Xilinx GEM to Cadence GEM/MACB
- #6280 - Add support for Ti DP83869 to PhyLib
- #6282 - Add full scan of Mdio bus in PhyLib

- #6352 - Add RTL8126 support to emllRTL8169
- #6404 - Set calling convention for LinkLayerReg functions
- #6324 - Fix build errors with musl toolchain on Linux
- #6250 - Fix missing emSetSimSlaveState() in EcMasterRasClient
- #5960 - Fix gcc 13.3 compiler warnings
- #5791 - Fix card specific control access and configuration for I210-I350 in emllIntelGbe
- #6116 - Add bDisableForceBroadcast to emllHpe
- #6160 - Fix thread priority class setting in OsCreateThread() on Windows
- #6162 - Fix print performance histogram on console for FreeRTOS
- #6169 - Fix occasional wrong link status disconnected in emllETSEC
- #6192 - Fix project files for uC3 on iMX8
- #6239 - Reset adapter if RX or TX disabled on reconnection in emllRTL8169
- #6269 - Fix RtaccDevice driver eval version in protected Real-time Ethernet Driver packages
- #6281 - Fix SGMII support for all instances emllGEM
- #6305 - Add signature check for pvInstance parameter to EcLinkFreeSendFrame() in emllIntelGbe
- #6320 - Add bEalInitDeinitByApp to emllDpdk
- #6358 - Update atemsys V1.4.36
  - Fix PCI MSI interrupt broken since V1.4.35 for Kernel >= 6.0.00
- #6183 - Update atemsys V1.4.35
  - Add driver initialization entry point for Kernel >= 6.6.00
  - Fix Xenomai 3.3
  - Fix CPSWG for Kernel >= 6.12
  - Add RiscV support
  - Fix PCI IO memory resource management Kernel >= 6.0.00
- #6135 - Update atemsys V1.4.34
  - Fix for platform devices without 32-bit DMA
  - Add Device Tree Ethernet driver support for Raspberry Pi 5
  - Fix non-PCI IO Memory for PCI devices
- #6380 - Fix EC_NOTIFY_SB_EEPROM_ACCESS_DENIED is printing Unknown Text instead of the right notification text
- #6392 - Fix CEcMasterDotNet.Init() returns EC_E_NOTSUPPORTED after Init() and Deinit() called several times

3.5 V3.3.0.01

Enhancement

- #6002 - Add support for pcap recorder by default to EcMasterDemoDc on Windows
- #5690 - Rename libEcMaster.a, … to libEcMasterStatic.a on Linux, Xenomai, …
- #5062 - Add emLinkInputVarByName(),… to map ENI variables to local application variables
- #5480 - Add synchronization of process data update to cyclic frame
- #5678 - Call APPL_InputMapping() and APPL_OutputMapping() only once per cycle
- #5687 - Add emGetCfgSlaveSmInfo()
- #5846 - Add support for DC System Time Difference 0x092C, Bit 31
- #5870 - Add eCnfType_FileByApp to emConfigureNetwork()
- #5880 - Add Sync Manager Synchronous Mode
- #5911 - Add instance, mode to command line parameters for emllDpdk
- #5912 - Add T_EC_DEMO_APP_PARMS::dwJobsThreadPrio, dwJobsThreadStackSize
- #5927 - Add timing task support for SWIFT (Apple)
- #5928 - Add logging thread to EC-Wrapper
- #5949 - Report missing DLLs in EC-Wrapper
- #5950 - Add histogram export to EC-Wrapper examples
- #5997 - Add support for max mailbox size
- #6034 - Add EC_NOTIFY_EEPROM_OPERATION on EEPROM write

Fixes

- #6114 - Fix command line parameter “–connect” parsing for emllSimulator
- #5667 - Fix EC_T_SB_STATUS_NTFY_DESC, esGetCfgSlaveInfo() for EK1200, EL9011
- #5461 - Fix Object 0x2002, SubIndex 6 “Number of Mailbox slaves in Configuration” in Simulator Object Dictionary
- #5756 - Fix platform dependent performance regression (broken since V3.2.2.03)
- #5763 - Add support for random periodic frame loss simulation to esSetErrorGenerationAtSlavePort()
- #5781 - Call OsMeasCalibrate() only once within esInitSimulator()
- #5836 - Fix ESC port TX frame logging and error simulation
- #5858 - Change ESC DC CtlLimit reached log message severity from EC_LOG_LEVEL_ANY to EC_LOG_LEVEL_VERBOSE_CYC
- #5886 - Fix EC_TRUE and EC_FALSE macro comments
- #5888 - Fix APPL_InputMapping(), APPL_OutputMapping() not called if Master sends cyclic commands with different logical address
- #5892 - Fix frame error simulation for EC-Simulator SiL
- #5895 - Fix cycle time in DS402 simulation
- #5903 - Fix multiple port connection settings parsing from EXI
- #5915 - Fix ENI parser error handling
- #5916 - Fix crash on memory access at slave above 0xA000
- #5917 - Fix config slave list for ENI including EK1200

- #5918 - Fix EcSimulatorSilDemo compilation with CMake
- #5941 - Fix command line parameter "–rxbuffercnt" parsing for emllRemote
- #5999 - Fix configured PDO to SyncManager assignment
- #6007 - Fix memory leak if esExtendSlaveCoeObjectDictionary() called multiple times
- #6017 - Fix partially uninitialized data at esCoeSdoUpload() for object entry data length less than 8 bit
- #6019 - Fix ecwDeinitSimulator() was only called by DeinitInstance() in EC-Wrapper if RAS Server closed after Simulator
- #6035 - Fix crash in pcap recorder destructor if instance not previously deregistered
- #6054 - Fix lock-up in process frame while esDeinitSimulator() pending
- #6067 - Fix crash in EC-Wrapper examples for EC-Simulator HiL
- #6081 - Fix crash in esGetSlave(Inp|Outp)VarInfoNumOf(), esGetSlave(Inp|Outp)VarInfo[Ex](), esGetSlave(Inp|Outp)VarByObject[Ex]() if network not configured
- #6095 - Fix RAS server start failure handling in emllSimulator

Platform

- #6094 - Add version and port print to RasSrvStart()
- #6030 - Add support for cable redundancy to emllRemote
- #6026 - Add support for Raspberry Pi 5 to emllGEM
- #6004 - Add Signature and Size to EC_T_RAS_CLIENT_CONDESC
- #5965 - Update RtaccWin V1.0.9
- #5963 - Generate SHA for delivery packages
- #5931 - Add promiscuous mode setting to emllSockRaw ("–promiscuousmode")
- #5819 - Remove bpf dependency from emllSockXdp
- #5762 - Add bNoPhyAccess parameter to emllFslFec
- #5753 - Add default values for EC_T_RAS_CLIENT_CONDESC::dwCycleTime, dwWDTOLimit for emRasClntAddConnection()
- #5686 - Refactor EcRasClient.h, EcRasServer.h to EcMasterRasClient.h, EcMasterRasServer.h, EcMonitorRasServer.h, EcSimulatorRasClient.h, EcSimulatorRasServer.h
- #5306 - Fix support for MacOS
- #4564 - Add instance identification by PCI location for emllNdis
- #5020 - Add EcSimulatorHilDemoGuiDotNet
- #5408 - Add support for WAGO PFC200 and CC100 with Ethernet Switch Chip
- #5427 - Add support for ET2000 to emllMultiplier
- #5470 - Reduce timeout waiting for link connected in emllICSS
- #5659 - Add support for second port to emllCPSWG on Linux (Ti AM64x)
- #5747 - Add RAW mode to emllEom
- #5751 - Fix emllGem bNoPhyAccess
- #5769 - Add support for Xenomai4 ARM 64Bit
- #5809 - Add EC_OS_NAMESPACE
- #5889 - Add support for Intel X700 adapter family to emllDpdk
- #5901 - Add parameters for communication thread of RAS Client

