KPA EtherCAT Slave

Software stack for device development facilitation

KPA EtherCAT Slave is a software stack, which is developed to run on microcontrollers, CPUs, or DSPs with or without any operating system (OS) and is especially designed to minimize time to market for companies that want to be a part of dynamically increasing EtherCAT market.

Benefits and key features

- **Meets EtherCAT standards**

  KPA EtherCAT Slave stack supports all features defined in EtherCAT standards. Each new version of the stack is verified with the latest released and all internal versions of the EtherCAT Conformance Test Tool (CTT) due to koenig-pa GmbH is a member of Technical Working Group Conformance.

- **Portability**

  KPA EtherCAT Slave stack may be presented as a software stack with embedded Hardware Abstraction Layer (typically implemented through OSAL and driver part), which can be used for simple support of any EtherCAT ASIC and communication interface (PDI) between ASIC and a microcontroller.

- **Optimized memory usage for embedded platforms**

  Used RAM size depends on application design and the size of the Object Dictionary (OD). For example, in case of static OD usage (a build based on source code):

  RAM size:
  - >= 3 KB for Basic package
  - >= 8KB for Standard package

  ROM (flash) size:
  - >= 55 KB for Basic package
  - >= 64 KB for Standard package

  Moreover, to minimize a final size of the application, KPA EtherCAT Slave stack may be customized by editing the configuration file, for example, it is possible to deactivate Mailbox EoE, Mailbox VoE and Mailbox FoE.

- **Support**

  In comparison with non-commercial or open source EtherCAT slave stacks, koenig-pa GmbH offers support for 1 year.

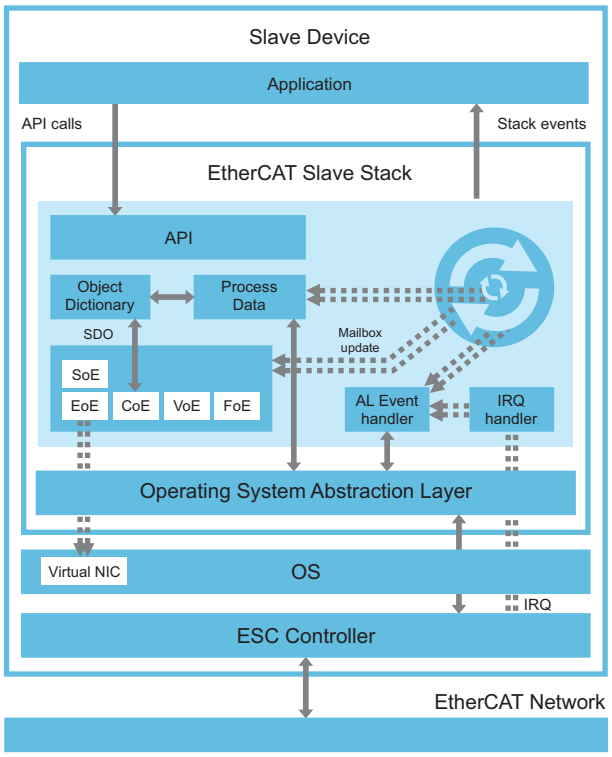
Feature packages

Standard

- Mailbox protocols: CoE, EoE, FoE, SoE, VoE
- Runtime generation and changing of the OD
- Adapted to operating system by using Operating System Abstraction Layer (OSAL)
- Virtual Ethernet card support for EoE (depending on OS)

Basic

- Mailbox protocol: CoE
- Static OD with pointer given from application
- With or without Interrupt Service Routines (ISR)



An EtherCAT Slave stack package may include a set of ready solutions for specific platforms and operating systems, such as:

Platforms:

- XMC4800 (Infineon)
- Microblaze (Xilinx)
- Sitara AM335x with ESC PRU (Texas Instruments)
- C2000 (Texas Instruments)
- STM32 (ST)
- NIOS II (Intel FPGA/Altera)

Operating systems:

- Linux (with/without RT-Preemption patch)
- Linux + Xenomai
- QNX
- No OS

Custom Development

koenig-pa GmbH offers specific software development for customers who require additional support for integrating EtherCAT capabilities into their applications or solutions.

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