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Intuitive automation instead of complex processes

The emphasis for Lenze will be very much on mastering increasing complexity at the SPS IPC Drives 2018.

More functions, more flexibility, more intelligence: the demands placed on automation are growing, as are the complexity of the solutions. The engineering and operator models used to date do not keep pace with progress – time and personnel expenditure are increasingly getting out of hand. With the latest products, new tools and showcases for modern development processes, this year's SPS IPC Drives in Nuremberg (27–29 November 2018) will see Lenze demonstrate that this trend can be reversed – with intuitive automation.

Packing complicated things in such a way that they appear simple and become manageable – that's what Lenze, a specialist in machine automation, has been trying to do for some time now. Now the company from Hamelin can present the fruits of this work on a broad front for the first time. "Intuitive Automation" will be the motto for all exhibits at the SPS IPC Drives, hall 1, stand 360.

Digital engineering provides the foundation

As machines become more and more complex to develop, it can easily be the case that agreed specifications are not fully adhered to or last-minute hardware changes are not incorporated into the software. This unpleasant surprise then comes during commissioning at the very latest. Digital engineering offers a way out of this dilemma. A digitised development process makes it possible to conduct more precise tests at an earlier phase in the project, provides support for programming the application software, and paves the way towards virtual commissioning.

This scenario has so far been nothing but pure theory for many. This is because there has been a lack of integrated development tools with standardised data transfer for components, modules and machines over the entire lifecycle. The introduction of the administration shell in accordance with RAMI 4.0, the digital twin, now makes it possible for information to flow without interruptions for the first time. Lenze develops the necessary tools for the digital development process itself, in close collaboration with customers, partners and the standardisation committees of the industry associations.

New and further developed tools

This is where the concept of intuitive automation fully takes effect: fundamental parameters, desired applications and components, modules to be used, as well as motors, gears and drive technology and so on are queried in the InA-Tablet app and stored in the digital twin. The result is a virtual machine, for which a machine code can be automatically generated, a cloud connection set up and even a 3D simulation generated by Hololens.

Lenze goes a step further with the new “System Solution Designer”. It is based on the popular “Drive Solution Designer”, covering not only the drive technology, but also enabling a more detailed configuration of the overall system, which supports the selection of the individual components through integrated intelligence and ensures technical viability. Part of this solution has its origin in the FAST toolbox by Lenze, which will be further developed into a FAST framework. Partners and customers have the opportunity to discover the merits of digital engineering in a comprehensive showcase.

Plug & Produce

The Plug & Produce concept is also based on the digital twin – just plug in and off you go. The secret lies in communication: open, manufacturer-independent standards allow the various modules involved to automatically exchange data with each other, including fully-fledged interaction during production. This means that the production line no longer needs to be programmed – it is simply configured. This standardised communication is built upon the OPC UA and its PackML companion specification. This was expanded by a description of the machine capabilities (“skills”). Lenze will be using a modular production line at its stand to demonstrate how this concept fosters openness and flexibility.

High-performance control technology

With the c510, c550 and c750 controllers, Lenze is delivering a new generation of control systems that offer significantly higher memory and computing capacities compared with previous generations. They cannot only handle classic PLC tasks, but also provide sufficient reserves for sophisticated applications, such as analysing camera images or managing databases. Both systems run independently of one another, but can communicate with each other. This makes additional industrial PCs redundant while maintaining transparency and interoperability.

Conclusion

As the production process has undergone digital transformation, it has become much more complicated and complex. The last pieces of the jigsaw are now slowly coming together and revealing a digital, intuitive automation system with which the anticipated increases in effectiveness can be achieved. As a manufacturer with comprehensive domain knowledge and a wide range of hardware and software for machine automation, Lenze is driving this development decisively forward. With manufacturer-independent solutions, using open standards such as OPC UA among others, the company guarantees partners and customers the greatest possible flexibility in the development and operation of machines and systems.

About Lenze

Lenze is a leading automation company for mechanical engineering. With 70 years of experience in providing solutions, Lenze is a strong partner that stands side by side with its customers. The company portfolio includes high-quality mechatronic products and packages, efficient systems consisting of hardware and software for machine automation and digitisation services in the areas of big data management, cloud and mobile solutions as well as software within the context of the Internet of Things (IoT).

Lenze employs around 3,700 people worldwide and is represented in more than 60 countries. As part of its growth strategy, Lenze intends to continue investing strongly in Industry 4.0 sectors in the upcoming years – with the aim of further increasing revenues and profitability.

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