- #5948 - Add armv7-vfp-eabihf to Linux ARM 32Bit
- #5964 - Add emllDpdk for Linux ARM 64Bit
- #5977 - Add support for RK3576 and RK3562 to emllDW3504
- #5993 - Add Wrapper DLLs to RAS for Windows
- #6048 - Add ZEROCOPY Driver mode to emllSockXdp
- #6077 - Add UDP Mailbox Gateway Server to EC-Wrapper
- #6036 - Add workaround for I210 Errata 25 (Slow System Clock) to emllIntelGbe on VxWorks7
- #5979 - Fix resource leak in EoE Endpoint driver for Windows if TAP_WIN_IOCTL_SET_MEDIA_STATUS failed
- #5929 - Fix LinkIoCtl parameter interpretation of EC_LINKIOCTL_INTERRUPTENABLE, EC_LINKIOCTL_PROMISCOUSMODE, EC_LINKIOCTL_GETLINKMODE, EC_LINKIOCTL_FORCELINKMODE
- #5743 - Merge EcLinkIoctl() in emllXXX
- #5735 - Remove deprecated mutex configuration in EcDemoMain.cpp for Linux
- #5549 - Fix occasional 5ms freeze in emllTiEnetCpswg on FreeRTOS
- #5775 - Fix compiler error due to INVALID_SOCKET defined in EcOsPlatform.h on Linux
- #5805 - Fix emGetCfgSlaveInfo() over RAS on PPC
- #5808 - Fix emllIntelGbe link reconnect
- #5823 - Add support for INtime Distributed RTOS
- #5852 - Fix resource leak from interrupt initialization on VxWorks
- #5854 - Fix CRC error handling of emllDW3504 for GMAC4.x, …
- #5866 - Fix crash in OsDeleteThreadHandle() on Linux with musl libc
- #5871 - Fix performance measurement becoming corrupted after 32Bit wrap on TI-RTOS
- #5882 - Fix access violation during emllCCAT initialization with invalid parameters
- #5899 - Fix GEM_CLK_CTRL handling to emllGEM on Ultrascale
- #5944 - Fix max frame len for emllTap
- #5801 - Update atemsys V1.4.32
  - Add support for dsa driver with Device Tree (insmod atemsys bRegisterDtbNetDevice=1)
  - Fix Device Tree support for Kernel > 6.1.00
  - Add support for TI AM64 CPSWG Second Port
- #5967 - Fix crash in RAS Server receiving malformed data during connection establishment
- #5975 - Fix crash in LinkOsInterruptDisable on VxWorks70 64Bit
- #5982 - Fix emRasGetConnectionInfo() returning wrong SPOC Information
- #5992 - Fix LinkOsUnmapMemory() on SylixOS
- #6029 - Set bind flags to XDP_COPY and remove unneeded structures in emllSockXdp

3.6 V3.2.2.03

Enhancement

- #5736 - Add command line parameter “-printvars” to EcSimulatorHilDemo
- #5731 - Add support for ENI with invalid Mailbox States settings
- #5716 - Add support for emllDpdk to EC-Wrapper
- #5685 - Change esSetVoeReceiveCallback() to return EC_E_NO_VOE_SUPPORT instead of EC_E_NO_MBX_SUPPORT in case of device emulation
- #5677 - Add support for AL Status IRQ in ESC register 0x0210:3 (0x08)
- #5672 - Increase pcap recorder default buffer size from 50 to 1000 frames and write interval from 1ms to 50ms
- #5643 - Replace OsDbgAssert() with assert() in xmlparse.cpp
- #5532 - Add cmake build files for Linux
- #5416 - Add support for cable redundancy to EC-Wrapper
- #5415 - Add support for EC-Simulator SiL license key parameter “–lic” to EcMasterDemoPython
- #5394 - Add EC_NOTIFY_SLAVE_ERROR_STATUS_INFO on AL Status Error Bit change (ESC register 0x0130.4)
- #5367 - Add support for DCM BusShift to EC-Simulator HiL
- #4735 - Add esSetSimSlaveState()
- #4734 - Add slave state change delay example
- #4278 - Add support for SyncManager Watchdog

Fixes

- #5711 - Change location of WIBU_PHDR_GAP for EC-Simulator Dongled for Linux
- #5708 - Fix support for internal DS402 application with default object dictionary
- #5696 - Use data type identifier 0x000A (DEFTYPE_ARRAY_OF_BYTE) for data type name “ARRAY [0..XXX] OF of USINT” (DEFTYPE_ARRAY_OF_USINT not defined in ETG.1020)
- #5675 - Fix license check for EC-Simulator HiL protected with multiple linklayer instances
- #5674 - Fix partially uninitialized data at CoE SDO upload in SubIndex0 with complete access
- #5673 - Fix CoE SDO download with complete access to partial writeable objects
- #5671 - Fix memory leak in pcap recorder re-usage
- #5574 - Fix EoE ping handler on Linux
- #5551 - Fix crash on CoE read/write for objects without data var pointer
- #5481 - Fix missing EcMbxGatewaySrv.h in packages
- #5479 - Fix support for CoE Object Dictionary Data Types REAL, LREAL

Platform

- #5707 - Add ATEMRAS_T_SRVPARMS::dwMaxQueuedNotificationSize
- #5694 - Add emllIntelGbe for QNX71 ARM_32Bit
- #5670 - Add support for EC_NOTIFY_SLAVE_STATECHANGED, EC_NOTIFY_SLAVE_ERROR_STATUS_INFO to RAS Client on PPC
- #5635 - Update RtaccWin V1.0.8
- #5166 - Reduce Socket timeout if IP address is not available

- #4942 - Add emllEom supporting EtherCAT Open Mode
- #4590 - Add support for Xenomai4
- #5633 - Update atemsys V1.4.31
  - Set license to “SPDX-License-Identifier: GPL-2.0+ WITH Linux-syscall-note”
- #5688 - Add protocol version negotiation to emllRemote
- #5693 - Add device IDs for I219LM and I219V
- #5754 - Replace OsPrintf() with EcLogMsg() in EcSocket
- #5744 - Fix handling of EC_T_LINK_PARMS_DW3504::dwRxDmaDesCnt, dwTxDmaDesCnt in emllDW3504
- #5702 - Reduce large memory allocations in RAS Server
- #5588 - Fix EcLinkOpen() sporadically returning EC_E_TIMEOUT in emllBcmGenet

3.7 V3.2.2.02

Enhancement

- #5631 - Remove obsolete fallback to AtEcat.dll and add fallback to load DLL without explicit full path (DLL searched using PATH environment variable instead) in EC-Wrapper
- #5589 - Add support for multi axis per slave (DS402)

Fixes

- #5603 - Fix missing string termination in GetCfgSlaveEoeInfo(), GetSlaveProp() and CoeReadObjectDictionary() if string length equals buffer size
- #5464 - Fix auto connection of network adapters in Mixed Mode
- #5385 - Fix cable redundancy in Mixed Mode

Platform

- #5623 - Add EC_LINKIOCTL_FORCE_LINK_STATUS
- #5622 - Add EC-Master shared library for QNX
- #5577 - Add EC_LINKIOCTL_GET_PCI_INFO to emllIntelGbe for Windows and Linux
- #5562 - Add support for Semidrive D9 to emllDW3504
- #5548 - Add support for emllDW3504 on Intel Tiger-Lake
- #5639 - Fix CPU affinity for up to 64 cores
- #5626 - Fix link open failed in emllCCAT for some Beckhoff CX
- #5612 - Add RtaccDevice_DmaFree() to Windows LinkOsFreeDmaBuffer()
- #5597 - Fix ecatGetSrcMacAddress() returns wrong MAC address if link down for emllCmsisEth
- #5412 - Update atemsys V1.4.30
  - Fix for Kernel > 6.4.00
  - Fix for systems without 32-bit DMA

