OMRON
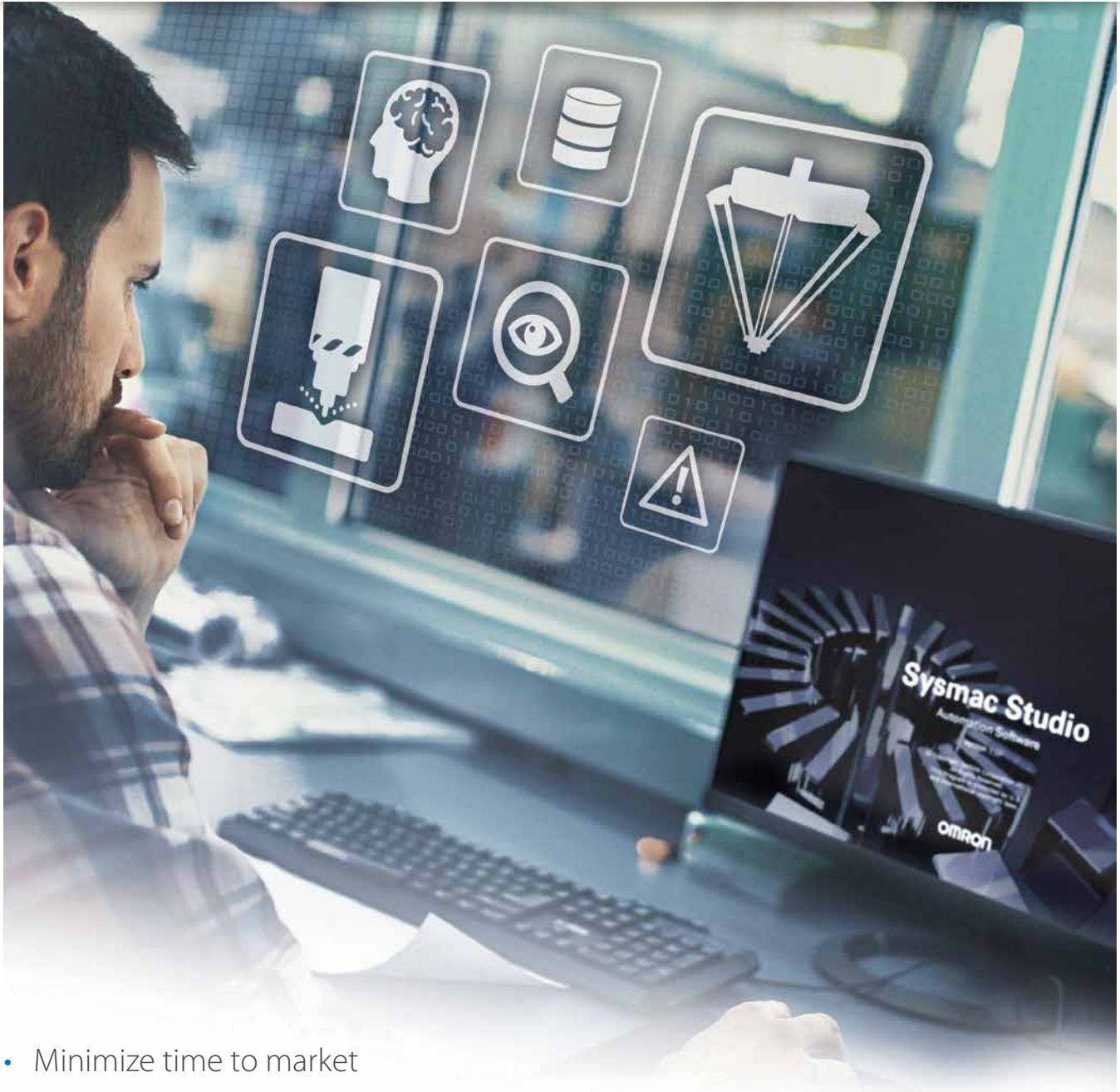
Integrated Development Environment

Sysmac Studio

- Minimize time to market
- Reduce installation cost
- Boost productivity

SYSMAC

Sysmac Studio
Your Automation Companion

In changing markets the customization and multiple variations of a machine or concept make the difference between success and failure. The task of designing, commissioning and maintaining machines is shifting from single person task to decentralized teams requiring coordination. A **proper version control system** is essential in order to keep control of all project changes and product variations.

