

Motion Control Software Plays an Increasingly Significant Role in the Industrial Automation Sector

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The growing tendency to use motion control software in the robotics automation sector has created a demand for software packages that include a wide variety of features such as human machine interface, logic and motion control, and communications.

Most participants tend to opt for either programmable logic controllers (PLC) or PC-based controllers. Despite the advantages that PC-based controllers offer, it did not gain total acceptance in the industrial automation sector.

“Under the circumstances, programmable automation controllers (PACs) that combine the best of both are likely to emerge as the new generation of motion control,” says Amreetha Vijayakumar, Technical Insights Research Analyst.

With PLC, the user must integrate information manually between multiple databases and multiple interfaces. Apart from being a complicated and tiresome procedure, it creates a greater degree of dependence on hardware. The costs involved in upgrading the system are also extremely high.

PC-based motion control systems, however, rely on software. Applications can be customized to meet current and future requirements, thus eliminating the need to reinvest in a new system. The advent of

software has also made users aware of the need for an open architecture.

Although PC-based software offers functionalities that are much more convenient than those in legacy systems, transition costs are very high. This is a major deterrent to most participants in the industrial automation sector, as many of the users have already invested heavily in the older technology.

Also, while technicians and control engineers usually maintain traditional systems, software-based systems require IT-trained personnel or skilled programmers. This is likely to increase management costs as well.

“The instability of the operating systems, especially PC-based motion control, is yet another factor that has curbed their adoption,” notes Vijayakumar. “It cannot be relied upon in critical applications. This has limited its usage to test applications and lab environments.”

Most participants are reluctant to move to PC-based motion control software, as they are not willing to risk their production pipeline on software-based systems. Proprietary control systems that are less vulnerable to virus breakdowns and have reduced dependence on hardware are preferred. Nonetheless, the recent trend toward integrating vision and motion systems software can increase its uptake among applications requiring high-level precision.

This increased demand for PC-based software has led to a tendency to view it as a replacement technology for the PLC. However, it should ideally be made to complement the PLC so as to allow participants to benefit from the best attributes of both.

The combination of PC based systems and the family of intelligent drives ensures that the software is much more than a mere human machine interface in control systems by removing the motion controller

boards from the system and splitting most of the complex motion tasks between the PC and the intelligent drives.

The ‘new generation’ of PAC products also merges the best features of PLC and PC-based controllers. Though an emerging trend, PACs have immense potential and are expected to play an integral role in industrial automation.

Robotic Automation Software in North America, part of the Industrial Manufacturing Vertical Subscription Service, includes technological analysis on robotic automation software. The analysis provides a comprehensive analysis of the technologies used in developing the software and analyzes key technical challenges and drivers that are influencing the growth of robotic systems. It also provides an in-depth examination of cutting-edge developments that are likely to be incorporated in the industrial automation sector. Executive summaries and interviews are available to the press.

If you are interested in an analysis overview which provide manufacturers, end-users and other industry participants an overview, summary, challenges and latest coverage of Robotic Automation Software in North America - then send an email to Julia Paulson – North American Corporate Communications at jpaulson@frost.com with the following information: Full name, Company Name, Title, Contact Tel Number, Contact Fax Number, Email. Upon receipt of the above information, an overview will be emailed to you.

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