KINGSTAR's EtherCAT Master Simplifies and Supports EtherCAT Network Configuration and Development
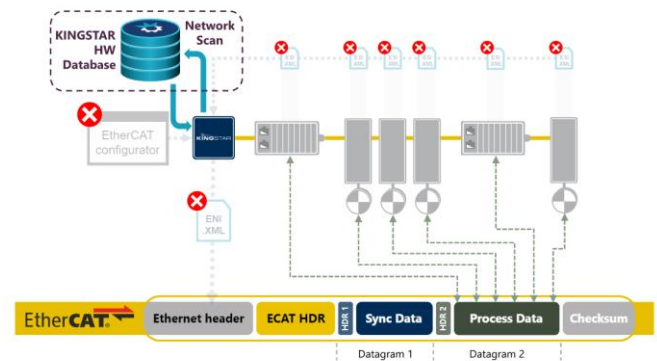
KINGSTAR powered by EtherCAT provides support for CANopen over EtherCAT and simplified configuration of EtherCAT networks. Using the powerful RTX64 runtime from IntervalZero that transforms Windows into a real-time operating system (RTOS), the system delivers the highest precision and deterministic performance. The distinguishing and unmatched features are auto-discovery and auto-configuration that deliver the only "plug-and-play" capability in the industry.

Plug-and-Play EtherCAT Master Features:

- Auto-Discovery & Auto-configuration deliver true plug-and-play for EtherCAT Servos and I/Os
- Configuration, Diagnostic, Analysis and ESI Import
- Support all Class A features (FoE, EoE…)
- C/C++ API
- Process implementation approach supports debugging while EtherCAT master is running.
- Multiple Master instances
- Hot connect
- Cable redundancy
- High speed options down to 100 us time cycle
- Motion and Software PLC options
- Support for Multiple IDEs
    - Visual Studio, QT, LabView, and more

Auto-Configuration Overview

- Automatically identifies modules at startup
- Starts devices and records variables in packet
- KINGSTAR applications can access variables without knowing location or how to enable them

KINGSTAR Is the Foundation for Machine Automation:

CANopen Over EtherCAT Support
Replace proprietary network protocol and I/O hardware with PC NIC and Ethernet cabling.

Auto-Configuration
Utilize a single configuration environment with pre-integrated EtherCAT servo drives and I/O devices for plug-and-play compatibility.

Hard Real-Time Determinism
Use IntervalZero's RTX64 hard real-time SMP aware subsystem for determinism on Windows.

User Interface
Create a powerful UIs with Windows Interface (HMI).

Single Development Environment
Develop Visual Studio custom applications using managed code .NET framework, native Windows, or RTX64 libraries in C or C++.
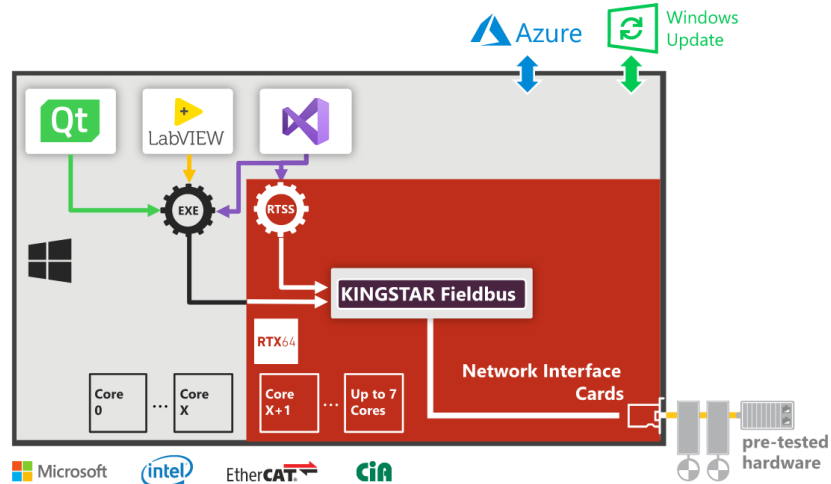
SDK & Libraries
Leverage robust libraries that deliver functionality for EtherCAT, servo and I/O modules, motion and trajectory, electronic CAM, and PLC ladder logic.

Standalone Controller
Consolidate, run and synchronize multiple independent systems, across multiple core, on a Windows and RTX64 processor system.

Integrate software of your choosing to create customized, real-time, high-precision applications.
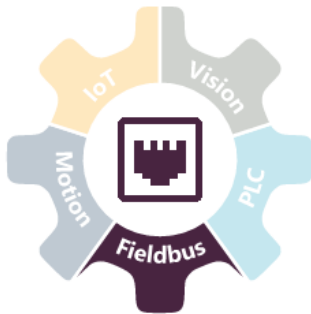

KINGSTAR Architecture

Benefits of KINGSTAR

REDUCE COSTS
Replace Hardware with software to reduce machine control costs by 25-50%

SPEED TIME-TO-MARKET
Improve productivity with pre-integrated motion libraries and EtherCAT auto-configuration

IMPROVE UX
Build a powerful UI with a world-class Windows Interface (HMI).

ENHANCE PERFORMANCE
Improve performance and control by using the PC NIC, Ethernet cables and EtherCAT infrastructure.

EXTEND EASILY
Add any 3rd party protocols or open-source libraries with no vendor lock-in

SCALE DYNAMICALLY
Auto-configure an EtherCAT network when swapping any servo drives and I/o devices

KINGSTAR Powered by EtherCAT Part of KINGSTAR Machine Automation Software

The KINGSTAR Machine Automation Software is an open and standards-based platform specially designed to support machine builders who need to design individual machine controllers or integrate multiple controllers that demand real-time, deterministic precision. The open approach allows KINGSTAR to delivers on the full promise of Industry 4.0 & IoT.