Integrated Development Environment

Sysmac Studio is the Integrated Development Environment (IDE) designed to be your automation companion for your machine's or system's entire lifecycle.

Future automation systems will be more intelligent and interconnected, consequently engineering and maintenance costs will increase unless modern and appropriate software tools are used during the design, commissioning and maintenance stages. Sysmac Studio is a unique environment that integrates logic, motion and drives, robotics, safety, visualization, sensing and information technologies in a single project, thus reducing the learning curve and the intra-operative software costs. Team development, and integrated simulation are the key elements that make Sysmac Studio not only a development studio but a real productivity tool. One software to get things done.

Design	Commissioning	Production

Minimize time to market

Engineering time and costs are critical during the design stage. The integration of multiple disciplines and efficient team cooperation will dramatically contribute to reducing the time to market.

Reduce installation costs

Using the right software tools will minimize commissioning mistakes as well as costs. Get things done in shorter time.

Boost Productivity

Vertical integration of Overall Equipment Effectiveness data and easy maintenance is essential in improving production results and machine uptime.

Minimize time to market

Single Software Environment

• Integrating logic control, safety, motion, drives, robotics, HMI, Vision, Advances Sensing and information systems into a single environment allows programs to leverage simplified program architecture for quicker development.

• IEC611-31-3 compliance and third party compatibility further accelerates program time while allowing minimum impact to existing automation infrastructure.

Collaborate as a team

• Coordinated development in large decentralized teams is possible. Sysmac Studio integrates a unique graphic interface with a GIT version control system. Take full control of your code and variations and take advantage of the most popular version control software (GIT) and its possibilities for team collaboration, not only during the design phase but also the commissioning and operation phases.

Protecting Proprietary Program Code

• Sysmac Studio function blocks can be locked and customized to decrease risk of stolen intellectual property and easy version control.

Backwards Compatible

• No matter the version of Sysmac Studio, the software is compatible with all firmware versions of products in the Omron portfolio. Extending product life in the field.

Modular design

• Create flexible and modular designs using Sysmac Studio library system, Intelligent Application Gadgets (HMI faceplates), and flexible EtherCAT configurations.

| Commissioning | Production |

Reduce installation costs

3D Simulation

• Import and control CAD data to simulate a machine using standard ladder logic, structured text and function block commands. Sysmac Studio can fully simulate HMI, Controller and machine operation in one software.

PLC Logic Simulation

• Simulate the Ladder Logic / Structured Text programs to test the program for the actual machine. PLC Program Simulation does not require any hardware connection.

HMI Logic Simulation

• The NA HMI screens can be simulated in Sysmac Studio to help with the design of operator screens . The variables used for the PLC program can be linked with the NA HMI buttons or data displays. HMI Program Simulation does not require any hardware connection.

Motion Simulation

• More than 50 PLC open and Proprietary Motion FB's available in controller to develop single, synchronous and coordinated motion applications. Rich graphic cam editor including multiple interpolation methods as standard. Motion Program Simulation does not require any hardware connection.

Sysmac Troubleshooter

• Sysmac Studio troubleshooter handles not only Sysmac Controller but complete Sysmac system troubleshooting in a single reporting tool. Commissioning time is dramatically reduced as any Controller, Network, or Slave problem will be detected with all suitable information available for you to control.

Boost Productivity

Automatic Data Playback

• The Sysmac Automation Playback is the convergence of data, video, program structure, and ladder logic. All playback is time synced and event triggered to allow local and remote team members to quickly and accurately diagnose issues without interrupting production.

Information Systems

• In the era of The Internet of Things, information and automation systems converge. Sysmac Studio allows you to handle OEE data by means of vertical and horizontal integration following open standards like OPC-UA, MQTT, SQL, EtherNet/IP, EtherCAT or PackML Direct.

