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## PROSPECTS IN MECHANICAL ENGINEERING

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Dipl.-Ing. (FH) Martin Buchwitz

## **The Integrated Path Control**

### **PC-Based Control**

The more complex a machine, the more different systems, software tools and programming languages the user has to deal with. This requires a great deal of time and money, which can be saved if a system is used incorporating as many functions as possible under one roof.

Motion technology is the area which profits most from these feature. Applications where mechanical equipment and plant manufacturers had to resort to CNC or robot systems can now be implemented using the same control system and programming language which are used for control functions. Thus, it is no longer necessary to develop expertise with great effort or to purchase it from external sources at a high price.

### **One language will do**

A particularly suitable common denominator is using the programming language Structured Text from the programming standard IEC 61131-3. Structured text provides the functions of a high-level language and is therefore very suitable for meeting the increasing need for software for process description and data management.

Jetter AG have decided to develop their plain text high-level language with multitasking further in the direction of structured text, with the following features:

- Integration of motion control including path control
- Syntax of structured text (ST)
- Optimum support of process programming
- Process-oriented with multitasking
- String commands and File commands

## **Programming path control from within the PLC**

Due to the complexity of robot and path control functions many users shrink back from programming such functions themselves. This concern is legitimate because programming robots and the implementation of path functions are very specific jobs and the task is actually very complex. With almost all control and motion systems, programmers have to familiarize themselves with completely new hardware, programming tools and programming languages. Even with the latest developments from most manufacturers, the integration of path control comes to a stop at the programming language at the latest.

The Motion Control solution JetWeb MC uses a completely different approach. In JetWeb MC, path control functions can be programmed as easily as PLC functions, single axes and technological functions. Using only one programming language, programmers write a program flow which is able to cover all these functions. Parallel processes can be displayed in 100 programs running in parallel (multitasking).

## **One system for PLC, positioning and path control**

The ever increasing integration of control and motion technology will not stop short of path control. Users will profit from this trend as they are able to implement all functions required for controlling, positioning and path control using only one system, and, what is even more important, using only one programming language. This approach avoids discontinuities between systems, makes interfaces transparent, and reduces implementation effort. With JetWeb MC, a generic motion control has been created consisting of PLC, positioning, technology functions and path control. This is a completely new approach unique in its form especially what concerns consequent integration of the programming language into the PLC.

### **References:**

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