SIEMENS

Hannover Messe 2019, Hall 9, Booth D35

Siemens to showcase new applications for machine-level edge computing

- **Edge application Analyze MyWorkpiece /Capture enables data capturing around every aspect of workpiece machining**
- **Analyze MyWorkpiece /Toolpath designed for workpiece data visualization and analysis**
- **Edge application Analyze MyMachine /Condition determines the condition of machine tools**

As part of Siemens Industrial Edge, Siemens will be showcasing new applications for Sinumerik Edge, the machine-level platform specifically targeting the machine tool industry, at the Hannover Messe 2019. Visitors to the show will have the chance to experience the edge application Analyze MyWorkpiece /Capture, which enables real-time data surrounding every aspect of workpiece machining to be recorded. Coordinated to work with this application is the CNC shopfloor management application Analyze MyWorkpiece /Toolpath, which allows the acquired data to be visualized and analyzed. Siemens will also be showcasing an edge application in the field of machine condition monitoring in the form of its new Analyze MyMachine /Condition.

The new edge application Analyze MyWorkpiece /Capture allows machine tool users to record all kinds of workpiece, tool and tool path data with a high temporal resolution. Additional data such as drive currents, control deviations or spindle torque can also be recorded. The user is able to determine which data should be captured and how, for instance only for selected machining steps or from specific threshold values. The recorded data can subsequently be imported into the CNC shopfloor management application Analyze MyWorkpiece /Toolpath, where it can be visualized and analyzed. The recorded position data can be used to reconstruct a

3D representation, and additional measurement values can also be depicted with color coding as a fourth dimension using the component topology. The color coding enables functions such as the identification of deviating path velocities. The color-coded visualization of path curvature offers further scope for analysis. Fundamentally, the applications enable target data – generated for instance by CAM – to be compared to data recorded during the actual process. As the resulting findings enable optimization of the CAD/CAM model and the generated NC program, the Analyze MyWorkpiece /Toolpath application helps provide the assurance of quality right from the very first produced workpiece. The improved degree of transparency enables the deduction of wide-ranging findings which can be used to bring about an overall improvement in process quality and process development.

The edge application Analyze MyMachine /Condition captures a mechanical fingerprint of the machine tool. Flexibly configurable measurement series can be used to capture a variety of parameters such as rigidity, friction and reverse backlash in the individual axes. By visualizing the measured results and comparing them to reference data, an overall improvement of machine tool condition transparency is achieved. The early identification of non-conformance made possible by the application allows optimized machine operation and reduced machine downtimes. Condition-dependent maintenance also makes for optimized processes and cost savings. Improving and correcting machine parameters such as control variables can prevent any potential loss of quality in running production. This is another Sinumerik Edge application which significantly improves machine tool availability and consequently also productivity.

With its Sinumerik Edge portfolio, Siemens is providing a machine-level platform designed specifically for machine tools featuring a range of software applications capable of capturing high-frequency data generated during machine tool operation, which is then processed, analyzed and forwarded to higher-level systems. Using the platform approach means that the edge applications offer practically unlimited scope in terms of their function within a secured ecosystem. Other benefits provided by the platform include simple connection to the Sinumeric controller, a security infrastructure and the facility for users to program their own edge applications. With its new edge applications Analyze MyWorkpiece /Capture and Analyze MyMachine /Condition as well as the Optimize My Machining /Trochoidal application designed to

significantly extend tool life by means of trochoidal milling, which was unveiled back in September 2018, Siemens is now offering applications which address the three main value drivers of edge computing in the machine tool sector: Process quality, machine condition and productivity improvement.
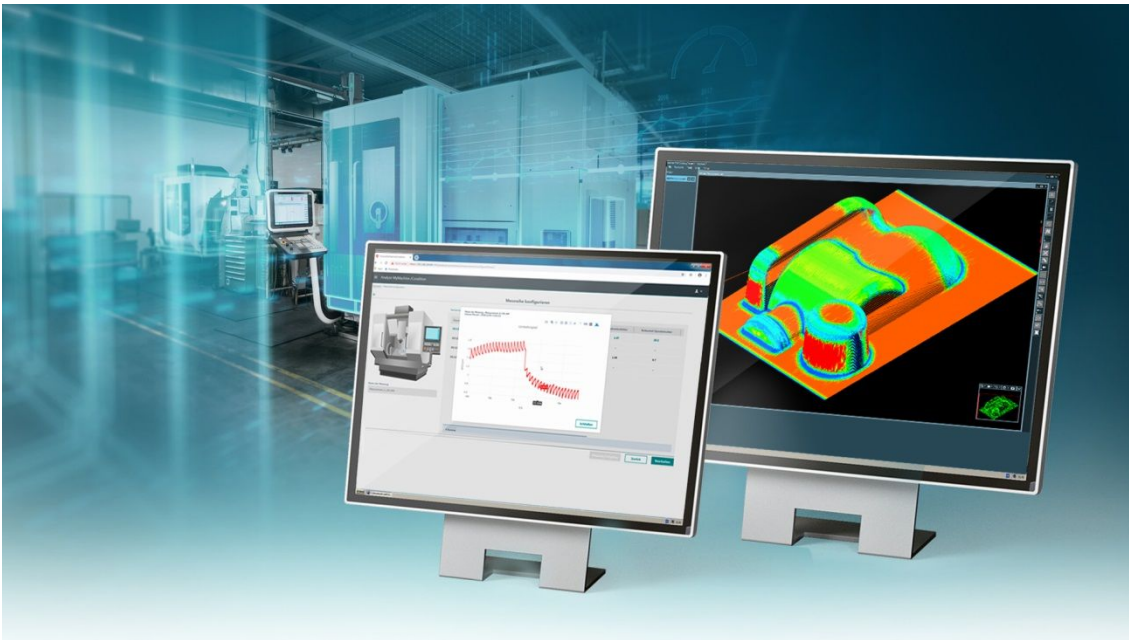
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This press release and a press picture are available at
www.siemens.com/press/PR2019020156DFEN

For further information regarding the CNC-Shopfloormanagement Software, please see www.siemens.com/machinetools-digitalization

For further information on Siemens at the Hannover Messe 2018, please see
www.siemens.com/press/hm19 and www.siemens.com/hannovermesse

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