Ever Ready Security

• Future updates are part of the Sysmac ethos. Automatic software updates continuously improve software security. Combining updates with backwards compatibility firmware allows for quicker deployment of updates.

One software to get things done …

Sysmac Studio is one of the most full featured automation IDEs which handles complete machine automation including: Information handling, Visualization, Networking, Logic, Motion, Safety, Vision, Robotics, CNC and I/O. This single intuitive IDE contains all the necessary elements to program, commission and maintain Sysmac applications. Sysmac Studio editors are designed to be user-friendly, like traditional "PLC" software.

- ✓ **One project** to integrate all Sysmac Devices
- ✓ **One intuitive** and fully featured development environment
- ✓ **One software** that is scalable, flexible and complete
- ✓ **Open standards**

Simulink

Simulation

Information

Factory Automation

Visualization

Function Block Logic

- Fully along with NX controller hardware
- Version controlled
- Protects proprietary program code

Logic

Sensing

Scalability

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I/O

CNC

Machine Control
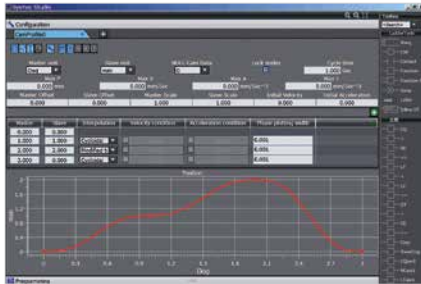
Robotics

Vision

Safety

Motion & Drives

✓ **Increased productivity** driven by reduced engineering time
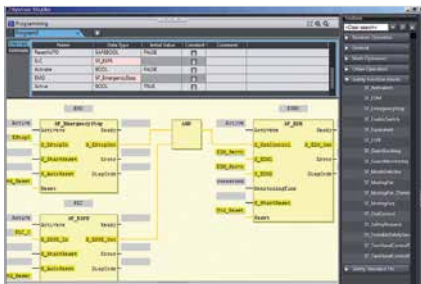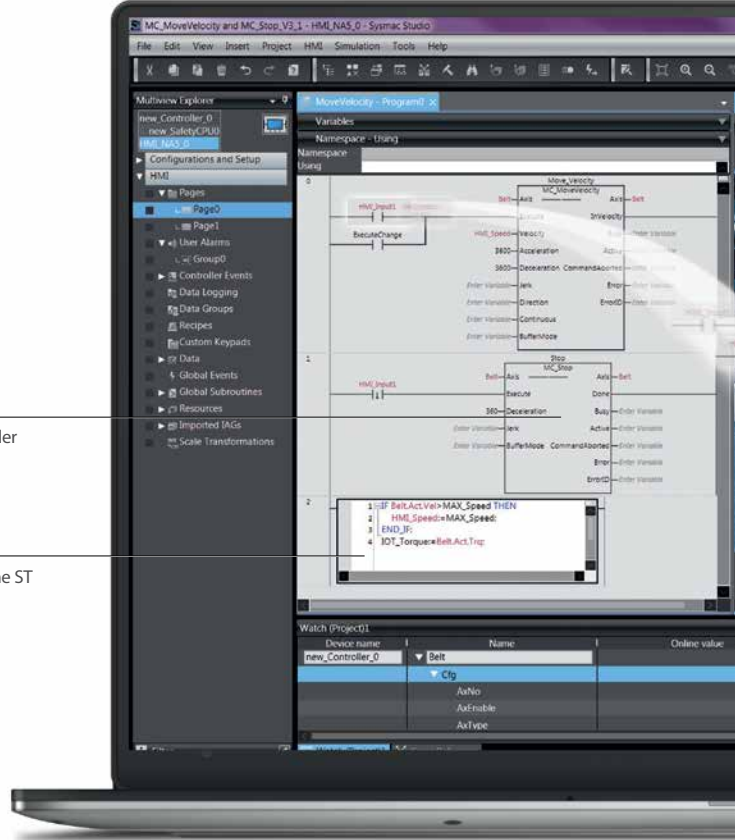
Sysmac Studio at a glance

Rich CAM editor

Motion Programming

- More than **50 PLCopen and Proprietary Motion FB's** available in controller to develop single, synchronous and coordinated motion applications

