



acontis technologies GmbH

SOFTWARE

EC-Monitor

Release Notes

Version 3.2

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1 New Features

1.1 V3.2

- Codesys EtherCAT® Master support
- KPA EtherCAT® Master support

2 Migration

2.1 From V3.1

- Change EC-Monitor API Prefix from “em” to “emon”
- Update to expat V2.4.9
- Remove Obsolete .NET and Python interface classes, enums and methods
- Replace emI8254x by emIntelGbe and support of TTS for Intel® i210 and i211
- Rename emPerfMeasInternal to emPerfMeas, old deprecated API removed
- Refactor EC_T_SB_MISMATCH_DESC
- Rename emCoeGetOdList(), emCoeGetObjectDesc() and emCoeGetEntryDesc() to emonCoeGetOdListReq(), emonCoeGetObjectDescReq() and emonCoeGetEntryDescReq()

3 Enhancements/bug fixes

3.1 V3.2.1.04

Enhancement

- Update Expat V2.6.0

Platform

- Add EC_T_LINK_PARMS_INTELGBE::bNoPhyCtrlOnConnect to emllIntelGbe
- Fix emllIntelGbe PHY reset blocked handling for I225, I350
- Add emllBPF for QNX7.1
- Change Real-time Ethernet Driver package nomenclature from “EC-Master-...”, “EC-Simulator-...” to “EC-RtEth-...”
- Add EC_COMPAREBITS
- Fix legacy parameters handling in emllIntelGbe
- Fix RX stucks in emllI8254x in case of frames exceeding buffer size
- Fix memory corruption in RAS Server in emNotifyApp if dwInBufSize exceeds LARGEST_NOTIFICATION

3.2 V3.2.1.03

Enhancement

- Set calling convention at callback function types
- Add support for SylixOS on ARM64
- Add emonGetSlaveInpVarByObjectEx(), emonGetSlaveOutpVarByObjectEx()
- Add support for Codesys EtherCAT Master
- Improve hash table performance

Fixes

- Fix Kunbus TAP Curious support
- Fix invalid read in EC_COPYBITS at end of pbySrc
- Fix missing update of MonitorOD after slave address change

Platform

- Add support for emGetSlaveInpVarByObjectEx() and emGetSlaveOutVarByObjectEx() to RAS
- Add support for TI J721E to emllCPSWG
- Add emRasSrvSetLogParms()
- Add emllTap
- Add support for TI CPSWG AM6x and Jacinto 7 (j784s4) based on Enet LLD on FreeRTOS (emllTiEnetCp-swg)
- Add support for AMD Xilinx Vitis on FreeRTOS
- Add support for TI AM65x to emllCPSWG on Linux
- Add EC_LINKIOCTL_SET_MSECCOUNTERPTR to emllGEM

- Add emIIDW3504 for Xenomai3 ARM_64Bit
- Add support for EC_NOTIFY_CLIENTREGISTRATION_DROPPED, EC_NOTIFY_CYCCMD_WKC_ERROR, EC_NOTIFY*_INITCMD_WKC_ERROR, EC_NOTIFY_COE_MBXSNDR_WKC_ERROR, EC_NOTIFY_SLAVE_NOT_ADDRESSABLE, EC_NOTIFY*_ALL_DEVICES_OPERATIONAL to RAS client on PPC
- Add device IDs for I219LM and I219V
- Add support for emUnregisterClient(), EC_IOCTL_UNREGISTERCLIENT to RAS Client on PPC
- 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
- Add emIIRemote for Linux, Windows
- Fix OsWaitForEvent(..., dwTimeout) on RTOS-32
- Fix missing DLLs in EC-STA packages
- Fix dependency of compiled OsLayer to Sources/OsLayer on Windows
- Deactivate Filters in the NDIS driver
- Fix emCoeGetODList(), emCoeGetObjectDesc(), emCoeGetEntryDesc() for RAS Client on PPC
- Remove duplicate warning of missing PREEMPT RT patch on Linux
- Fix long timeout at RAS Client disconnection after socket shutdown
- Fix emNotifyApp() over RAS without emRegisterClient() at RAS Client
- Fix EcMbxGatewayClnt uploads not existing object for internal config slave cache
- Fix EcMbxGatewayClnt logging (EC_T_MBX_GATEWAY_CLNT_CONDESC::LogParms)
- Fix erroneously deregister client in RAS Server for previously dropped client
- Fix RAS Client EC_LOG_LEVEL_INFO_API logging

