SIEMENS

Background information

Nuremberg, 26-28 November 2019

SPS 2019, Hall 11

Sinumerik One in the TIA Portal

- **Shorter development and commissioning times**
- **Software libraries enable standardization**
- **Commissioning tests on virtual test rack**

The new Sinumerik One CNC generation is at the heart of digital transformation for machine tools. As a digital native, the controller features not only a new hardware platform, but also versatile software for the creation of a digital twin. It closes the gap between the virtual and the real world and helps to reduce development and commissioning times considerably.

Sinumerik One as part of the engineering framework

The central element for engineering the Sinumerik One is the TIA Portal. Both PLC (Programmable Logic Controller) and Safety are engineered in this engineering framework with modern programming languages and a seamless data flow. The integration of Sinumerik One into the TIA Portal enables a consistent digital development process for machine tools, which makes all engineering tasks easier. With the integrated Simatic S7-1500F, machine manufacturers can make full use of the advantages of the TIA Portal with Sinumerik One. Uniform, centralized data handling enables efficient engineering and considerably reduces the potential for errors caused by inconsistent data. Drag and drop is used to network peripherals easily and to establish communication links with other machine components. In addition, machine manufacturers can create software libraries with ready-made hardware configurations and numerous function and software modules in the TIA Portal, thus standardizing the development of the machine tool.

Sinumerik One is based on Safety Integrated as the Siemens industry standard in the field of safety. The controller also supports the safety functions integrated in the drive. In addition, thanks to the integration of the Simatic S7 1500F PLC for

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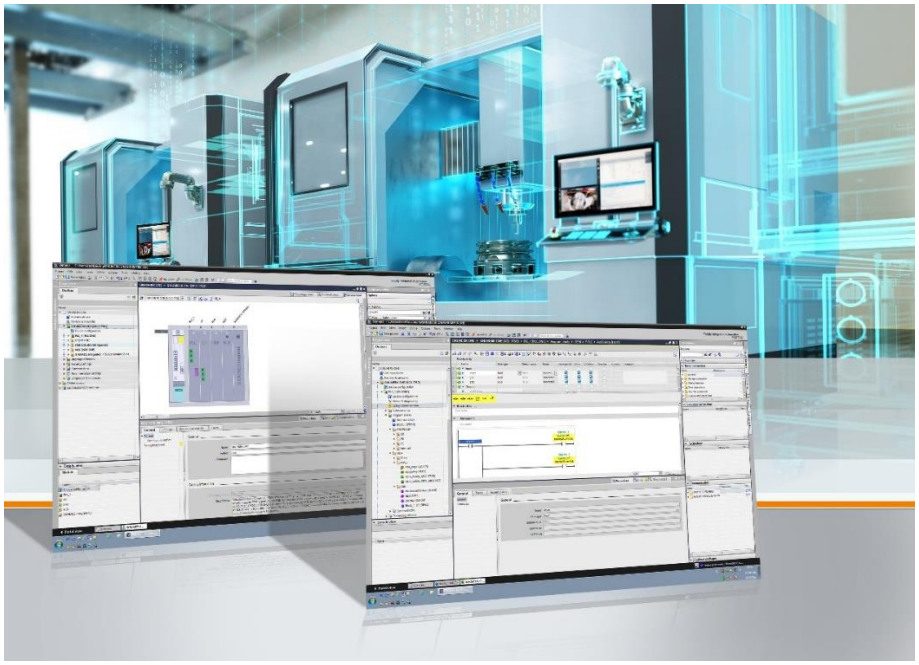
implementation of the safety logic, only one failsafe program is required. This simplifies safety engineering and reduces safety commissioning time.

The digital twin as virtual test rack

With Create MyVirtualMachine software, machine manufacturers can use a digital twin of the controller and utilize it as a virtual test rack. In this way, engineering and software modules can be tested comprehensively without the use of hardware. Programming tasks which previously had to be performed successively can now be completed in parallel. This creates flexibility and reduces dependencies. Using the virtual image of the controller, logic functions in the safety environment can be virtually tested and commissioned in advance. Virtual commissioning with the digital twin helps to minimize commissioning time in the real world. Run MyVirtualMachine software also offers the machine user the option of using a digital twin to transfer tasks such as running in products and training employees into the virtual world.

At SPS 2019, Siemens is showcasing how Sinumerik One with its digital twin is driving forward the digital transformation of machine tools. Come and visit us in Hall 11.



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Additional information about Sinumerik One can be found at
www.siemens.com/sinumerik-one

Additional information about Siemens at SPS 2019 can be found at
www.siemens.com/press/sps19 and www.siemens.com/sps19

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Siemens AG (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for more than 170 years. The company is active around the globe, focusing on the areas of power generation and distribution, intelligent infrastructure for buildings and distributed energy systems, and automation and digitalization in the process and manufacturing industries. Through the separately managed company Siemens Mobility, a leading supplier of smart mobility solutions for rail and road transport, Siemens is shaping the world market for passenger and freight services. Due to its majority stakes in the publicly listed companies Siemens Healthineers AG and Siemens Gamesa Renewable Energy, Siemens is also a world-leading supplier of medical technology and digital healthcare services as well as environmentally friendly solutions for onshore and offshore wind power generation. In fiscal 2019, which ended on September 30, 2019, Siemens generated revenue of €86.8 billion and net income of €5.6 billion. At the end of September 2019, the company had around 385,000 employees worldwide. Further information is available on the Internet at www.siemens.com.