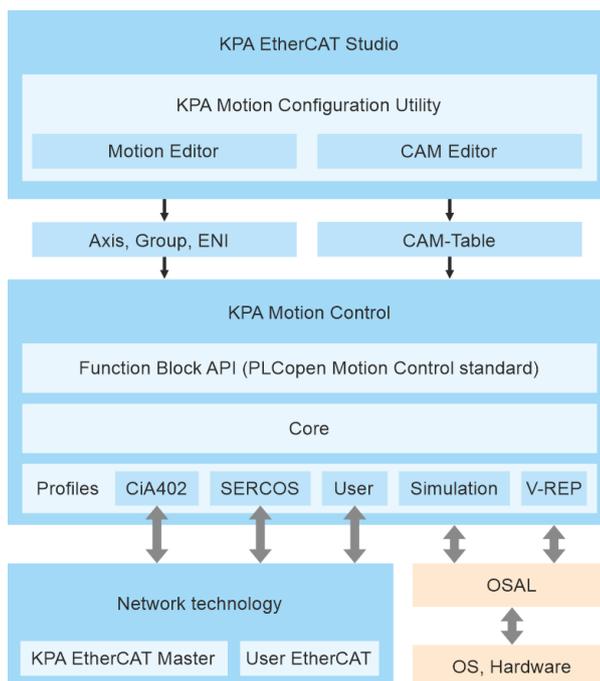# KPA Motion Control Development Kit

KPA Motion Control Development Kit (MoDK) enables the development of linear and coordinated motion applications for a hardware class on a specific OS.

INtime   Linux   QNX   Windows

Introduction

Library for single- and multiple- axes control applicable in CNC solutions in terms of PLCopen Motion Control standard.

KPA Motion Control integration package (MoIP)

- MDK included (see MDK flyer for details)
- KPA Motion Control "C/C++ API"
- Operation System Abstraction Layer (OSAL) (optionally in source code)
- Process filed bus Abstraction Layer (BUSAL) supporting CiA402, SERCOS, V-REP and simulation (optionally in source code)
- More than 20 samples in source code and documents:
    ◦ KPA Motion Control architecture, white paper
    ◦ MoDK manuals, programmers guide
    ◦ API (Application Programming Interface) help

KPA Motion Control Runtime package (MoRT) with licenses

- Binaries and user manuals (development manuals included in MoIP)
- 2x KPA EtherCAT Master Standard Licenses (ETG 1500 "class A" master); 1x CoM and 10x LiM each
- 1x KPA EtherCAT Master Full (ETG 1500 "class A" including all FP and Extensions); 1x CoM and 10x LiM

KPA EtherCAT Studio executables

- KPA EtherCAT Studio Premium run-time including all plug-ins and user manuals for configuration and diagnostics of EtherCAT® networks
- KPA Motion Configuration Utility
- 1x KPA EtherCAT Studio license

MDK/MoDK Tutorials

- How to use KPA EtherCAT Master for selected OS
- How to use KPA EtherCAT Studio with Master for selected OS
- How to configure EtherCAT network, DC, modules and other specifics

Simulation V-REP

Virtual robot experimentation platform

- V-REP Viewer
- V-REP few sample models (further models are offered as service)

Support and Maintenance (S&M)

- Technical support and updates of KPA Motion Control and KPA EtherCAT Master/Studio for selected OS with access to Build Portal and Ticket System for one year
- Prolongation on annual base upon request

Runtime Software

KPA Motion Control Libraries

- Trajectory generated online in one cycle
- Instantaneous reaction on events
- Jerk limited using spline interpolation
- No transition (blending) window
- Cyclic synchronous position mode (no stop)
- Feed forward control of velocity and torque

Linear Motion (LiM)

Applications: single axis drive control, e.g. pressing, drilling. Functionality:

- Linear Movement of single axis
- Program Coordinate System (PCS)
- Requirement: KPA EtherCAT Master Standard 1.6 or higher

Coordinated Motion (CoM)

Applications examples: bending, welding, drilling, milling. Functionality:

- All LiM functionalities
- Multi-axes servo drive control with coordinated X, Y, Z axes

- Instantaneous transformations between PCS, MCS and ACS for 2D, 3D applications
- Coordinated motion in cylinder and polar coordinates
- Circular and helical motions

Requirement: KPA EtherCAT Master Standard 1.6 or higher

KPA Motion Configuration Utility

Plugin to KPA EtherCAT Studio with two function groups:

- Offline configuring
  Grouping of axes, selection of drive profiles, setting of parameters, and mapping to process image.
- Online test
  Controls with command and status for moving, homing and jogging.

Requirement: KPA EtherCAT Studio Premium Version 2.0 or higher.

Comparison of MoDK and MoDK trial

Item	Criteria	MoDK	MoDK trial
	Purpose	**Development**	**Evaluation**
1	Motion Control Integration Package (MoIP)	Yes	Yes
2	MoDK Tutorials	Yes	Yes
3	Runtime licenses (MoRT)	3[1]	Trial[2]
4	KPA EtherCAT Studio License	Premium unlimited	Premium 3 months
5	Support & Maintenance[3]	1 year	Startup support
6	Optional Build portal for OS	1 year	3 months

[1]1x Full license and 2x Standard license.
[2]Trial Master works for one hour in OPERATIONAL and cannot be licensed.
[3]S&M-conditions you can find at our customer portal area.

MoDK and MoDK Trial are available through Customer portal and by contacting Sales: sales@koenig-pa.de.