3.3 V3.2.1.02

Enhancement

- Add eEthTap_PortMirror
- Add emonTferSingleRawCmd to support register read via RAS
- Add swap data support
- Add application performance measurements to CSV output

Fixes

- Fix emonGetSlaveFixedAddr() for MASTER_SLAVE_ID
- Fix timing task CPU affinity

- Fix potential naming conflict of Expat library
- Fix crash if ENI contains no logical commands
- Fix missing refresh of EC_T_SLVSTATISTICS_DESC::wAIStatusCode
- Fix erroneous EC_NOTIFY_FRAME_RESPONSE_ERROR in case of mailbox repeating
- Fix emonBacktracePacketCapture in case of packet capture processing and job task paused
- Fix console logging freeze on RTOS-32 (regression since V3.1.4.05)
- Fix cycle time performance measurement is implemented in eUsrJob_SendAllCycFrames instead of eUsrJob_StartTask (regression since V3.1.2.03)
- Fix registered client lookup on notification
- Fix missing string termination in SDO value log message of DEFTYPE_VISIBLESTRING in CoeReadObjectDictionary() in examples
- Fix Master OD reading canceled at RX PDO mapping and TX PDO mapping in CoeReadObjectDictionary() in examples

Platform

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

3.4 V3.2.1.01

- Add pdwVersionType parameter to emonGetVersion()
- Add CopyInfo to EC_T_PROCESS_VAR_INFO
- Add EC_T_MONITOR_STATUS::eEthTapType
- Fix erroneous detection of RX frames as TX for Wireshark traces containing only RX frames.
- Change IPv4 parameter variables type from EC_T_DWORD to EC_T_IPADDR
- Add bRefreshSlavesStatistics parameter to emBadConnectionDetect()
- Remove legacy performance measurement APIs
- Rename RAS client and server to EcMonitorRasClient and EcMonitorRasServer
- Rename emPerfMeasInternal... to emPerfMeas...
- Fix crash in emonCoeSdoUpload if CoE storage and notification disabled
- Fix reentrancy of emInitMonitor() after emInitMonitor() was called with bad parameters

Platform

- Fix crash in EcLinkFreeRecvFrame for some link layers
- Add support for 64Bit DMA physical address on INtime6
- Add szLoadPath to EC_T_LINK_PARMs
- Add QNX SMMUMAN support
- Add support for Rockchip DW3504
- Add support for IRQ CPU affinity on Linux
- Add device IDs for Intel Pro/1000 (i8254x) I226
- Add support for Xilinx KR260 SGMII Port
- Fix INVALID_STATE in CEcWrapperDotNet::DeinitInstance() if started with MbxGatewaySrv
- Add support for SGMII on Marvell 88E1510 for Intel DW3504
- Fix DW3504 Rockchip Clocks and second Instance
- Fix EcatDrv to support KeTimer period < 16ms
- Fix emIIntelGbe EcLinkGetSpeed()

3.5 V3.2.0.03

- Add EC-Monitor QNX71 support
- Use default TaskId 0 if eUsrJob_StartTask called with EC_NULL
- EC_COPYBITS_INLINE declare EC_T_BYTE* pbySrc as const
- Add emReadSlaveRegister
- Fix IntelGbe EclinkOpen() faulty log messages
- Fix RAS protocol corruption in case of concurrent send requests at server
- Fix bit offset of process variables Inputs.DevicesState and Inputs.BusTime
- Fix crash in EC-Wrapper .NET if variable size exceeds 512 bytes
- Fix text translation crash in EC-Wrapper EtherCAT Network Monitoring

Platform

- Add Device ID for Intel Pro/1000 I82545EM Copper
- Fix occasional lock-up at stopping acceptor thread in emRasSrvStop(...)
- Update atemsys V1.4.25
 - Add IOCTL_INT_CPU_AFFINITY
 - Add Device Tree Ethernet driver support for RockChip

3.6 V3.2.0.02

- Prolong Eval time limit from 10 to 30 minutes
- Enhance frame direction detection
- Add pcap file name support to EcMonitorDemo
- Add “-maxbusslaves” parameter to examples
- Fix frame processing in case of all RX frames missing
- Fix incomplete wireshark trace recordings
- Fix value distribution for min and max bin in performance measurement histogram
- Remove systematical delay of 250ms within emConfigLoad(), emConfigureMaster(), emConfigExtend(), emDeinitMaster(), emRescueScan(), emSelfTestScan()
- Fix crash in case of multiple cyclic entry ENI

