

OMRON

# SYSMAC

always in control

Machining Automation Control platform



Sysmac M Machine Automation System, 6PS 2012

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**OMRON**

**Fast, Fast, Fast**

**Fast to DESIGN**

**Fast to TEST**

**Fast to CONTROL**



**LOGIC**

**MOTION**

**VISION**

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# One Automation Platform

The next generation in machine control

Fast and accurate controllers, one machine network for the entire machine and a completely new integrated software.



**NJ Machine Automation Controller**

**Sysmac Studio Automation Software**



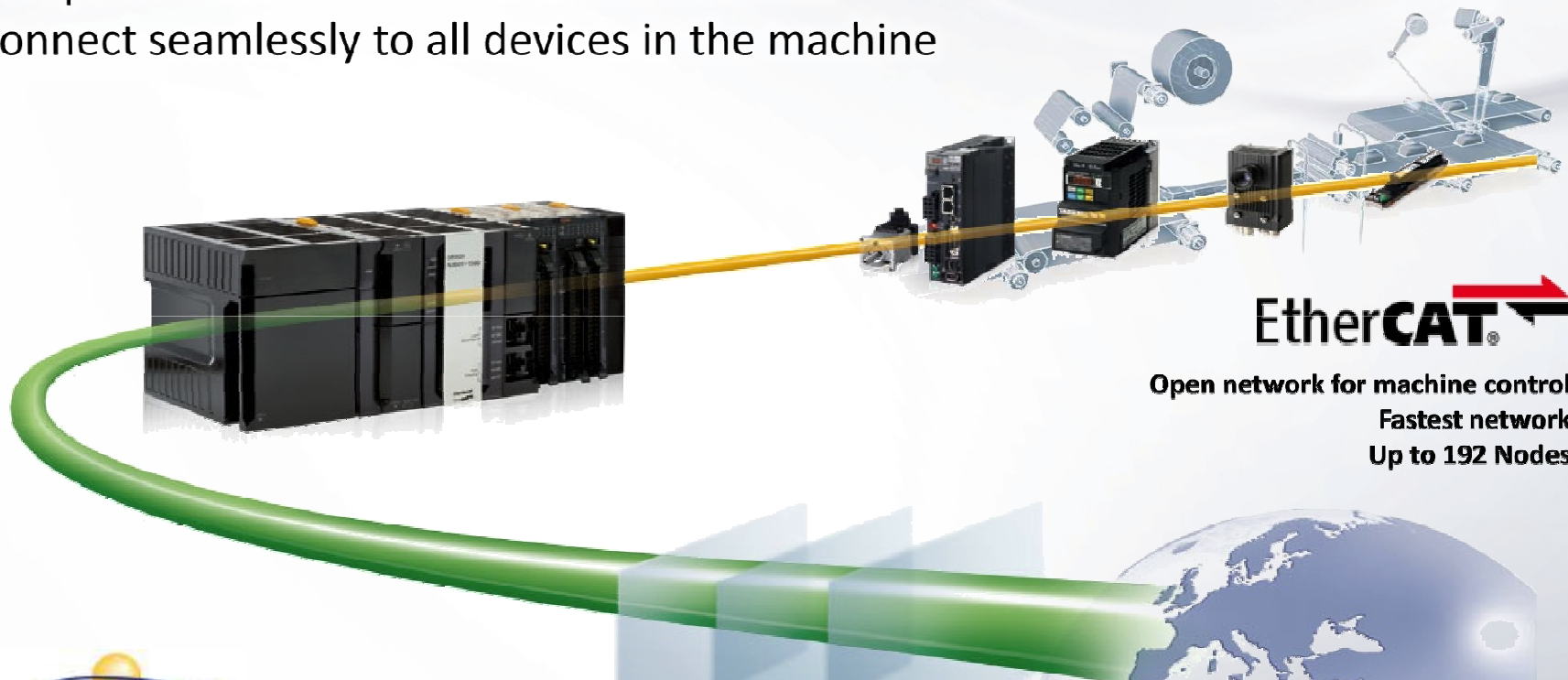


## One Connection

Fastest connection to any device

An open industrial Ethernet-based network

Connect seamlessly to all devices in the machine



**EtherCAT** 

Open network for machine control

Fastest network

Up to 192 Nodes



Open Network for Information and Communication





# NJ Series

Machine Automation Controller



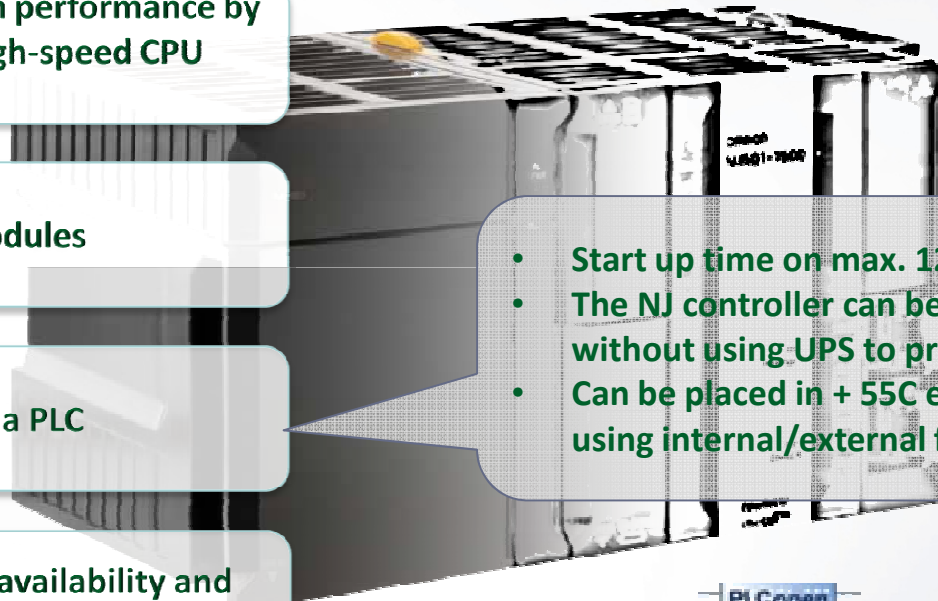
## NJ Series

Ultra-high-speed operation performance by employing cutting-edge high-speed CPU

PLC & Motion software modules

Reliability & robustness of a PLC

Omron guarantee 7 years availability and 10 years production



- Start up time on max. 12 sec.
- The NJ controller can be without using UPS to provide sufficient time,
- Can be placed in + 55C environment using internal/external fan cooling.