3.8 V3.2.2.01

Enhancement

- #5476 - Add EC_IOCTL_GET_LINKLAYER_MODE to EC-Simulator
- #5403 - Add EC-Simulator HiL for RTX64
- #5381 - Add support for multi instance to EC-Simulator SDK Protected
- #5138 - Add “-readod …”, “-readvars …” to examples

Fixes

- #5557 - Fix performance measurement: JOB_Total was sometimes bigger than Task Duration (JOB_Total + App)
- #5533 - Fix memory corruption if ENI file contains more than 64 cyclic frames

Platform

- #5543 - Add support for EC_NOTIFY_MBSLAVE_COE_SDO_ABORT, EC_NOTIFY_SLAVE_INITCMD_RESPONSE_ERROR, EC_NOTIFY_MBSLAVE_INITCMD_TIMEOUT, EC_NOTIFY_MASTER_INITCMD_RESPONSE_ERROR to RAS on PPC
- #5515 - Add support for PENTIUM4llvm_SMP on VxWorks70
- #5514 - Add support for EC_NOTIFY_SB_MISMATCH, EC_NOTIFY_HC_TOPOCHGDONE, EC_NOTIFY_FRAME_RESPONSE_ERROR, EC_NOTIFY_SLAVE_PRESENCE, EC_NOTIFY_SLAVES_PRESENCE to RAS Client on PPC
- #5507 - Update RtaccWin V1.0.7
- #5498 - Add support for STM32H743 on uC3
- #5494 - Move AtXmlParser.cpp and .h to Sources\Common
- #4072 - Add emllSockXdp (Linux AF_XDP sockets)
- #5555 - Add missing notifications to marshalNotify() switch case that may cause an assertion failure
- #5552 - Fix crash in EC-Wrapper .NET with multiple RAS connections after first connection closed
- #5526 - Fix emllNdis interrupt mode (broken since V3.2.1.05)
- #5482 - Fix RAS Client performance issue
- #5467 - Fix occasional crash in emllCPSWG on Jacinto and AM654x

3.9 V3.2.1.05

Enhancement

- #5511 - Add support for EC_T_UINT64 (“0x%016llX”) to EcSnprintf()
- #5509 - Add support for pcap recorder by default to examples on INtime6, Linux
- #5398 - Add log message on receiving EtherCAT commands exceeding EtherCAT frame
- #5377 - Update RtaccWin V1.0.6
- #5357 - Add CycFrameRxCallbackWrapper to EcSimulatorSilDemo
- #5354 - Add support for EC-Simulator SiL Protected to EC-Wrapper
- #5317 - Add support for EC_LINKIOCTL… to esIoCtl()

Fixes

- #5424 - Fix bus cycle time below 1 ms in examples on RTOS-32

- #5391 - Fix notification handlers not called after first client deregistered
- #5372 - Fix simulated slave port link status in Mixed Mode
- #5362 - Fix crash if LRD/LWR/LRW starts after FMMU start
- #5285 - Terminate EcSimulatorHilDemo after evaluation time elapsed (EC_E_EVAL_EXPIRED)
- #4925 - Replace assert() with OsDbgAssert() in xmlparse.cpp
- #5429 - Fix ARMW, FRMW WKC

Platform

- #5442 - Add support for Ti AM243x to emllTiEnetIcssg on FreeRTOS
- #5402 - Add QNX8 support
- #5396 - Add support for Yocto Linux
- #5369 - Add EC-Simulator HiL FP Real-time Accelerator for Windows
- #5368 - Update atemsys V1.4.29
  - Add support for TI AM64 CPSWG
  - Fix PCI dma_coherent bit handling for Kernel between 4.15.0 and 5.4.0
- #5365 - Add PCI device IDs for Intel DWMAC 43a2 and 43ac
- #5364 - Add emllDW3504 for VxWorks x86
- #5355 - Add support for emllBcmNetXtreme to EC-Wrapper
- #5267 - Add support for RISC-V on Microchip Polar Fire
- #5266 - Add emllDpdk for Linux x86 64Bit
- #5265 - Add emllVlan
- #5236 - Replace EcatDrv with RtaccDevice
- #5208 - Add emllCPSWG on TI AM64x and TI AM62x
- #4983 - Add support to set frequency using OsMeasCalibrate() multiple times on Linux
- #4202 - Fix PHY initialization for 8168H/8111H in emllRTL8169
- #5347 - Enable bus master and memory space in PCI command register on QNX
- #5406 - Change name of TI Jacinto 7 from “TI J721E” (eCPSWG_J721E) to “TI TDA4x (Jacinto 7)” (eCPSWG_TDA4X) in emllCPSWG
- #5445 - Add EC_T_LINK_PARMS_DW3504::bNoPhyAccess for emllDW3504
- #5501 - Fix EcLinkClose() blocked until frame received in emllTap
- #5499 - Fix EcLinkRecvFrame() does not return if no frame received in emllTap
- #5452 - Fix MAC Protected License Check in emllBcmGenet
- #5440 - Fix emllIntelGbe returns EC_E_NOMEMORY if cable redundancy and bResetOnDisconnect is used
- #5405 - Fix start with link disconnected for emllBcmNetXtreme
- #5404 - Fix LinkOsAllocDmaBuffer() fails on RtaccWin due to wrong RtaccWin InstanceID in case of multiple RtaccWin devices
- #5397 - Disable OsDbgAssert(…) in EcSimulator.dll on Windows
- #5359 - Fix undefined symbol LinkOsGetPciInfo in emllBcmNetXtreme for Linux
- #5340 - Fix legacy parameters handling in emllIntelGbe
- #5319 - Fix missing PCI info for Real-time Ethernet Drivers on Windows
- #4899 - Add OsReleaseLinkLayerRegFunc to Linux

- #5258 - Fix PHY handling in case of link disconnected for emllCPSW, emllDW3504, emllFslFec, emllGEM, emllICSS, emllRTL8169

3.10 V3.2.1.04

Enhancement

- #5303 - Update Expat V2.6.0

Fixes

- #5321 - Fix no slaves found in bus scan for EC-Simulator SiL on RTOS-32
- #5320 - Fix PHY reset on re-connect EC-Simulator HiL with emllIntelGbe leads to link loss at Master
- #5308 - Add missing emllSnarfGpp to EC-Simulator HiL for VxWorks70 packages
- #5286 - Fix EEPROM CRC error for slaves with identification value and generic EEPROM content
- #5309 - Fix SDO complete access download for array of USINT

Platform

- #5334 - Add EC_T_LINK_PARMS_INTELGBE::bNoPhyCtrlOnConnect to emllIntelGbe
- #5293 - Fix emllIntelGbe PHY reset blocked handling for I225, I350
- #5116 - Add emllBPF for QNX7.1
- #4920 - Change Real-time Ethernet Driver package nomenclature from “EC-Master-…”, “EC-Simulator-…” to “EC-RtEth-…”
- #5326 - Add EC_COMPAREBITS
- #5340 - Fix legacy parameters handling in emllIntelGbe
- #5324 - Fix emllTap initialization
- #5323 - Disable LinkRecvFrame(…) in emllTap in case of EcLinkMode_INTERRUPT
- #5315 - Fix RX stucks in emllI8254x in case of frames exceeding buffer size
- #5335 - Fix memory corruption in RAS Server in emNotifyApp if dwInBufSize exceeds LARGEST_NOTIFICATION

3.11 V3.2.1.03

Enhancement

- #5292 - Disable SSC OP_PD_REQUIRED
- #5274 - Set calling convention at callback function types
- #5270 - Add support for SylixOS on ARM64
- #5157 - Add support for EtherCAT in UDP
- #4161 - Add esSetSlaveCoeObjectTransferCallbacks() example
- #5171 - Add support for esSetSlaveCoeObjectTransferCallbacks() for empty Object Dictionary after esClearSlaveCoeObjectDictionary()
- #5174 - Add pdwOutDataLen, bCheckReadAccess, pdwErrorCode to EC_T_PF_COE_READ_CB and bCheckWriteAccess, pdwErrorCode to EC_T_PF_COE_WRITE_CB
- #5182 - Enable DC unit for ESCs if DC Cycle Time configured
- #5189 - Improve hash table performance

