SIEMENS

Background information

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Technology and Application Center (TAC) in Erlangen

In its Technology and Application Center (TAC) founded in 2007 in Erlangen, Siemens offers training and advisory services relating to all aspects of machine building technology, and in particular the machine tool industry. Siemens experts at the Center use concrete examples to demonstrate how manufacturing industry can benefit from the advantages of automation and digitalization, with the aid of standard machines in popular use in the marketplace and special demonstration set-ups. The Center's activities focus on the three steps "build", "operate" and "optimize". "Build" stands for the development of machines and products with the aid of CAx software. "Operate" is aimed at achieving the most efficient machine operation possible. "Optimize" concentrates on the optimization of concepts and sequences with the aid of software-based simulation.

The TAC's offering is aimed primarily at machine manufacturers and users of the Sinumerik CNC automation systems as well as in-house personnel. Some 2,000 participants attend the training courses, workshops and presentations which take place every year in Erlangen. Visitors come from around Germany and from locations around the world. Alongside participants from industry, the Center in Frauenauracher Straße 80 also regularly hosts groups from schools, universities and partner companies. Siemens also uses the TAC to implement pilot projects with key accounts and test out innovative machine concepts. Alongside the location in Erlangen, the number of Technology and Application Centers around the world has now grown to six. What is currently the newest of these was opened in 2014 in India.

A central focus for the TAC in Erlangen is providing tuition in modern CNC control technology. The function of Sinumerik CNC controls and their benefits in terms of productivity, machine and system efficiency as well as machine management and

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repair are presented live using a large fleet of machine tools. The spectrum includes high-end machines for 5-axis machining with Sinumerik 840D sl as well as standard machines fitted with the compact Sinumerik 828D. Another focal theme is digitalization. Here, Siemens demonstrates how machine builders and users in the manufacturing industries can profit from the implementation of end-to-end digital processes. Aspects demonstrated at the Center include ways in which end-to-end CAD/CAM-CNC process chains can reduce engineering time or how the simulation of complete machine concepts enables planned sequences to be tested in advance with the aid of a “virtual machine”. Completing the range of services on offer in the Center are demonstrations of special solutions for different metal processing technologies and for integrating machine tools into the automated factory.

Production machines of all kinds – for instance packaging machines or injection molding machines – form part of the machine outfit installed in the TAC, which is used for testing and demonstrating new automation and drive systems. Visitors to the Center currently have the opportunity to watch a graphic demonstration of how 3D simulation can be used to optimize the energy flows occurring in a metal press and so generate significant energy savings.

In a dedicated hall in the Erlangen Center, Siemens also demonstrates the functional characteristics of its active vibration damper system using a loading crane. Its active damping action is achieved using a linear motor with smart motion. When used on container cranes for instance, the system is mounted on the crane girder. Smart acceleration and braking of the linear motor including weight directs the forces into the girder. Compared to conventional methods, this system reduces vibrations more quickly and efficiently, making for faster and safer loading of containers and other types of freight. In this way, the system developed by Siemens for the effective damping of vibrations in the mechanical structure of the crane results in faster, more efficient freight transfer operations.

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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 165 years. The company is active in more than 200 countries, focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is No. 1 in offshore wind turbine construction, a leading supplier of gas and steam turbines for power generation, a major provider of power transmission solutions and a pioneer in infrastructure solutions as well as automation, drive and software solutions for industry. The company is also a leading provider of medical imaging equipment – such as computed tomography and magnetic resonance imaging systems – and a leader in laboratory diagnostics as well as clinical IT. In fiscal 2015, which ended on September 30, 2015, Siemens generated revenue of €75.6 billion and net income of €7.4 billion. At the end of September 2015, the company had around 348,000 employees worldwide. Further information is available on the Internet at www.siemens.com.