- **Rich graphic cam editor** including multiple interpolation methods as standard

- All the necessary **drive tools** for drive maintenance and commissioning as standard: single and multi axis tuning, mechanical analysis, parameter handing, etc.
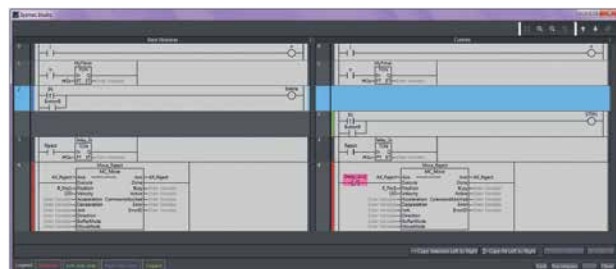

Ladder

InLine ST

Integrated Safety

- Dedicated FBD diagram and GUI interfaces are designed in order to **help commissioning and programming**

- **Mapping hardware** variables and sharing EtherCAT variables between the Safety Control System and the Standard Controller is easy in the Sysmac Studio environment

- All the necessary **printable reports** are generated from the Studio

Multi-User Environment

- Co-develop in parallel in **local** or **remote** teams

- Keep all machines easily **aligned to the correct version**

- **Handle machine variations** and customizations efficiently

- Take advantage of **GIT's open source** community

Intelligent Application Gadgets
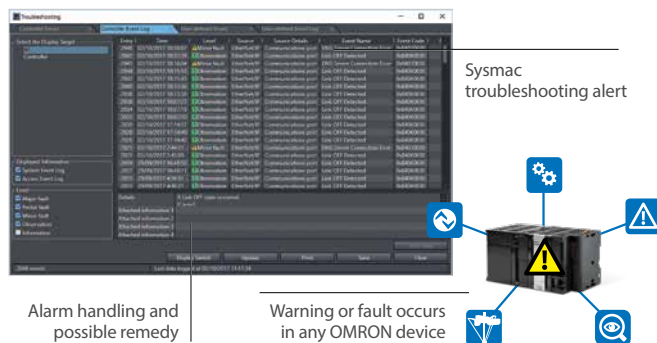
Integrated HMI

- **Reduce development costs** and maintenance time by combining NA HMI with Sysmac Controllers
- **Include videos and PDF files** that will improve machine operation and maintenance. Make your machines more intuitive and productive.
- **Enhanced editor's functionality** and version control features will help to reduce the total cost of ownership

Integrated Vision and Simulation

- Commissioning and programming vision devices is as easy as **dragging and dropping** other well known OMRON algorithms.
- Sysmac Studio i**ntegrates Sysmac Vision** devices like FH and allows you to import the necessary video from cameras to properly simulate and program the vision application in the same tool and project as the other Sysmac components

Live image

Access all the configuration of FH

Set of more than 100 tools

Integrated Troubleshooting

- Troubleshooting is seamless since the Sysmac architecture integrates controllers, actuators, devices, advanced sensors, HMIs, etc.

Sysmac troubleshooting alert

Alarm handling and possible remedy

Warning or fault occurs in any OMRON device

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Sysmac Studio Licenses

OMRON

Standard Edition

- Provides all the necessary features to program and set up the Sysmac system
- No extra cost for components

Lite Edition

- All features and devices supported by the standard edition
- Limited to the NJ1 and NX1 controllers

Options

Team Edition

- Version Control and Cooperative Development includes multi-user and GIT version control features

Sysmac Library

- **FREE** online software library lets licensed Sysmac Studio users download Function Blocks for multiple applications for different industries

All in ONE Project

industrial.omron.eu/en/products/sysmac-studio

As Standard (Standard Edition/Lite Edition)			Options
Information (SQL Connection, Networks Configuration)	**Visualization** (HMI)	**Logic** (Logic programming)	**Team Edition**
Motion (Motion programing, CAM editor, Drive Tools)	**Safety**	**Vision**	**Sysmac Libraries** (Application Libraries)
Simulation	**Robotics**	**CNC**	

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Note: Specifications are subject to change.