

Press release

The future of production is Plug & Produce

At the upcoming Hannover Messe in Germany, Lenze demonstrates how existing and future standards can provide more flexibility and openness in production

Imagine a new product or a new format is to be introduced: It requires a change for Infeed and Pick&Place in the production line. Packaging and Palletiser will remain untouched, but we must also change the Outfeed module. Not only does this sound a complicated change in process formation, it also requires a lot of time and engineering effort. The Plug & Produce concept could mean that the production line is in operation without excessive engineering effort being required for configuration and programming. Manufacturer-independent standardised interfaces for control, formula and product data already exist. With concepts such as the administration shell and machine skills, Lenze is showing us how the future could look.

Higher demand for product customisation means smaller batch sizes – and therefore more frequent production line retooling. And it's not just the mechatronic modules within a machine or system that must be exchanged. Programming of the control system, integration into the HMI, diagnostics and commissioning are other necessary steps before production can get started. This means a significant amount of expenses in terms of engineering time and personnel for the end user. However, the OEM also needs to invest a lot. For example, implementing the connection options, preparing different files or data formats and coordinating everything with the suppliers of other modules.

At the Hannover Messe in April, machine automation specialist Lenze shows it doesn't have to be this way. The showcase simulates the packaging of various products with different modules within the production line. Retooling of the production line follows the "Plug & Produce" concept – plug in and get started. The secret lies in communication: open, manufacturer-independent standards allow the various modules involved to auto-configure the production line and exchange data with one another, including full interaction during production. This means that the production line no longer needs to be programmed.

Utilise existing standards

This standardised communication is built upon the OPC UA and its PackML companion specification. Lenze is one of the first companies to make use of the administration shell to provide data descriptions of the machine "skills". Using this data, the modules can link and organise the interactions in the production process. The Plug & Produce showcase is one example of just how powerful Lenze's hardware and software automation platform is regarding openness, scalability, modularity and networking.

The aim is to create manufacturer-independent standards for real world manufacturing applications. Lenze is therefore looking for supporters within the industry, among OEMs and engagement from the standards committees of professional associations. Lenze recognises this is the only way to achieve their goal of real Plug & Produce. Openness in the selection of machine suppliers, in the adaptation of production lines and when changing products also means openness for the automation platform.

Benefits for OEMs...

Mechanical engineering benefits immensely from the Plug & Produce concept, because uniform interfaces and standards simplify the modularisation of machines and systems. At the same time, the intellectual property of the OEM is protected as no specialist expertise needs to be provided to third parties in order to ensure seamless communication and networking. The integration and programming effort is reduced and the integration of visualisation systems is simplified – thus reducing possible error sources and bringing about more room for innovation. Improved functionality with a shorter time-to-market and efficient use of engineering resource strengthens competitiveness.

...and end users

For the end user, Plug & Produce pays off right away when designing a new production line: higher flexibility and adaptability, more openness when selecting machines and suppliers and easier reusability of machine modules. Production can be adapted more quickly to changes in the market and consumer trends, while still requiring minimal effort for integration. Continuous communication further allows diagnostics and alert management to be more readily standardised. Plug & Produce allows for more frequent product changes during ongoing production due to simpler, faster retooling and high plant availability.

Conclusion

Current standards already allow large parts of the Plug & Produce concept to be implemented today. The task is now to fill in the remaining gaps as quickly as possible in order to start fully benefitting from the advantages this concept has to offer. As a manufacturer with comprehensive domain knowledge and a wide range of hardware and software for machine automation, Lenze is committed to implementing open standards to ensure that all participants in the market can benefit from the best possible flexibility for development, machine design and system operation. To achieve this goal, Lenze is seeking dialogue with customers, partners and professional associations.

Learn more about Lenze's leading automation solutions at www.lenze.com.

About Lenze

Established 50 years ago in Bedford, Lenze Ltd now has 45 employees and achieves sales of about £20M in power transmission equipment from the Lenze factories and other quality suppliers. Services to UK customers include application engineering, software writing, training, commissioning and service

The Lenze Group is controlled via its holding company, Lenze SE, whose headquarters are in Aerzen, near Hamelin in Lower Saxony, Germany. Lenze is a globally active specialist in Motion Centric Automation, offering a comprehensive portfolio of products and services: everything from controllers and visualisation to electric drives and electromechanical applications, plus engineering services and tools, and it all comes from one source. Lenze's experts work together with the customer, designing integrated drive and automation solutions that simplify the realisation, production and servicing of machines. Lenze is one of the few suppliers in the market who support the machine builder in all phases of the machine-building process.

Employing around 3,700 people worldwide, Lenze is represented in 60 countries by its own sales companies, development sites and production plants, backed by a network of service partners. The main headquarters are in Germany, with a large research and development division, two production sites and a logistics centre that supplies customers in north-eastern Europe. The customers are supported by an international network of sales and application engineers.

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