Fixes

- #5296 - Abort CoE SDO Download to SubIndex 0 if download value exceeds max SubIndex from object description
- #5295 - Fix invalid read in EC_COPYBITS at end of pbySrc
- #5283 - Fix invalid read in esConfigureNetwork() for slaves with CoE Object 0x10F3
- #5282 - Fix invalid read in esConfigureNetwork() for slaves with default dictionary
- #5279 - Fix SDO complete access upload for array of USINT
- #5278 - Disable frame polling in interrupt mode
- #5277 - Fix CoE Object Dictionary DataTypes
- #5255 - Fix missing peer disconnection in esSetLinkDownGenerationAtSlavePort(), esResetLinkDownGenerationAtSlavePort()
- #5231 - Fix mailbox repeating
- #5162 - Fix EcMasterDemoMotion and EcSimulatorSilDemoMotion command line parsing if started with DemoConfig.xml (regression since V3.2.1.01)
- #5021 - Fix EC_T_MBXTFER::MbxData from esCoeGetEntryDesc(), …
- #5151 - Fix EcSimulatorHilDemo on VxWorks69
- #5169 - Add EC_NOTIFY_SLAVE_STATECHANGED for simulated slaves with firmware
- #5213 - Fix EC-Simulator Dongled on Linux stops after 10 minutes

Platform

- #5238 - Add support for emGetSlaveInpVarByObjectEx() and emGetSlaveOutVarByObjectEx() to RAS
- #5225 - Add support for TI J721E to emllCPSWG
- #5195 - Add emRasSrvSetLogParms()
- #5070 - Add emllTap
- #4964 - Add support for TI CPSWG AM6x and Jacinto 7 (j784s4) based on Enet LLD on FreeRTOS (emllTiEnetCpswg)
- #4927 - Add support for AMD Xilinx Vitis on FreeRTOS
- #4846 - Add support for TI AM65x to emllCPSWG on Linux
- #5176 - Add EC_LINKIOCTL_SET_MSECCOUNTERPTR to emllGEM
- #5183 - Add emllDW3504 for Xenomai3 ARM_64Bit
- #5193 - Add support for EC_NOTIFY_CLIENTREGISTRATION_DROPPED, EC_NOTIFY_CYCCMD_WKC_ERROR, EC_NOTIFY_*_INITCMD_WKC_ERROR, EC_NOTIFY_COE_MBXSND_WKC_ERROR, EC_NOTIFY_SLAVE_NOT_ADDRESSABLE, EC_NOTIFY*_ALL_DEVICES_OPERATIONAL to RAS client on PPC
- #5199 - Add device IDs for I219LM and I219V
- #5242 - Add support for emUnregisterClient(), EC_IOCTL_UNREGISTERCLIENT to RAS Client on PPC
- #5252 - Update atemsys V1.4.28
  - Fix PCIe compatibility for atemsys < V1.3.5
  - Fix support for Kernel > 6.05.00
  - Fix ATEMSYS_IOCTL_CPSWG_CMD Kernel version
  - Add support for Device Tree Ethernet driver to CPSWG
  - Fix support for arm/aarch64 Kernel >= 6.00.00

  - Fix of_dma_configure version
  - Add ATEMSYS_IOCTL_IOMEM_CMD for Kernel mode access to protected registers
  - Add ATEMSYS_IOCTL_CPSWG_CMD to configure K3_UDMA_CPSWG channels, flows and rings
- #5256 - Add emllRemote for Linux, Windows
- #5314 - Fix OsWaitForEvent(…, dwTimeout) on RTOS-32
- #5275 - Fix EC-Simulator HiL EC-Wrapper
- #5259 - Fix missing DLLs in EC-STA packages
- #5239 - Fix dependency of compiled OsLayer to Sources/OsLayer on Windows
- #5223 - Deactivate Filters in the NDIS driver
- #5108 - Fix emCoeGetODList(), emCoeGetObjectDesc(), emCoeGetEntryDesc() for RAS Client on PPC
- #5181 - Remove duplicate warning of missing PREEMPT RT patch on Linux
- #5200 - Fix long timeout at RAS Client disconnection after socket shutdown
- #5201 - Fix emNotifyApp() over RAS without emRegisterClient() at RAS Client
- #5229 - Fix EcMbxGatewayClnt uploads not existing object for internal config slave cache
- #5230 - Fix EcMbxGatewayClnt logging (EC_T_MBX_GATEWAY_CLNT_CONDESC::LogParms)
- #5240 - Fix erroneously deregister client in RAS Server for previously dropped client
- #5243 - Fix RAS Client EC_LOG_LEVEL_INFO_API logging

3.12 V3.2.1.02

Enhancement

- #5074 - Add HiL/SiL-specific Quick Start Guide
- #4999 - Add Sync Manager polling if AL Event disabled in Sync Manager Control Register
- #5002 - Skip physical slaves at license check slave count
- #5081 - Add esGetSlaveInpVarByObjectEx(), esGetSlaveOutpVarByObjectEx()

Fixes

- #5123 - Fix EcMasterDemoMotion command line parsing if started with DemoConfig.xml (regression since V3.2.1.01)
- #5120 - Fix timing task CPU affinity
- #5099 - Fix potential naming conflict of Expat library
- #5067 - Fix crash in EcSimulatorSilDemo on shutdown with pcap recorder enabled
- #5057 - Fix support for MAC independent license key (regression since V3.1.4.09)
- #4993 - Fix process data partially not updated due to wrong FMMU copy length
- #5013 - Fix EC_T_MBXTFER::eTferStatus update in esCoeGetEntryDesc(), esCoeSdoDownloadReq(), esCoeSdoUploadReq(), esCoeGetODList(), esCoeGetObjectDesc()
- #5028 - Fix missing context for esSetSlaveCoeObjectTransferCallbacks()
- #5076 - Fix console logging freeze on RTOS-32 (regression since V3.1.4.05)
- #5079 - Enable DC unit for ESCs with 3 or more ports
- #5085 - Fix slave data lookup error if configured station address at simulator differs from master

- #5093 - Fix cycle time performance measurement is implemented in eUsrJob_SendAllCycFrames instead of eUsrJob_StartTask (regression since V3.1.2.03)
- #5125 - Fix registered client lookup on notification
- #5126 - Fix esGetSlaveId(), esGetSlaveFixedAddr() for SIMULATOR_SLAVE_ID
- #5127 - Fix missing string termination in SDO value log message of DEFTYPE_VISIBLESTRING in CoeReadObjectDictionary() in examples
- #5128 - Fix Master OD reading canceled at RX PDO mapping and TX PDO mapping in CoeReadObjectDictionary() in examples