PLCopen motion function blocks

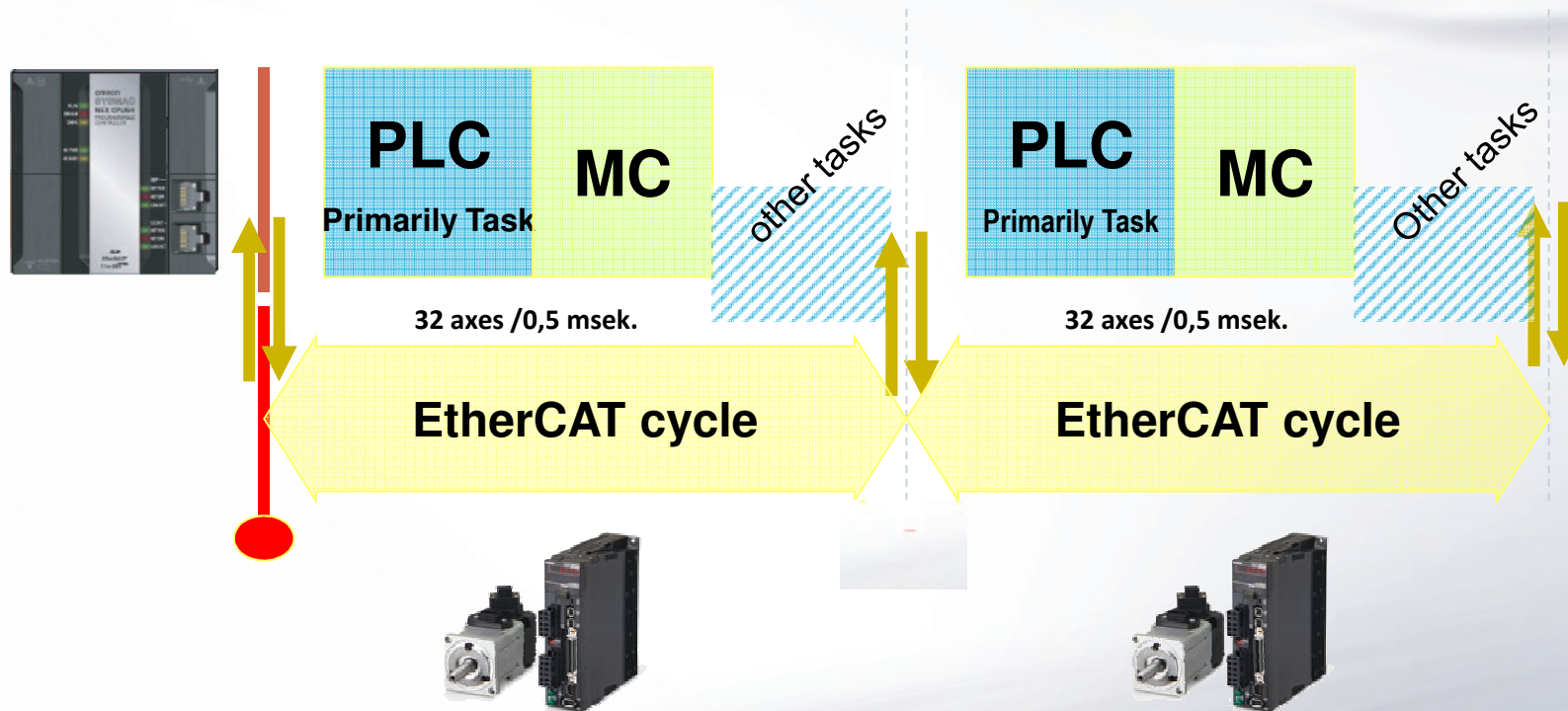


IEC 61131-3 compliant



# The outstanding performance

The programs in the NJ controller