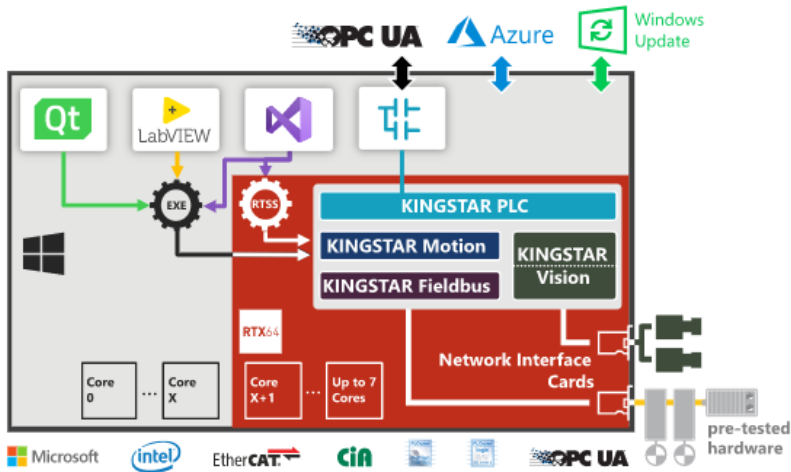# Complete "Plug-and-Play" EtherCAT-based Software Platform for Real-Time, PC-Based Motion Control & Vision

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 onto a single IPC that demand real-time, deterministic precision.   The open, plug-n-play approach allows engineers to build smarter machine controllers that protect their intellectual property, address their current market needs and deliver on the full promise of Industry 4.0 & IoT.



**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-discovery and 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 Machine Automation Software Components

## KINGSTAR Fieldbus powered by EtherCAT
Integrate custom motion control on an auto-configured EtherCAT network for any EtherCAT servo or I/O device

## KINGSTAR Motion
Deliver superior quality with pre-integrated and tested motion libraries that provide precision motion positioning performance

## KINGSTAR Software PLC
Powered by AXEL, monitor app management and deployment from an intuitive HMI on an industrial PC

## KINGSTAR Vision
KINGSTAR Vision is a real-time GigE Vision® stack. Develop vision-directed motion control apps using OpenCV (open-source libraries) on a Windows PC.

## IntervalZero RTX64
Replace hardware FPGAs & DSPs with software that transforms 64-bit Windows into a real-time OS
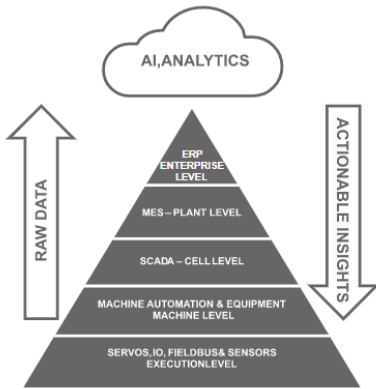
## KINGSTAR IoT Partnerships
Partnerships and Windows deliver IoT-ready connectivity and best options for addressing Industry 4.0 requirements.
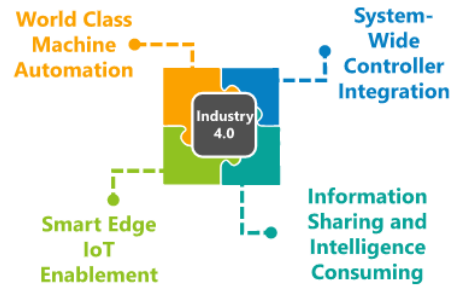
# Get ready for Industry 4.0 and IoT while delivering more value to the business faster AND maintaining control of your machine

With Industry 4.0 is reshaping manufacturing in the same way that Amazon transformed retailing, the main goal of Industry 4.0 is to collect, digitize, and share all automation information generated by every manufacturing component and machine so, collectively, the manufacturing ecosystem or factory performs optimally in the information pyramid.



Real success is achieved by analyzing this information to discover actionable insights that come in the form of corrective action or operational streamlining, which can be continuously implemented in a smart factory setting to become more competitive

As a result, machine builders must deliver a smart machine controller that can support more than just motion control; the smart controller must include this diverse set of features and capabilities to ensure that the machine can play its vital role in a smart factory pyramid



KINGSTAR is committed to open standards (Windows, RTX64 RTOS, EtherCAT, IEC61131-3, OPC-UA) which protects our customers' investment and to capitalizing on those standards to free machine builders from dependence on any hardware vendor through features like Plug- n-Play EtherCAT

KINGSTAR allows machine builders to develop their controller in their preferred language without retraining so teams team can create a controller using C, C++, .Net or PLC Languages and supports access through many IDEs



# KINGSTAR Product Features

## KINGSTAR Motion
- Enables coordinated motion at 125 microsecond intervals
- Up to 3 cores for dedicated motion control
- Machine control API for real-time precision

## KINGSTAR Fieldbus powered by EtherCAT
- Enables coordinated motion at 125 microsecond intervals
- Up to 3 cores for dedicated motion control
- Plug and play Integration with EtherCAT Servo and I/O

## KINGSTAR Software PLC
- Transform your industrial PC into a PLC with an intuitive HMI
- Handle all motion control and machine vision automation tasks
- Consolidate and manage multiple controllers on a single IPC

## KINGSTAR Vision
- Perform image capture, processing and analysis using GigE
- Run OpenCV natively on IntervalZero's RTX64 RTOS

## KINGSTAR IntervalZero RTOS
- Conduct real-time application processing up to 63 cores on a PC
- Scale up with x86/x64 to create next-gen products
- Up to 128 priorities for thread scheduling
- Full control over process load balancing
- Double performance every 18 month

## KINGSTAR IoT Partnerships
- Capitalize on Windows tools, cloud
- Scale up with x86/x64 to create next-gen products