Platform

- #5051 - Remove support for T-Kernel and eT-Kernel
- #4985 - Add FP Real-time Accelerator for Windows
- #4641 - Add support for Broadcom BCM5719 (emllBcmNetXtreme)
- #4245 - Remove obsolete EC_LINKIOCTL_REGISTER_FRAME_CLBK, EC_LINKIOCTL_UNREGISTER_FRAME_CLBK
- #4909 - Add MAC Protection for Rockchip RK3588 and RK3568
- #4937 - Use poll() or epoll() instead of select() for sockets
- #4943 - Add support for i.MX93 to emllFslFec
- #4965 - Fix support for KSZ9131 (disable EEE in Phylib)
- #5042 - Add EC_T_LINK_PARMS_GEM::bNotUseCacheSync to fix performance issue with emllGEM e.g. on older systems by disabling internal LinkOsCacheDataSync() (default: enabled)
- #5053 - Add support for MAC protection to emllDW3504 on Rockchip RK3399
- #5097 - Fix crash in rt_task_inquire due to bug in Xenomai3 API
- #4972 - Fix emllIntelGbe EcLinkGetSpeed()
- #4872 - Fix DW3504 Altera Cyclone Performance issue by turn off cache sync
- #4967 - Fix memory leak in emllAlteraTSE
- #4984 - Fix emRasSrvStop hangs on EC-Win(RTOS-32)
- #4995 - Configure TTS interrupt only if EC_T_LINK_PARMS_ICSS::TtsParms::pfnStartCycle set
- #5001 - Fix emllRZT1 MAC address reset
- #5014 - Fix RAS server on RTX64 (broken since V3.1.4.01)
- #5065 - Fix threading on TI-RTOS AM65x (e.g. RAS server starved)

3.13 V3.2.1.01

Enhancement

- #4894 - Add CopyInfo to EC_T_PROCESS_VAR_INFO
- #4805 - Change IPv4 parameter variables type from EC_T_DWORD to EC_T_IPADDR
- #4612 - Remove legacy performance measurement APIs
- #4941 - Extend EC_T_SIM_SLAVE_CFG_INFO, EC_T_SIM_SLAVE_STATUS_INFO
- #4932 - Add EC_T_SIMULATOR_INIT_PARMS::bApiLockByApp
- #4946 - Add pdwVersionType parameter to esGetVersion()
- #4525 - Rename RAS client and server to EcSimulatorRasClient, EcSimulatorRasServer

- #4017 - Rename esPerfMeasInternalXxx to esPerfMeasXxx
- #4975 - Fix crash in esConfigureNetwork() if network already configured
- #4960 - Fix occasional AoE mailbox data corruption
- #4952 - Fix missing SM_CHANGE_EVENT when byte containing Sync Manager Enable Bit (0x0806, 0x080E, 0x0816,…) is written
- #4918 - Fix reentrancy of esInitSimulator() after esInitSimulator() was called with bad parameters

Platform

- #4972 - Fix emllIntelGbe EcLinkGetSpeed()
- #4971 - Add pdwSpeed parameter to EcLinkGetSpeed
- #4950 - Add support for 64Bit DMA physical address on INtime6
- #4855 - Add szLoadPath to EC_T_LINK_PARMS
- #4837 - Add QNX SMMUMAN support
- #4726 - Add support for Rockchip DW3504
- #4718 - Add support for IRQ CPU affinity on Linux
- #4626 - Add device IDs for Intel Pro/1000 (i8254x) I226
- #4611 - Add support for Xilinx KR260 SGMII Port
- #4956 - Fix INVALID_STATE in CEcWrapperDotNet::DeinitInstance() if started with MbxGatewaySrv
- #4882 - Add support for SGMII on Marvell 88E1510 for Intel DW3504
- #4859 - Fix DW3504 Rockchip Clocks and second Instance
- #4784 - Fix EcatDrv to support KeTimer period < 16ms

3.14 V3.2.0.03

Enhancement

- #4848 - Use default TaskId 0 if eUsrJob_StartTask called with EC_NULL
- #4833 - EC_COPYBITS_INLINE declare EC_T_BYTE* pbySrc as const
- #4736 - Add esGetCfgSlaveEoeInfo()
- #4778 - Add support for CoE object entry gaps

Fixes

- #4877 - Fix IntelGbe EclinkOpen() faulty log messages
- #1899 - Fix RAS protocol corruption in case of concurrent send requests at server
- #4792 - Fix occasional lock-up at stopping acceptor thread in emRasSrvStop(…)
- #4810 - Fix crash in EC-Wrapper .NET if variable size exceeds 512 bytes
- #4875 - Fix text translation crash in EC-Wrapper
- #4781 - Fix force process data after FMMU start
- #4783 - Fix CoE upload error also ignored if ignore CoE download set

Platform

- #4791 - Add support for ecatGetCfgSlaveInfo() to RAS client on PPC
- #4804 - Add Device ID for Intel Pro/1000 I82545EM Copper

- #4820 - Update atemsys V1.4.25
  - Add IOCTL_INT_CPU_AFFINITY
  - Add Device Tree Ethernet driver support for RockChip

3.15 V3.2.0.02

Enhancement

- #4605 - Add “-maxbusslaves” parameter to examples
- #4813 - Add SSC_APPL-callback EC_T_SLAVE_SSC_APPL_DESC::pfnMainInit for APPL_MainInit
- #4807 - Add simulator id and slave address to EC_PF_SSC_APPL-callbacks
- #4806 - Set calling convention at EC_PF_SSC_APPL-callbacks
- #4713 - Add esEoeSendFrame() and support for pfnEoeReceive and pfnEoeSettingInd
- #4746 - Add support for APRW and FPRW
- #4712 - Add esSetSlaveAoeObjectTransferCallbacks()
- #4639 - Add esGetSimSlaveInfo()
- #4760 - Fix support for MAC independent license key
- #4719 - Fix support for ULINT datatype from EXI (e.g. Timestamp Object 0x10F8)
- #4710 - Fix esGetMasterState() at startup
- #4693 - Fix duplicated frames logging

Fixes

- #4737 - Fix value distribution for min and max bin in performance measurement histogram
- #4708 - Remove systematic delay of 250ms within emConfigLoad(), emConfigureMaster(), emConfigExtend(), emDeinitMaster(), emRescueScan(), emSelfTestScan()

Platform

- Microsoft ® Windows ® Visual Studio ® project files updated to VS2015
- #4704 - Add EC_T_LINK_PARMS::dwLinkSpeed
- #4688 - Add wait within EcLinkRecvFrame() for all previously sent frames returned to emllProxy
- #4752 - Fix API call over RAS delayed if a parallel RAS connection is broken
- #4709 - Add support for STM32MP135 to DW3504
- #4694 - Add PartialImage libraries for VxWorks70 linklayers
- #4691 - Add support for ecatNotifyApp() from RAS Server application to RAS Client application
- #4690 - Change connection type from UDP to TCP for emllProxy
- #4764 - Fix memory leak in RAS Client if connection lost while EoE-Endpoint active
- #4755 - Fix EC_COPYBITS out-of-bounds read from pbySrc
- #4739 - Fix all printf replaced with EcLogMsg in LinkOsLayer for VxWorks
- #4670 - Add esVoeSend() over RAS
- #4731 - Update atemsys V1.4.24
  - Fix PCI bars
  - Add Device Tree Ethernet driver support for STM32mp135

3.16 V3.2.0.01

Enhancement

- #4529 - Update to expat V2.4.9
- Obsolete .NET and Python interface classes, enums and methods removed

Platform

- #4338 - Add IstStackSize to all Linklayers parameters
- #4331 - Change Mutex default setting for Linux
- #4666 - Add support for VxWorks MSI
- #4694 - Add PartialImage libaries for VxWorks70
- #4665 - Update atemsys V1.4.22
  - Fix Build Warnings
  - Fix kernel config depending irq structures
  - Fix kernel version 4.12 to 4.15 for handle of dma_coherent bit
  - Add IOMMU support, new mapping to userspace active and tested for kernel > 5.4, use old mapping with ATEMSYS_LEGACY_DMA=1 define or activate new mapping with ATEMSYS_LEGACY_DMA=0 define for older kernel

3.17 V3.1.4.08

- Add EC-Simulator Linux HiL x86 32 Bit Dongled
- Add esSendSlaveCoeEmergency()
- Fix JobTask cycle time in Python examples
- Fix performance measurement in EcSimulatorHilDemoPython
- Fix assert on cyclic frame processing for slaves with sync units containing empty PDOs only
- Fix EC_T_CFG_SLAVE_INFO::wNumProcessVarsInp, EC_T_CFG_SLAVE_INFO::wNumProcessVarsOutp from esGetCfgSlaveInfo() due to erroneously skipped entries by variables not assigned to any slave