are perfectly synchronised with the EtherCAT cycle





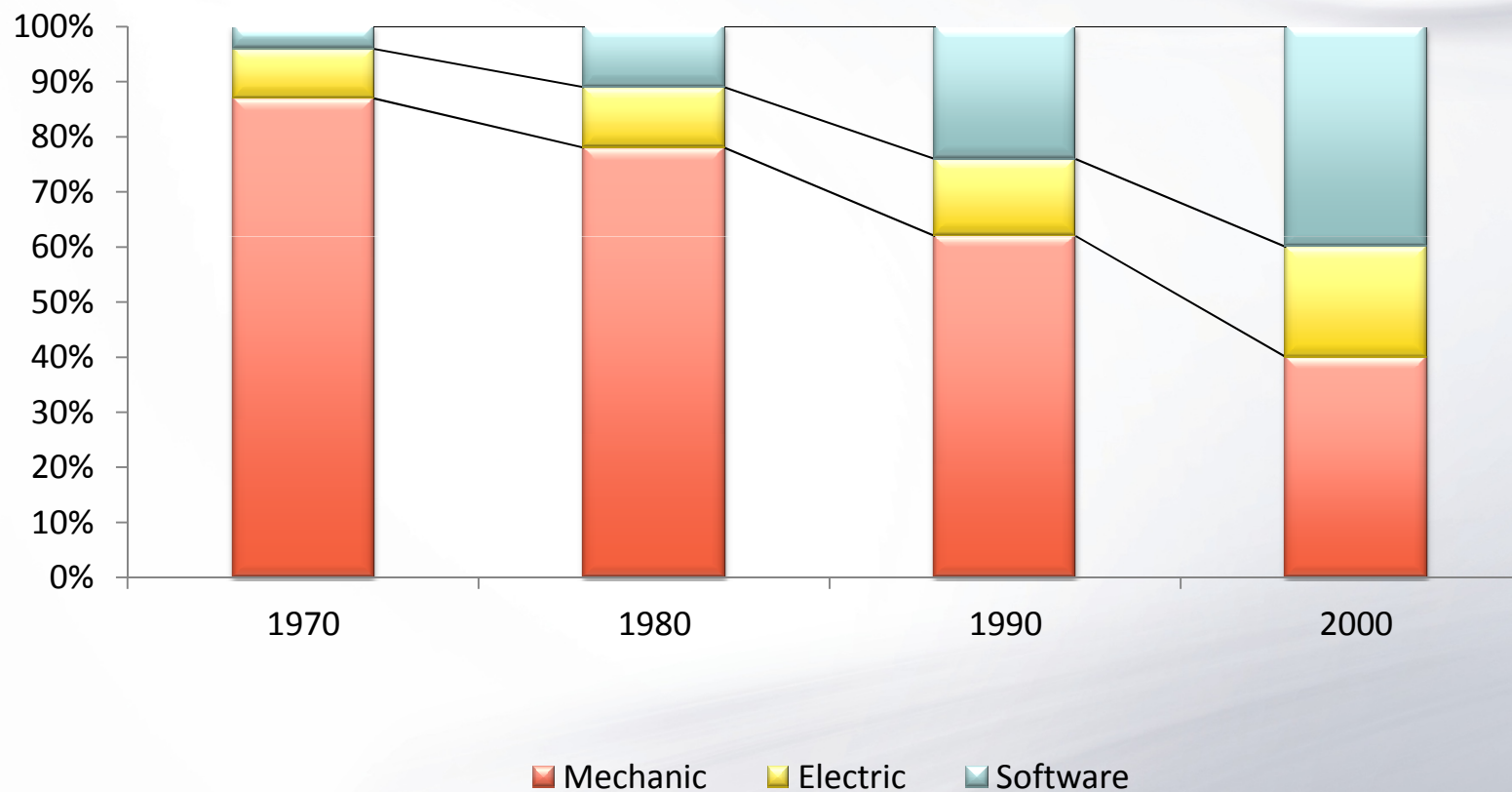
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# Sysmac Studio

