Tebis offers complete planning and programming on a virtual machine

*The program is precision: Sophisticated simulation technology with digital process libraries*

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Tebis offers complete planning and programming on a virtual machine

*The program is precision: Sophisticated simulation technology with digital process libraries*

**Martinsried, Germany, September 18, 2018 –Tebis will present its advanced simulation technology, which enables a detailed representation of the actual manufacturing environment in the virtual world, at its booth (Hall C2/ B25) at the AMB metal processing industry trade fair in Stuttgart (September 18 - 22).**

Reiner Schmidt, head of Product Management at Tebis AG, explains: "In times of digitization and Industry 4.0, the topic of automation is becoming increasingly important, also in the die, mold and mechanical engineering sectors. Anyone wanting to be successful here has to be very well aware of and master three factors: the manufacturing environment, manufacturing knowledge and order processing. With our end-to-end simulation solution, we give users the ideal basis for their first steps on the path to digitization – and this can be flexibly adapted to the requirements of the day."

Automation in mold and die manufacturing and mechanical engineering

Modern manufacturing processes are highly complex. First, there is the pure "hardware," in other words, the machines, tools, clamping devices, equipment units and tool changers. For machining, it is important to know precisely which parts can be manufactured with which machines and tools as well as how absolute maximum efficiency and freedom from collisions can be achieved. And finally, all orders must be precisely controllable on the higher level – both within one's own company as well as at the suppliers. Only in this way can all resources be used optimally.

Digital process libraries in Tebis

A key characteristic of advanced simulation technologies is that they enable a detailed representation of the actual manufacturing environment in the virtual world, with no ifs, ands or buts. All machine types common to the market, from various manufacturers, are stored in the Tebis machine library with their geometrical and kinematic properties. The Tebis tool library contains all the tools that a company works with. Tebis also has a unit library for additional equipment such as jaw chucks or steady rests. The CAD/CAM system also includes virtual clamping devices.

Planning and programming with the virtual machine

Because the virtual world in Tebis is a 1:1 representation of the actual manufacturing environment, the benefits of simulation technology can be fully leveraged, from planning all the way to the shop. For example, potential collisions can be detected and corrected during planning – NC programming uses the appropriate setups, tools and orientations right from the start.

Integrated and complete collision checking

The simulator is fully integrated in the CAD/CAM environment. Simulation and collision checking can thus be performed before postprocessing. The unique Tebis machine technology makes this significantly more convenient, reliable and efficient than simulating the NC code and performing adjustments in the control-specific NC format.

True-to-life simulation

The CNC simulator checks the complete machining scenario: This includes machines, heads, clamping devices, axis and traverse movements and much more. In the shop, the machine operator finds information about blank and part geometries, setups and the tools used. And if the machining operation does have to be modified again at the last minute – for instance if a specific machine is down or if tools have been scrapped – this can be easily done. Changes to technology data such as feed rates or spindle speed, setups or the processing sequence up to and including processing on a different machine can be implemented quickly and easily. A renewed collision check is performed on the toolpaths with a mouse click and the results are output via the integrated postprocessors.

MES for efficient manufacturing management and digital order control

No matter how good the CAD/CAM software is, an integrated MES solution (Manufacturing Execution Solution System) is essential for anyone wanting to apply the principles of Industry 4.0 for completely digital and highly automated planning, implementation and control of their orders. The ProLeiS MES solution is therefore a permanent part of Tebis software development. The manufacturing environment, availability of resources, manufacturing knowledge, manufacturing duration and the results from past projects are stored here. In addition, all order processes, including materials logistics and deadlines, are also stored – not only those for one’s own company, but also for suppliers and service providers.

**Images**

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**Image 1**

*Reiner Schmid, head of Product Management, Tebis AG*

(Image: Tebis AG)

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**Image 2**

*The Tebis machine library contains more than 800 virtual machine models in 3,000 variants – including multi-axis machines such as turning/milling machines and lathes with a main and secondary spindle*

(Image: Tebis AG)

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**Image 3**

*In programming, the simulator and process libraries go hand-in-hand with Tebis template technology: The NC programmer uses the libraries and the manufacturing knowledge stored in the system and generates the NC programs based on templates.*

(Image: Tebis AG)

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**Image 4**

*Checking is performed before postprocessing. Time-consuming and cost-intensive startup processes are eliminated.*

(Image: Tebis AG)

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**Image 5**

*The CNC simulator checks all components, all positions and all movements*

(Image: Tebis AG)

**About Tebis 4.0**

Companies use Tebis software to organize and optimize their CAD/CAM process chains in manufacturing-intensive areas. They use Tebis systems throughout, from design and engineering to equipment and part manufacturing. They benefit from the unique strengths of Tebis to deliver high-quality products in the shortest time for the automotive, aerospace, machinery and equipment industries and appliance and medical equipment manufacturers.

**About Tebis**

Tebis AG is a global market and technology leader in the CAD/CAM and MES sector. With Tebis, customers can design, plan and manufacture models, molds and components efficiently, reliably and in the highest quality. Teams of experienced consulting and implementation specialists develop strategies for efficient and reliable CAD/CAM processes and implement them at customers’ facilities, ensuring a sustainable technological and competitive advantage.

Tebis software has an intuitive user interface that guarantees a high level of quality and reliability in manufacturing, even for highly complex parts. Thanks to the Tebis service offerings, customers can easily introduce new technologies and fully leverage the power of Tebis process solutions.

The company is headquartered in Martinsried near Munich, Germany, and has nine subsidiary offices around the world as well as distributors in eight additional countries. 350 employees worldwide support the company's customers, most of whom are from the automotive, aerospace and mechanical engineering sectors.

Automation has been a key factor in the Tebis formula for success for more than 30 years. Tebis views itself as an innovator for its customers on their path toward Industry 4.0.

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