Platform

- Add support for VxWorks MSI
- Fix lock-up in emllProxy EcLinkClose() on Windows

3.18 V3.1.4.07

- Call myAppWorkpd() after cyclic frame processing in EcSimulatorHilDemoMotion in Interrupt Mode
- Fix performance measurement in EcSimulatorHilDemoMotion

Platform

- Add EcSimulatorHilDemoMotion for INtime6, QNX7, QNX71, VxWorks70
- Fix VxWorks RTP AtemSys pipe release
- Fix memory violation leading to undefined behavior like crash or erroneous timeout during DC related InitCmd on VxWorks70 PPC and x86 with emllSnarf, SystemTime() since VxWorks70SR660 and DMA on x86 since VxWorks70vw2203

3.19 V3.1.4.06

- Add error simulation between real slaves
- Add support for 12 slaves license limit
- Fix slave information prints contain “ERROR: Not found” in examples
- Increase log buffer in examples
- Fix EcSimulatorHilDemoMotion parameter handling
- Fix CoE emergency if SOE_SUPPORTED in SSC (SOE_EMERGENCY_SUPPORTED=0)
- Remove BlockNode handling from CEmNotification
- Fix crash in case of invalid ENI containing a hot connect group head slave with physical address equal to zero

Platform

- Add link status state machine to emllBcmGenet
- Add support for Linux ARM 32 Bit to emllBcmGenet
- Force disconnection using PHY loopback for emllI8254x if ResetOnDisconnect not set
- Add support for emllTiEnetIcssg on AM64xEVM with FreeRTOS
- Add emllDW3504 for Xenomai
- Select ‘ECAT Protocol Driver’ installation on Windows by default if not currently installed
- Fix PCI link layer support for QNX ARM 32 Bit
- Add DCM MasterShift for QNX
- Fix missing ATEMRAS_NOTIFY_CONNECTION EMRAS_EVT_SERVERSTOPPED on connection termination by server
- Fix TX hang in emllI8254x for I219 after uncontrolled termination
- Fix lock-up in EC-Wrapper RAS connection on termination by server
- Set default stack size to 0x8000 for 64 Bit architectures

3.20 V3.1.4.05

- Add frame RX time to DC simulation
- Add EC_LINKIOCTL_GET_ONTIMER_CYCLETIME, EC_LINKIOCTL_SET_ONTIMER_CYCLETIME, EC_LINKIOCTL_ONTIMER to SiL
- Fix compiler errors for EXCLUDE_EC_SIMULATOR_HIL, EXCLUDE_EC_SIMULATOR_SIL, EXCLUDE_INTERFACE_LOCK, EXCLUDE_MASTER_OBD and INCLUDE_PERF_MEAS
- Set EC-Master cycle time as EC-Simulator SiL cycle time by default in emInitMaster()
- Fix missing loop closed info in DL status for initially disconnected ports
- Fix no messages in error log if NOPRINTF defined
- Set cycle time parameter in EcSimulatorHilDemo

Platform

- Add Xenomai3 ARM 64Bit support to RTL8169
- Add support for Universal WIBU Code
- Add emllBcmGenet for Raspberry PI 4 (BCM2711)

- Fix reset MAC address at DW3504
- Fix memory leak in OsCreateEvent() on Linux, Xenomai, RTEMS and SylixOs in case of semaphor initialization error

3.21 V3.1.4.04

- Add pOsParms to EC_T_LINK_PARMS_SIMULATOR
- Fix EcSimulatorHilDemo startup error
- Fix EcSimulatorSilDemo startup error

Platform

- Add support for Xenomai3 ARM 64Bit
- Add support for VxWorks70

3.22 V3.1.4.03

- Fix access to some object types by implicitly pad entries to even 16bit memory addresses (SSC OBJ_WORD_ALIGN)
- Add “-oem” command line parameter to examples
- Add AtesRasClient
- Add notification logging (e.g. slave state change) to EcSimulatorHilDemo
- Fix memory leak in SSC on AoE read and SDO info
- Fix memory leak in esInitSimulator if called with invalid parameters
- Fix EC_IOCTL_ISLINK_CONNECTED on start

Platform

- Increase resolution for OsSystemTimeGet() on Windows
- Add bDisablePromiscuousMode and bDisableForceBroadcast parameters to emllNdis
- Add absolute path support alternative to OsGetLinkLayerRegFunc for VxWork70
- Fix counter overrun in OsQueryMsecCount on VxWorks69 PENTIUM4
- Fix RTOS-32 is not supporting cycle times below 1000us (broken since V3.1.1.06)
- Fix occasional crash in RAS Server on EC_IOCTL_UNREGISTERCLIENT
- Fix occasional crash on emRasClntRemoveConnection after emRasSrvStop
- Fix Interrupt Mode support for emllProxy
- Fix Multi Tasks Configuration doesn’t work with emllNdis Linklayer
- Fix memory leak on RAS socket disconnect while API call pending
- Fix to block emRasClntRemoveConnection, emRasSrvStop until all worker threads terminated

3.23 V3.1.4.02

- Add performance measurement level to -perf command line parameter
- Add emGetMemoryUsage over RAS
- Add link layer parameters help to Python example application
- Fix crash on simulator restart in OPERATIONAL
- Fix crash with DS402 and EXI containing Object Dictionary
- Fix occasional crash on concurrent call of esPowerSlave and EC-Simulator frame processing
- Fix occasional crash in emllSimulator IST
- Fix invalid write to second byte in buffer on esCoeSdoUpload with datalen = 1
- Fix invalid temp data read at end of CoE object type BYTE Array [0..n]
- Fix blocking API handling over RAS
- Fix command line contains unexpected application name in RTOS-32 config files

Platform

- Add Xenomai support
- Add MAC protection to emllFslFec for i.MX8 and i.MX8m
- Add “EcatDrv for Optimized Link Layers” to EC-Simulator HiL User Manual
- Fix CPSW transmit channels to work with acontis CPSW Linux driver patch

3.24 V3.1.4.01

- Add esVoeSend, esSetVoeReceiveCallback
- Add write support to read-only CoE objects
- Fix access to CoE SubIndex on odd word address
- HiL: Fix start with link disconnected and link reconnection
- Fix mailbox queue entries memory leak (SSC related)
- SiL: Increase IST stack size from 0x4000 to 0x8000
- SiL: Fix occasional lock-up in IST
- Don’t call OsMeasCalibrate() if performance measurement is disabled
- Rename PerfMeas distances to offsets
- Fix AoE support for PPC

Platform

- Fix i8254x interrupt mode on ARM/AARCH64
- Fix AoE support for PPC
- Updated to ECAT NDIS Protocol Driver Setup V3.1.3.4. Hide command window during driver installation
- Updated to atemsys V1.4.20
  - Fix support for CMA (Contiguous Memory Allocator) for kernel > 4.9.00

3.25 V3.1.3.03

- Fix topology info if master assignes other addresses than in ENI/EXI
- No error on ScanBus request
- Add EC_T_MASTER_INFO::dwMasterStateSummary
- EC_T_MASTER_INFO::BusDiagnosisInfo data available even if compiled with EXCLUDE_MASTER_OBD
- Cycle time and JOB_Total timer missing in EcMonitor since V3.1.2.10

Platform

- Updated to atemsys V1.4.18
  - Remove obsolete ARM cycle count register(CCNT)
  - Fix PCI driver do registration for all Ethernet network adapters
  - Add modul parameter AllowedPciDevices to adjust PCI driver
- Add CPU affinity support to Link Layers supporting interrupt mode

3.26 V3.1.3.02

- Support ENI file with CU2508 only
- Alias can be used for all configured address command types (FPRD, FPWR, …)
- Use station address as alias address in simulated default EEPROM (if EEPROM for the slave not explicitely set in EXI)
- Return simulated frame to master before post processing