One Automation Software



## Software cost in procent of the total project costs (source: McKinsey)

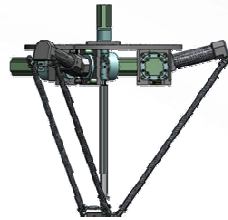


# Scope of one software

**Sensors**  
Fiber



**Robots**  
Delta



**Servos**  
Accurax G5



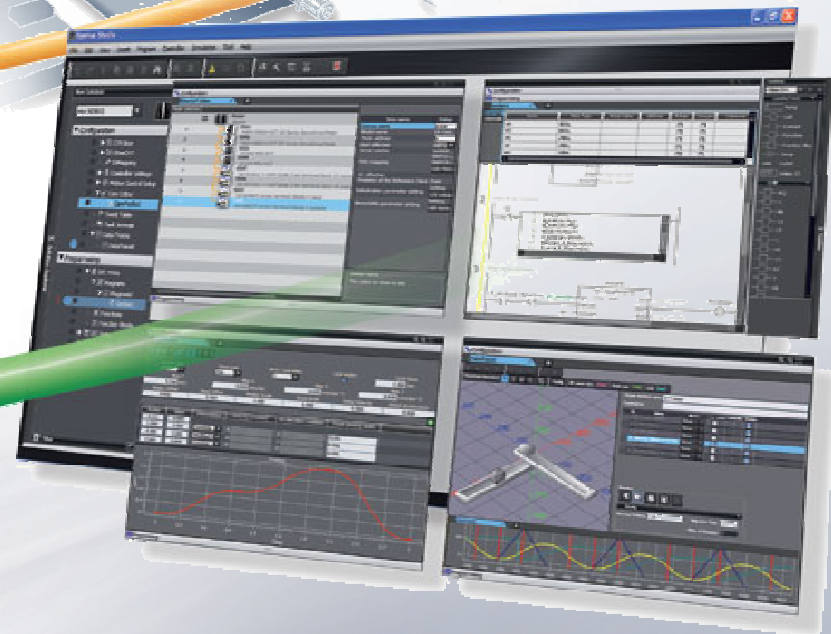
**Inverters**  
RX, MX2



**I/O and safety**



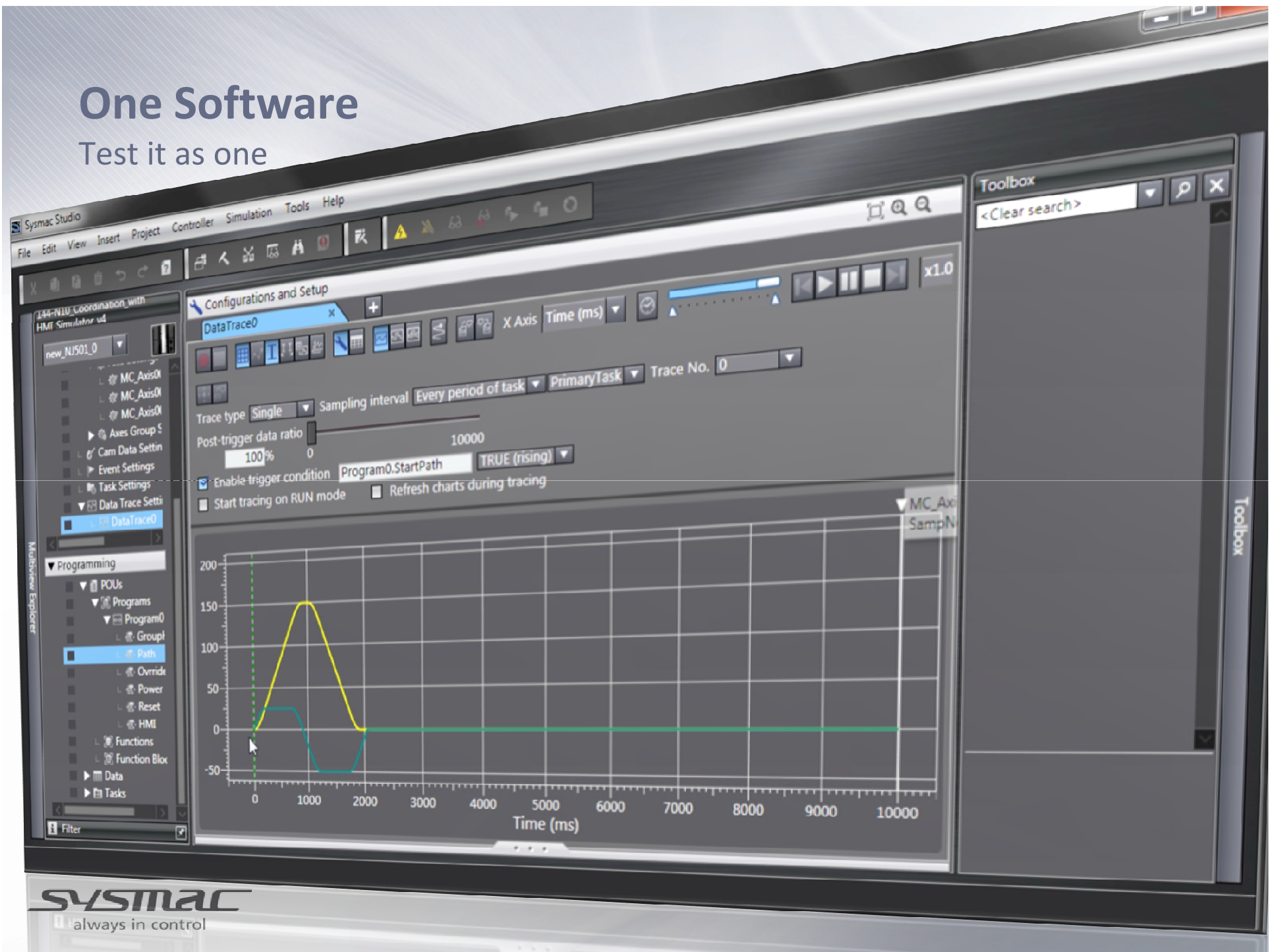
**Vision**  
FQM





# One Software

Test it as one



# The Sysmac Family

More than just a controller



## Inverters and Servos

### MX2 & RX inverters

- Proven technology
- with EtherCAT option
- up to 132 kW



### G5

- Powerful servo
- Proven technology
- Small and with EtherCAT embedded
- With linear motor support
- Up to 15kW





## Vision & Sensors

The Unique Offering.

### FQ-M

- Compact integrated (Camera+controller) Vision system
- Designed for pick and place applications
- EtherCAT embedded
- Encoder input for tracking



### E3X-ECT

- Fiber optic EtherCAT interface
- Connection of up to 30 E3X-HD Fiber Amplifiers
- Only one power supply connection
- Read Detection level, execute tuning and change setting by EtherCAT master



## Distributed I/Os

An extensive line up of digital / analogue I/O terminals and encoder input terminals are available for EtherCAT connectivity.

