The Sysmac family
Proud of our history, confident in our future

Sysmac stands for System for Machine Automation Control and has been a trade name for our Programmable Logic Controllers since their launch in the early seventies. Since then Omron has shipped more than 10 million units world-wide. From now on the Sysmac name stands for a complete machine automation platform.
It covers controller, network, software, servo drives, inverters and even vision systems. From a performance stand point we believe that this is the fastest and most robust machine control platform in the market.
This gives us confidence in the future and strength to continue innovating and pioneering.

Faouzi Grebici
Sysmac Project Leader,
Europe and The Americas
Omron Automation Division

History

Omron introduced the first Sysmac PLC in 1971 and since then we have introduced a number of innovations. Communication, numerical control, back-plane less hardware and compact size have been just a few of our breakthroughs in the world of PLC's. However two intrinsic images that have characterised Omron's controllers throughout this long history are robust design and ease of use. This has inspired an appreciation and consequently a loyalty from small to medium-sized machine builders. Now that Sysmac has moved from a PLC to a total automation platform we are committed to keeping the same values.

Sysmac platform

The guiding values for the new Sysmac automation platform were simple yet challenging
- Designed specifically for machine control
- One connection, one software philosophy
- Open to global standards
- Omron quality

Created to automate the best machines

We decided to develop the platform for high speed and high accuracy machine control. For this we opted for the lightest architecture and the fastest machine network in the market. To ensure scalability and control flexibility we decided to use an INTEL atom processor instead of traditional ASICs-based architecture and an industry proven real-time operating system (RTOS). Both were pre-tested for more than two years before adoption.

EtherCAT: the one machine network

Another pillar of the new Sysmac automation platform is the adoption of EtherCAT as Omron's de-facto machine network. It took almost two years of testing and investigation before the final validation of EtherCAT. The latter is fast, simple and affordable, we had to work internally to make it robust and fit for the harshest industrial environments. EtherCAT will be embedded into all of our wide ranges of field devices.

Sysmac Studio: the one and complete software

Thanks to Omron's global development deployment we were able to use the software development centers in the UK and Spain to undertake the bulk of the development of the new Sysmac

studio software. Since usability and ease of use are essential in today's modern tools we wanted the developers to work closely with the application specialists and Microsoft engineers. Due to differences in language and culture, this would have been much more difficult to achieve in Japan. Thanks to this team's closeness we came to understand that machine virtualization is the future and for this we decided to include 3D motion simulation as a first step into the world of machine virtualization.

Global players use global standards

It is no exaggeration to point out that Omron is one of the most open automation companies in the world. Therefore, adopting global programming standards such as IEC 61131-3 and PLCopen came naturally to us.

100% Omron quality

To ensure that the software, firmware and network were all perfectly integrated, we decided to have 100% control over the entire development. We went through a tough financial crisis and we could have cut corners by licensing software or using PC based hardware with patched-up tools instead. However, this would have compromised our commitment to our customers, to offer the best quality in the market. It is also important to state that published performances are never based on mere theoretical calculation but rather tested and proven in the most severe operating conditions. That is why it just WORKS!

Today and tomorrow

Today we are proud and pleased to introduce the first generation of the Sysmac automation platform. It covers flexible machine automation and provides an integrated platform with focus on speed and performance. The second generation will focus on flexible cell automation with fully integrated safety, kinematics and CNC basic functionality. We will also work towards more machine virtualization. We have worked hard to build a solid foundation for the future of automation, the rest is just a building block process.