Platform

- Add RTL8168H support to emllRTL8169
- Fix DMA buffer alignment in emllRTL8169 (regression since V3.1.3.01)
- Fix DMA allocation, requesting memory below 4GB for AARCH64/ARM64 on QNX
- Updated to ECAT NDIS Protocol Driver V3.1.3.2
  - Move promiscuous mode setting from NDIS Link-Layer to NDIS protocol driver
  - Add an entry “DontSetPromiscuousMode” in the Windows registry to avoid setting promiscuous mode in ECAT NDIS Protocol Driver
  - Rename Setup to “ECAT NDIS Protocol Driver”
- Fix EcatDrvGetDrvVersion on Windows (regression since V3.1.3.01)
- Fix DMA memory allocation address handling if base is > 2GB leading to permanent frameloss in VxWorks-32Bit
- Add RTL8125 support to emllRTL8169
- Add Link Layer IST CPU affinity mask and priority for .NET and Python
- Add CYCFRAME_RX_CB for .NET and Python
- Updated to atemsys V1.4.17.
  Fix atemsys dma_set_mask_and_coherent() missing in kernels under 3.12.55
- NDIS fix start-up with link disconnected

3.27 V3.1.3.01

- Fix EC-Simulator HiL multi link Interrupt Mode
- Fix line crossed in mixed mode
- Implicitely IgnoreCoeDownloadError for EXI
- Add interrupt mode support for emllSockRaw
- Updated to EcatDrv V3.1.3.01 Add Print EcatDrv Version to Ecat Driver for Windows
- Fix parse PCI bus hardware ID string on Windows

3.28 V3.1.2.11

- Fix lock-up in esConfigureNetwork in case of link disconnected and only one slave configured
- Fix ERROR SDO: Toggle bit not alternated for ENI with segmented CoE InitCmds

3.29 V3.1.2.10

- Fix force process data (MixedMode)

3.30 V3.1.2.09

- Fix occasional lock-up in e.g. esSetSlaveSscApplication due to endless “wait until SyncManager is disabled”
- Fix auto increment address usage in case on line break
- Fix Bus Diagnosis Object 0x2002, SubIndex 4: Number of DC Slaves found
- Remove absent slave’s objects from 0x3nnn, 0x9nnn
- Fix esGetBusSlaveInfo wPrevPort not set
- Refresh OD on DL Status Change
- Fix return code of esGetBusSlaveInfo for absent slaves
- Fix Simulator OD on reconnect slave at other position
- Improve pcap recorder timestamps using OsPerfMeas
- Updated to atemsys V1.4.15
- Fix missing signal handler for SIGINT, SIGTERM on QNX
- Fix EcatDrv to support AuxClk period < 16ms
- Add 64Bit DMA support for RTL8169

3.31 V3.1.2.08

- Fix default port 0 connection of slaves with wHCIdentifyAddrPrev (busmismatch)
- Add SlaveID to BusSlaveInfo
- Fix EK1200 support
- Add EC_NOTIFY_HC_TOPOCHGDONE for esPowerSlave, esDisconnectPort, esConnectPorts
- Increase MAX_MBX_WRITE_ADDRESS

3.32 V3.1.2.07

- Fix identity object (0x1018) in case of Default Object Dictionary for PPC

3.33 V3.1.2.06

- Add eCnfType_Data for SiL
- Add FSoE
- Add EoE supported detection support
- Add EC_IOCTL_SIMULATOR_SET_MBX_PROCESS_CTL, EC_IOCTL_SIMULATOR_GET_MBX_PROCESS_CTL
- Fix HiL with winpcap
- Fix WKC for multi sync unit slaves on LRW
- Fix performance measurement

3.34 V3.1.2.05

- Fix esForceProcessDataBits for mutliple slaves' INPUTs

3.35 V3.1.2.04

- Add Mixed Mode 2: Real slave between simulated slaves
- Fix Process Data Image Sync for Process Data below Ado 0x1000
- Fix esSetProcessDataBits for INPUTs, e.g. EcSimulatorHilDemoPython
- Fix missing EcWrapper for HiL
- Fix encrypted ENI/EXI accepted if OEM key missing (esSetOemKey)
- Fix missing interrupt callback registration at link layer for HiL
- Fix last SimSlave CoE object missing at esCoeGetODList
- Fix occasional crash in esResetSlaveCoeObjectDictionary

3.36 V3.1.1.07

- Add Object 0x2001 “Master State Summary”, Bit 8: Slaves in requested State

3.37 V3.1.1.06

- Discard process data variables not assigned to slaves e.g. variables from “Image-Info” in TwinCAT are out of allocated “Image”
- Replace MAC address fall back AA:BB:CC:CA:FE:xx with 00:00:00:00:00:xx
- Fix occasional crash in EXI loading

3.38 V3.1.1.05

- Fix EC-Simulator SiL Dongled delivery

3.39 V3.1.1.04

- Fix NULL pointer crash in EcSimulatorHilDemo::RasNotifyCallback
- Add SONAME for libEcSimulator.so on Linux
- Add interrupt mode for EC-Simulator HiL
- Add Mixed Mode with EC-Simulator at end support (Mixed Mode 1)
- Add /EtherCATConfig/Config/ExtendedInfo/Entry/Slaves/Slave/Simulated support
- Fix process image sync with copy offset (TwinCAT ENI)
- Skip “not used sync managers shall be disabled” check (non-acontis Master)
- Fix DPRAM from process image sync (forced data)
- Prevent lock-up in esConfigureNetwork if circulating topology provided

3.40 V3.1.1.03

- EC-Master supports EC-Simulator SiL license
- Add slave address in CoE object transfer callbacks
- Fix station address look-up order in esGetSlaveId

3.41 V3.1.1.02

- Add supported Mbx Protocols to esGetCfgSlaveInfo, esGetSlaveInfo
- CiA402 axis simulation enabled only for ApplicationName “DS402” in EXI (Regression since V3.1.1.01)
- Add “-simulator … –connect” option for e.g. Cable Redundancy
- esLogFrameEnableAtSlavePort, esLogFrameDisableAtSlavePort
- Add esSetLinkDownAtSlavePort, esSetLinkDownGenerationAtSlavePort, esResetLinkDownGenerationAtSlavePorts
- Add esSetErrorAtSlavePort, esSetErrorGenerationAtSlavePort, esResetErrorGenerationAtSlavePorts
- Fix emInitSimulator invalid parameters logging
- Add EXI parsing “PowerOff”, “PortConnection”, “IgnoreCoeDownloadError”
- Add EC_NOTIFY_SLAVE_PRESENCE
- Fix esIsSlavePresent

3.42 V3.1.1.01

- Fix Object dictionary reset for esSetSlaveSscApplication
- Add pvContext to esSetSlaveCoeObjectTransferCallbacks
- Fix FoE, SDO transfers in SSC for PPC
- Fix esGetSlaveInpVarInfoEx, esGetSlaveOutpVarInfoEx

3.43 V3.1.0.20

- Add EL6695 support (extend slave RAM size to 0xA000)
- Fix invalid CoE access due to mismatched TYPEDEF_ARRAY_… bit offset
- Fix invalid process data access in simulated slave application

3.44 V3.1.0.19

- Add RAS support to EcMasterDemoMotion with EC-Simulator SiL
- Add EC_IOCTL_REGISTER_CYCFRAME_RX_CB
- Simulator API calls over RAS esPowerSlave, esDisconnectSlave, esConnectSlaves
- Fix unknown tag warnings on startup with EXI
- Fix memory leak in Diagnosis History object of SSC
- Check Sync Manager settings according to ENI/EXI
- Fix INPUTs access from application
- Fix WKC error for Slaves with zero-lengthed FMMUs / Sync Managers
- Add Multi Sync Manager Channel support to SSC and EC-Simulator
- Fix EC-Simulator SiL OnTimer Thread on INtime
- Fix DS402 after esPowerSlave