### **NX-I/O series**

- Digital, analogue and encoder I/O units
- Removable I/O terminal
- Integrated Safety



## Integrated Robot/Kinematic

- Motion, PLC, Robotics and Vision.....ALL in ONE!
  - Control of up to 8 Delta-3 robots by using one controller.
  - High through-put by using the Delta robots, up to 200 cycle/min per robot.
  - Integrated vision system.





## Integrated Robot/Vision



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## Integrated Robot/Vision



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## Integrated Robot

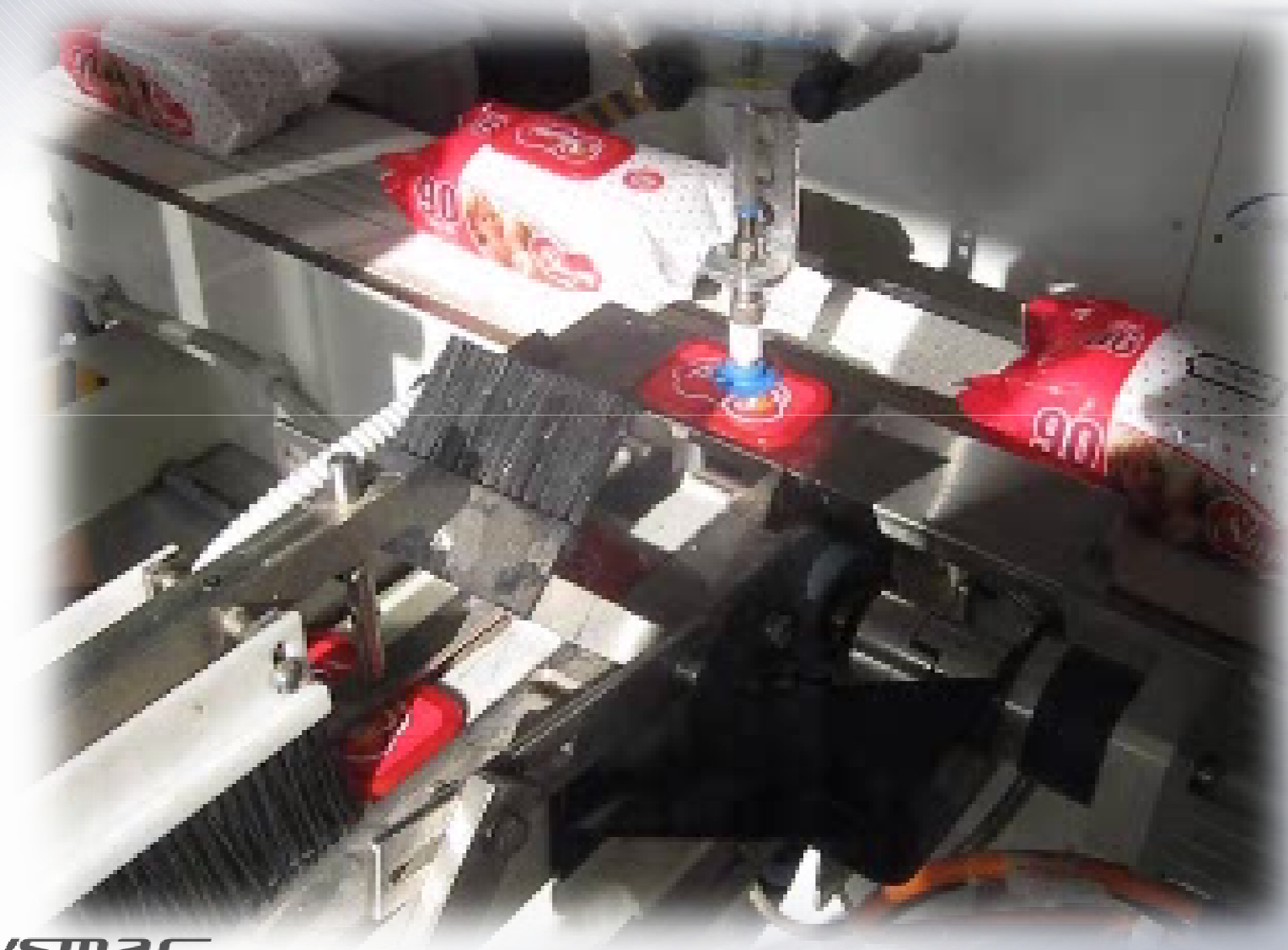


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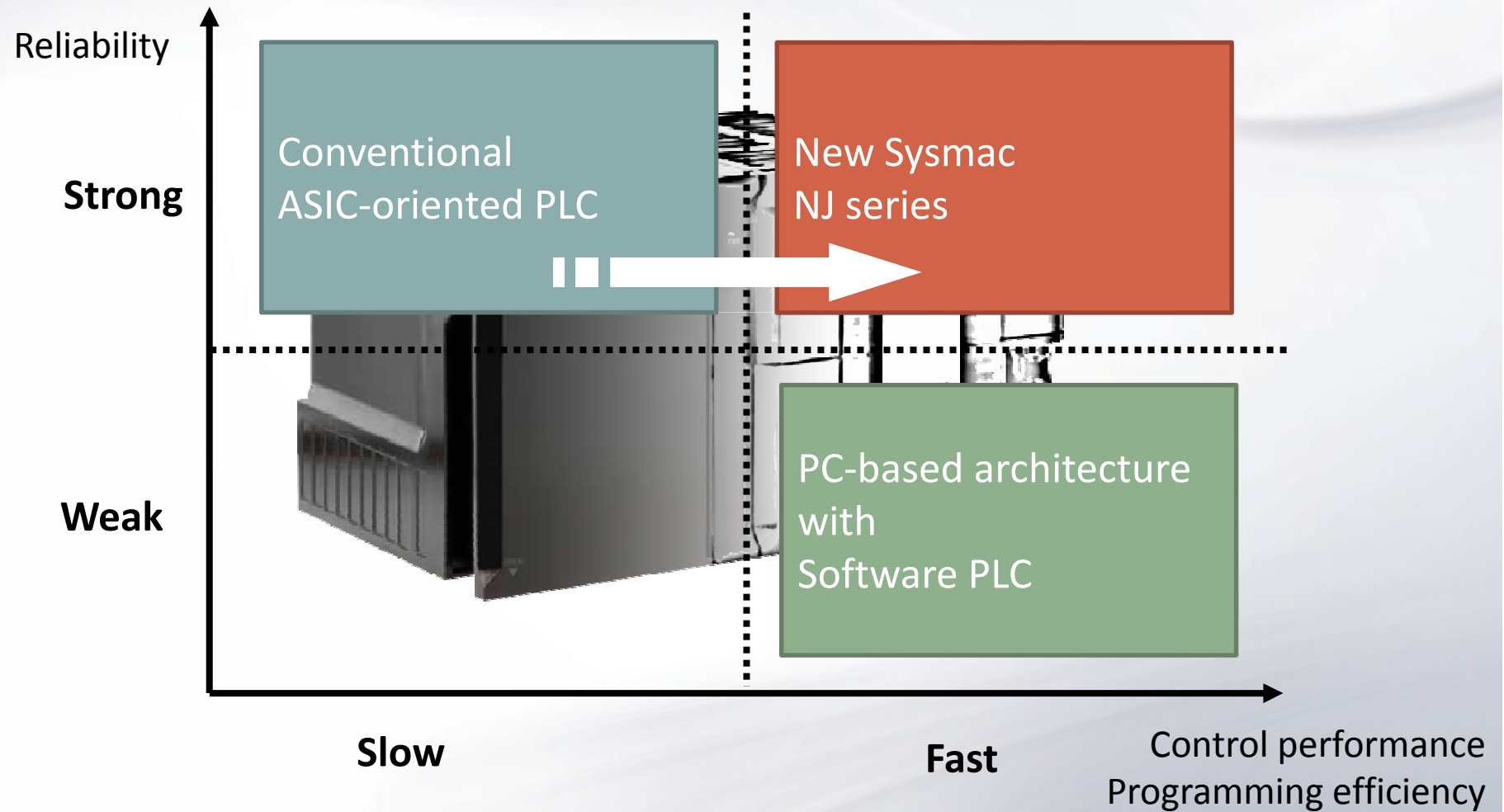
## Integrated Robot/Vision



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# NJ Positioning

Intel architecture, Omron Quality



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**WE AUTOMATE MACHINES**

... it just works!

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