Platform

- Microsoft® Windows® Visual Studio® project files updated to VS2015
- Add EC_T_LINK_PARMS::dwLinkSpeed
- Add support for STM32MP135 to DW3504
- Add support for ecatNotifyApp() from RAS Server application to RAS Client application
- Change connection type from UDP to TCP for emIIPProxy
- Fix memory leak in RAS Client if connection lost while EoE-Endpoint active
- Fix EC_COPYBITS out-of-bounds read from pbySrc
- Update atemsys V1.4.24
- Fix PCI bars
- Add Device Tree Ethernet driver support for STM32mp135

3.7 V3.2.0.01

- Change EC-Monitor API Prefix from “em” to “emon”
- Add IstStackSize to all Linklayers parameters
- Change Mutex default setting for Linux

Platform

- 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 > EtherCAT Network Monitoring use old mapping with ATEMSYS_LEGACY_DMA=1 define or activate new mapping with ATEMSYS_LEGACY_DMA=0 define for older kernel

3.8 V3.1.4.06

- Add emStartLivePacketCapture to EcMonitorDemo
- Add support for fragmented CoE SDO Info mailbox transfers
- Fix read multiple *.pcap files
- Fix frame type (cyclic/acyclic) detection if cyclic frame contains NOP commands
- Fix rebuild topology from bus scan failed in packet capture processing mode
- Add emNotify - eMbxTferType_COE_GETODLIST
- Add slave station address to EC_T_COE_ENTRYDESC, EC_T_COE_OBDESC and EC_T_COE_ODLIST
- Add frame response error type eRespErr_CRC
- Remove BlockNode handling from CEmNotification
- Fix slave information prints contain “ERROR: Not found” in examples
- Fix crash in case of invalid ENI containing a hot connect group head slave with physical address equal to zero
- Increase log buffer in examples

Platform

- Force disconnection using PHY loopback for emII8254x if ResetOnDisconnect not set
- Add support for emII8254x on AM64xEVM with FreeRTOS
- Add emII8254x 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
- Add support for emII8254x on Xilinx Kria KR260
- Fix missing ATEMRAS_NOTIFY_CONNECTION EMRAS_EVT_SERVERSTOPPED on connection termination by server
- Fix TX hang in emII8254x 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

3.9 V3.1.4.05

- Add histogram export to examples
- Fix no messages in error log if NOPRINTF defined

Platform

- 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 semaphore initialization error

3.10 V3.1.4.04

- Add Hilscher netANALYZER Ethernet TAP support
- Enhance Live Packet Capture
- Add emNotify - eMbxTferType_COE_GETENTRYDESC

Platform

- Add support for VxWorks70

3.11 V3.1.4.03

- Add packet capture processing command line option “-play”
- Add “-oem” command line parameter to examples
- Fix FoE monitoring in Bootstrap
- Extend pcap file format support (nanosecond pcap)
- Add FoE monitoring support
- Add interrupt support

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

3.12 V3.1.4.02

- Add emGetSlaveInfo
- Add performance measurement level to -perf command line parameter
- Add emGetMemoryUsage over RAS
- Fix topology after reconnect/restart/communication timeout
- Fix EC_NOTIFY_TAP_LINK_STATUS in interrupt mode
- Fix CoE response and abort handling
- Fix blocking API handling over RAS

Platform

- Add MAC protection to emIIFslFec for i.MX8 and i.MX8m
- Fix CPSW transmit channels to work with acontis CPSW Linux driver patch
- Fix command line contains unexpected application name in RTOS-32 config files

3.13 V3.1.4.01

- Add notifications:
 - EC_NOTIFY_PDIWATCHDOG
 - EC_NOTIFY_STATUS_SLAVE_ERROR
 - EC_NOTIFY_SLAVE_ERROR_STATUS_INFO
 - EC_NOTIFY_SLAVE_STATECHANGED
 - EC_NOTIFY_CYCCMD_WKC_ERROR
- Fix bus load average 0 in case of Monitor and Master run with different cycle times
- Fix unfilled MbxData after emCoeGetODList
- Don't call OsMeasCalibrate() if performance measurement is disabled
- Rename PerfMeas distances to offsets

Platform

- Fix i8254x interrupt mode on ARM/AARCH64
- 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

3.14 V3.1.3.03

- Add EC_T_MASTER_INFO::dwMasterStateSummary
- EC_T_MASTER_INFO::BusDiagnosisInfo data available even if compiled with EXCLUDE_MASTER_OBD
- Add EC_IOCTL_SET_NOTIFICATION_ENABLED and EC_IOCTL_GET_NOTIFICATION_ENABLED
- Add MasterSyncUnit support
- Fix interrupt mode support