- Clear slave inputs on slave power off

3.45 V3.1.0.18

- Fix crash on esPowerSlave with object dictionary from EXI or application
- Fix link layer based license key handling (HiL)
- Fix Reference Clock position for auto-connect floating hot connect
- Ignore empty RECORD / ARRAY data types
- Ignore SoE writes exceeding object's default buffer size
- Fix WIBU Product Code for EC-Simulator Dongled
- Fix partialy uninitialized Object Entry Data (EXI)
- Fix occasional crash due to 0x3002 "Outputs" SDO structur (generic OD)
- Fix object length on SDO complete access download according to object description
- Fix missing awaiting all APIs have finished in esDeinitSimulator
- Fix illegal unlock in ReleaseInterface if EC-Simulator compiled with EXCLUDE_INTERFACE_LOCK
- PDI read OUTPUT Sync Manager already in SAFEOP to prevent WKC errors (simulated slaves with Process Data in Mailbox Mode)
- Ignore 0x1C33, SubIndex 1: Synchronisation type. Needed for simulated slaves with Process Data in Mailbox Mode.
- Add esSetLicenseKey to EcSimulatorHilDemo
- Extended 0x1C12 / 0x1C13 to 16 entries (PDO_ASSIGN_CNT)

3.46 V3.1.0.17

- Add INPUTs from Process Data Image for slaves without device emulation
- Add initially connect / disconnect all hot connect groups
- Add handler for unknown data type in Object Dictionary
- Add esResetSlaveCoeObjectDictionary
- Add esGetNumConnectedSlaves, esGetNumConnectedSlavesMain,
- Add esIsSlavePresent (linked in topology and powered on)
- Add slave information to identity object (0x1018) for default Object Dictionary
- Fix CoE OD memory leak in esSetSlaveSscApplication
- Fix slave SSC default application flash support
- Fix ecatPerfMeas
- Fix crash in esSetSlaveSscApplication for default handlers
- Fix memory leak in Object Dictionary in case of esSetSlaveSscApplication
- Fix memory corruption during logical command parsing
- Change esGetSlaveIdAtPosition: Use auto increment address from ENI/EXI
- Change licensed slave count (24 / 64 / 128 / 256)
- Add EC-Simulator-SiL-Linux-x86_32Bit-Dongled

- Refactor emllSimulator as wrapper for EcSimulator. SiL delivery contains EC-Simulator core library.
- Rename esRemoveSlaveCoeObject to esDeleteSlaveCoeObject
- Rename esAddSlaveCoeObjects to esExtendSlaveCoeObjectDictionary

3.47 V3.1.0.16

- Add esSetLicenseKey for HiL (incl. MAC based key) and SiL
- Refactor emllSimulator as wrapper for EcSimulator (SiL)
- SiL: bDisableProcessDataImage, bJobsExecutedByApp defaults to FALSE
- Add EcSimulatorSilDemo
- Apply forced INPUTs to Process Data Image
- Add esGetSlaveIdAtPosition using auto increment address from ENI/EXI
- Add wNumProcessVarsInp, wNumProcessVarsOutp to esGetCfgSlaveInfo
- Add esClearSlaveCoeObjectDictionary, esRemoveSlaveCoeObject
- Add esCoeSdoDownload, esCoeSdoUpload
- Add esCoeGetODList, esCoeGetObjectDesc, esCoeGetEntryDesc for slaves
- Add esSetSlaveSscApplication
- Add esAddSlaveCoeObjects
- Add esSetSlaveCoeObjectTransferCallbacks
- Apply mailbox settings from ENI/EXI to EEPROM default content
- Increased SSC mailbox limits
- Add RAS server to emllSimulator (SiL)
- Add DL control feature “Temporary use of settings in 0x0100:0x0103[8:15]”
- Parse Hot Connect identification (Ado134, EEPROM, DPRAM) from ENI/EXI
- Add object mappable as TxPDO / RxPDO parsing from EXI
- Add object access restrictions parsing from object dictionary in EXI
- Updates to EXI parsing for new EXI format, e.g. Slave Application
- CiA402 axis simulation enabled only for ApplicationName “DS402” in EXI
- Add OEM EXI support
- Add initial memset for slave process data
- Add EC-Simulator OD reading support to EC-SlaveTestApplication
- Fix EC-Simulator OD reading (regression since V3.1.0.15)
- Re-init slave on power cycle (esPowerSlave)
- Deny BOOTSTRAP and mailbox protocols requests not enabled at ENI slave
- Fix esSetSlaveState to higher state denied
- Fix crash in esSetSlaveState for Device Emulation (not supported)
- Fix occasional crash in SSC CoE read
- Fix occasional crash in SSC Mailbox handler
- Fix crash if DS402 activated without Target Velocity

- Ignore complete access to simple object PDO config (legacy ESI support)
- Return coherent port receive times even if input port is not port A, supporting junction redundancy and line crossed topologies

3.48 V3.1.0.15

- Fix cyclic mailbox state cmd for HiL
- Fix ECAT Event Mask (0x0200) register refresh
- Prevent endless loop in ReceiveFrame
- Set port mode auto (revert auto-close) on slave power on
- Fix AoE for Linux x64
- Fix EC-Simulator HiL with SockRaw
- Add NDIS link layer
- Fix VendorId, ProductCode, RevisionNumber, and SerialNumber internally get from EEPROM as WORD instead of DWORD, leading to missing tabs in EC-Engineer

3.49 V3.1.0.14

- Add esSetSlaveState
- Add esReadSlaveIdentification
- Add esGetSlaveStatistics / esClearSlaveStatistics
- Fix esGetBusSlaveInfo returning erroneous children slaves information
- Add CiA402 simulation
- Add esSetOemKey for AtesRasSrv
- Add EC-Engineer MDP scan support using online EXI
- Add CoE Object Dictionary from EXI
- Extend default RxPDOs, TxPDOs 0x1600…0x1603, 0x1A00…0x1A03, SI 1…8 (writeable)
- Ignore CoE download error in case of default Object Dictionary
- Add INPUT setting by EC-Engineer support
- Fix EC-Simulator device information in Object Dictionary
- Add abyMac, dwRxBufferCnt, dwBusCycleTimeUsec, bJobsExecutedByApp, qwOemKey to EC_T_LINK_PARMS_SIMULATOR
- Add missing SDK\INC\EcSimulator.h to EC-Simulator SiL
- Fix EC-Simulator SiL Process Data Image support
- Fix esGetNumConfiguredSlaves

3.50 V3.1.0.13

- Add esConnectPorts, esDisconnectPort, esPowerSlave to EcSimulator.def
- Update SSC from V5.11 to V5.12
- Add EC-Simulator-HiL-QNX6
- Fix CPU Affinity for emllSimulator

3.51 V3.1.0.12

- Refresh AL Status and Control in object dictionary
- Add esGetSlaveId, esGetSlaveFixedAddr, esGetSlaveProp, esGetSlaveState, esGetSlaveInfo
- Add EC-Simulator-HiL-QNX7
- Add frame logging
- Add Network Operation Functions (esConnectPorts, esDisconnectPort, esPowerSlave)
- Fix occasional crash in ProcessFrame
- Add EEPROM write by EtherCAT support

3.52 V3.1.0.11

- Add EC_NOTIFY_SLAVE_STATECHANGED
- Add RegisterClient / UnregisterClient
- Add EK1200 support
- Device Emulation for non-mailbox slaves if Extended Info not available for slave
- Increase MAX_PD_WRITE_ADDRESS, MAX_PD_READ_ADDRESS to end of DPRAM (0x3FFF)
- Device Emulation for non-mailbox slaves if Extended Info not available for slave
- Support Port Receive Times
- Add EcSimulatorHilDemo

Platform

- Add Linux
- Add Windows