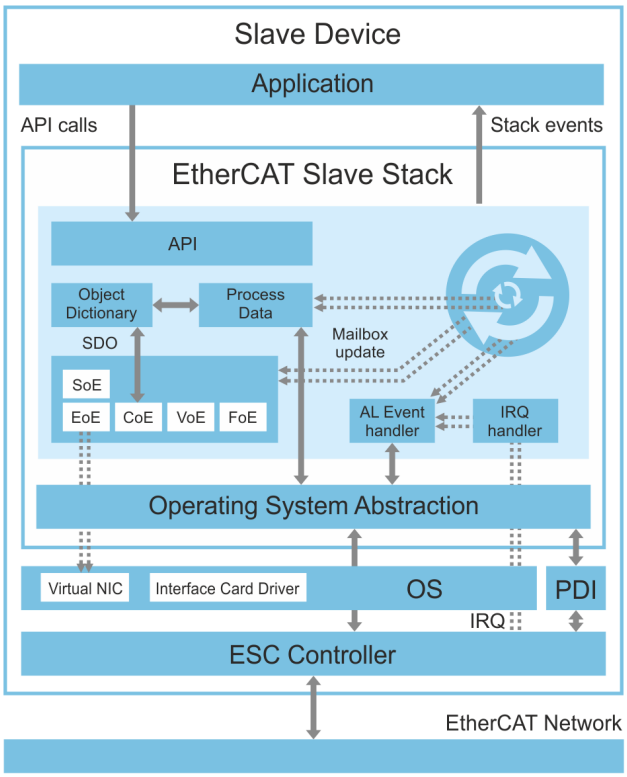
KPA EtherCAT Slave Stack 2

KPA EtherCAT Slave Stack 2 is a software stack designed to run on microcontrollers, CPUs or DSPs with or without any Operating System (OS). It is provided as a source code in the Slave Stack 2 Development Kit (SSDK 2) package.

Key Features

- Verified with EtherCAT Conformance Test Tool (CTT)
- Code written in "ANSI C"
- Small footprint for 8 and 16 Bit microcontrollers:
  - LP-AM243 (Texas Instruments)
  - XMC4800 (Infineon)
  - FC1100 PCI EtherCAT card (Beckhoff)
- Depending on size of Object Dictionary and Process Image:
  - RAM size depends on size of Object Dictionary (OD): for static OD >= 3 KB Basic (8 KB Standard)
  - ROM (flash) >= 55 KB Basic (64 KB Standard)
- Various PDI usage (see samples in SSDK 2)



Interfaces

- Compatible with various EtherCAT Slave Controllers (ESC), including Beckhoff (ASIC, IP core) and TI (PRU)
- IRQ handling of hardware events
- Polling of Mailbox and Process / Service Data

- Supported operating systems:
  - FreeRTOS
  - Linux (with/without RT-Preemption patch)
  - OS-less
- Hardware Abstraction Layer instead of separate “defines”

KPA EtherCAT Slave Stack 2 advantages

Feature	KPA EtherCAT Slave Stack 2
Number of supported I/O SMs	Not limited in the stack
Process Images processing	API functions for data exchange between Process Images and objects (usually call of one function is enough)
Object Dictionary creation	Creation in application code or loading from an standard OD.xm
Binding objects with variables	Each object’s entry can be bound with individual variable (by its pointer)
CoE object parameters	All parameters are supported, the processing is implemented in the stack
Mapping flexibility	No difference for user between fixing and not fixing mapping
CoE SDO processing	Full support in the stack (including complete access, segmented transfer, etc.)
Slave stack usage simplicity	Slave application using KPA API is clear and transparent
SDO and state-change events	Callbacks for SDO and state change events are supported and can be set/removed at runtime
Slave stack library	Thanks to Operating System Abstraction Layer (OSAL) slave stack is ported in to many OSes and EtherCAT slave core is cross platform and by design support big and little endian as well as 8/16/32/64 bit CPUs
Ethernet tunneling	EoE with Ethernet routing and packet tunneling is available as part of OSAL for certain OS platforms

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