- Add EC_T_PACKETCAPTURE_PARMS::bReadMultipleFiles for emOpenPacketCapture()
- Cycle time and JOB_Total timer missing in EcSimulator 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

3.15 V3.1.3.02

- Support ENI file with CU2508 only
- Add support for emCoeGetODList
- Add EC_T_MONITOR_STATUS::bNextCyclicEntryReceived, rename EC_T_MONITOR_STATUS::bFramesInLinkLayerPen to bNextFramesReceived
- Add EC_NOTIFY_SB_STATUS, EC_NOTIFY_SB_MISMATCH
- Fix build topology immediately in packet capture processing mode
- Add process data input mapping for Inputs.BusTime and Inputs.DevicesState

Platform

- Add RTL8168H support to emIIRTL8169
- Fix DMA buffer alignment in emIIRTL8169 (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)
- Add RTL8125 support to emIIRTL8169
- 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

3.16 V3.1.3.01

- Add the InitMonitor parameter dwMbxRecordBufferSize to specify a buffer size for Mailbox recordings
- Fix crash on Xenomai when recording a Coe Object dictionary

3.17 V3.1.2.11

- Fix unset eMbxTferType in COE SDO upload notification when using emCoeSdoUploadReq
- Add EC_NOTIFY_COMMUNICATION_TIMEOUT and EC_NOTIFY_TAP_LINK_STATUS
- Add EC_T_MONITOR_INIT_PARAMS::bApiLockByApp
- Add WKC State Support

3.18 V3.1.2.10

- Extend EC_T_FRAME_RSPERR_DESC with wCycFrameNum and dwTaskId
- Fix emGetBusSlaveInfo returns EC_E_NOTFOUND if called with autoinc addressing for some hot-connect configurations

3.19 V3.1.2.09

- Fix CoE Emergency notification
- Fix high CPU load in eUsrJob_MasterTimer
- Fix emGetSlaveState in case of slave is not present

3.20 V3.1.2.08

- Enhance Hot-Connect support to detect groups on master start-up
- Add EC_NOTIFY_MBOXRCV notification for emCoeSdoUploadReq
- Add API emHCGetSlaveIdsOfGroup and emHCGetNumGroupMembers
- Store eMbxTferType_COE_SDO_DOWNLOAD and eMbxTferType_COE_SDO_UPLOAD in object dictionary accessible through emCoeSdoUpload

3.21 V3.1.2.07

- Add EC_NOTIFY_MBOXRCV for eMbxTferType_COE_SDO_DOWNLOAD and eMbxTferType_COE_SDO_UPLOAD
- Enable jumbo frame support for i8254x by default
- Enhance Hot-Connect support to detect connection and disconnection of Hot-Connect groups
- Enhance cycle/frame loss detection in states INIT, PREOP and during transitions

3.22 V3.1.2.06

- Fix cycle/frame loss detection for cyclic tasks with more than one frame
- emGetSlaveState returns the current and requested state accordingly to AL-Control, AL-Status respectively

3.23 V3.1.2.05

- Add PCAP file format support for “Nokia tcpdump” and “Modified tcpdump”
- Fix Object 0x2001 “Master State Summary”, Bit 10: Bus Scan Match and Bit 16: Link Up
- Add PCAPNG file format support
- Add position independent ethernet tap support
- Fix link status after emInitMonitor

3.24 V3.1.2.04

- Fix emGetMonitorParms

3.25 V3.1.2.03

- Add EC_IOCTL_GET_CYCLIC_CONFIG_INFO, EC_IOCTL_IS_SLAVETOSLAVE_COMM_CONFIGURED, EC_IOCTL_CLR_SLVSTATISTICS
- Fix emGetSlaveInpVarInfoEx, emGetSlaveOutpVarInfoEx
- Add QNX7 support
- Add basic hot connect topologies support

3.26 V3.1.2.02

- Add emIsSlavePresent, EC_IOCTL_ISLINK_CONNECTED, EC_IOCTL_GET_LINKLAYER_MODE
- Fix performance measurement in EcMonitorDemo
- Fix invisible slave handling
- Add Xenomai3 support
- Add emGetMonitorStatus
- Add emBacktracePacketCapture

3.27 V3.1.2.01

- Change emOpenPacketCapture parameter set
- Add emStartLivePacketCapture, emStopLivePacketCapture
- EcMonitorDemo exclude EcDaq dependency
- Add Object 0x2200 “Bus Load” support
- Fix Object 0x2002:03 “Bus Diagnosis”

3.28 V3.1.1.07

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

3.29 V3.1.1.06

- Initial release of EC-Monitor