KOLLMORGEN

Because Motion Matters™

Integrating Motion & Logic Control

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What's new in integrated motion and logic control?

A key element that has changed is the advent of high speed deterministic networks for supporting both the soft PLC (integrated logic via IEC61131-3) and motion.

With Ethernet solutions like EtherCAT®, it is no longer necessary to have separate networks for the PLC machine control and the motion control. More importantly, new generation solutions like Kollmorgen Automation Suite truly integrate the PLC and motion engines to provide one programming environment, with tight coupling between the motion and process control for higher performance.

What are the primary technologies/solutions that Kollmorgen offers in this space?

Kollmorgen's newest offering is Kollmorgen Automation Suite™, which combines software, hardware and services for complete machine automation solutions.

The software includes a full IEC61131-3 soft PLC, with both the industry standard PLCopen motion engine and Kollmorgen's unique Pipe Network™ motion solution that provides a simple and elegant graphical motion programming capability that is particularly well suited to complex gearing and camming applications. The software suite is a single environment for *all* programming - whether process, motion, HMI, etc. Built-in ease-of-use features, such as auto recognition of the connected network devices, make it fast and easy to build the system solution.

Kollmorgen's hardware products include controllers, drives, motors, I/O, HMI's, gearheads and linear positioners, which are preconfigured and tested to work together for optimum performance and ease of integration. Kollmorgen also offers support services for application development, startup and training.

How broadly is integrated logic/motion control being adopted by machine builders, integrators and/or end users? Are there any particular industries in which this technology is being more widely used?

Integrated logic/motion control is generally a consideration for most new machine applications. While some customers will continue to use separate logic and motion control, these customers are at least evaluating the benefits of switching to an integrated solution.

The packaging, converting and flexographic printing industries are widely using integrated solutions. At this time we see a slower adoption curve in the semiconductor and electronics assembly markets.

What are the major drivers and/or enablers for broader use of integrated logic/motion control technology?

There are several factors driving integrated solutions:

- Faster time to market resulting from the single programming environment that handles all of the machine and motion control. The developer learns just one tool, which can perform all of the tasks needed for the machine application.
- Lower cost by having a single environment, single network and common hardware (one controller for both machine and motion control instead of a separate PLC and motion controller).
- The use of common standards such as IEC61131-3 for the soft PLC and PLCopen for the motion control. For OEMs who may need to work with more than one supplier, they can benefit from not having to relearn completely different tools.
- Single supplier to work with for all of the software, hardware and services.
- Integrated systems can achieve higher performance via the tight coupling of the process and motion engines.

What are the major benefits of using this technology?

The two primary benefits are faster time to market and higher performance.

As noted above, faster time to market comes from using a single programming environment to do all aspects of the machine application. It is no longer necessary to develop the process programming in one tool, motion programming in another, HMI in still a third, and possibly other tools for handling things like I/O integration and drive setup. With the separate tools, even after the machine builder has learned them and become proficient, they still needed to integrate the separate results together and manage the issues of debugging and supporting the system across all its independent elements. When a single integrated development environment is combined with pre-configured components that are auto recognized by the software and automatically setup, development and deployment time is dramatically reduced. It is not unusual to see 30% to 50% reductions in the time from concept to machine deployment.

High-performance comes from being able to run the entire program as an integrated entity rather than having to pass commands between separate controllers for the process logic and motion control.

When a leading medical products manufacturer wanted to increase machine production rates their existing supplier solution (based on non-integrated approach) was only able to achieve 80% of the new minimum target. Using integrated technology they not only achieved the maximum target production rate, they were able to exceed it by more than 20%. Compared with the existing supplier's solution, the integrated solution can produce as much as 1000 units more per minute. This is done on an application that requires high speed registration, very low dynamic lag error, and precise CAM adjustment - not just high volume output, but precise motion control as well.

ABOUT KOLLMORGEN

Kollmorgen is a leading provider of motion systems and components for machine builders around the globe, with over 70 years of motion control design and application expertise.

Through world-class knowledge in motion, industry-leading quality and deep expertise in linking and integrating standard and custom products, Kollmorgen delivers breakthrough solutions unmatched in performance, reliability and ease-of-use, giving machine builders an irrefutable marketplace advantage.

For more information visit www.kollmorgen.com, email support@kollmorgen.com or call 1-540-633-3545.