Customer Interview: Simulation

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DONNER The Qualifactory

We are an owner-managed company based in Schorndorf (Baden-Württemberg, Germany). Our main business area is the CNC production of high-quality, custom components for various industries, such as the production machining, racing, aerospace, bicycle, e-mobility, and electronics industries. We use high-tech machine tools to machine a wide range of metals or plastics, with an accuracy down to the micrometer range.
www.the-qualifactory.com

In addition to contract manufacturing for our industrial customers, we also manufacture our own products. At our site in Schorndorf, we develop, manufacture, test, and distribute premium-quality motorcycle accessories under the Donner Tech brand – 100 percent made in Germany!
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Interviewee:
Herr Steven Donner
Managing Director

CNC machines are a big investment for a business owner. How important is generating reliable NC code and running reliable simulations to you?
It's true, investing in modern, powerful machines is a huge commitment, but at the same time it's an unavoidable one if you want to work with outstanding equipment. Creating a high-quality and reliable NC program is an absolute must, at least that's how I see it. There are two factors in play here. The first is that the machines only achieve maximum performance and efficiency if you use excellent CAM software. The second is that simulation represents a kind of "machine insurance" for us, which stops them from being damaged in the first place instead of paying for it afterwards.

You opted for *hyper*MILL® VIRTUAL Machining to generate and simulate your NC programs. What functions or concept that drives the technology clinched it for you?
When we first heard about *hyper*MILL® VIRTUAL Machining, it was clear more or less immediately that we wanted the product and also needed it to successfully improve our performance. I would say it was an instant decision. When we purchased another 5-axis machine, it was absolutely clear that this one was going to be operated with a VIRTUAL Machining postprocessor as well. The decisive factor was simply the fact that we could rely on it with much greater certainty than we could with the previous simulation – in other words, what the simulation outputs will also be an accurate reflection of what will actually happen. The number of uncertainties throughout the manufacturing process should be reduced to an absolute minimum, and the virtual machine helps us eliminate them.

When you compare the simulation solution with other systems, what does it mean when OPEN MIND talks about processing CAM information in the simulation, and what advantages does this give you?
I can give you an example here: the messages about collisions or component violations in the virtual machine are more accurate, as processing the CAM information increases the intelligence. Take negative allowances, for example: No collision warning is issued because this was actively set by the programmer in the job. This eliminates the need for the user to evaluate the simulation results beforehand. We often don't even look at the simulation, but rely solely on the result of the collision check. Then we know that everything is safe and no fatal collisions are imminent. Process reliability is usually a given anyway thanks to the proven strategies and parameters from the tool database. Of course, it is vital to work one hundred percent cleanly on things such as clamping in the machine and to recreate the virtual world with total precision. A deviation of even a few millimeters would immediately result in the program not being able to be processed. Logically, there is a risk of collisions, for example between the head and the table. In this respect, the virtual machine forces us to adopt even more structured and standardized processes – which is a good thing. However, with origin clamping systems, pallets, and standardized clamping

devices, creating a clamping setup exactly as planned in CAM is not problem at all.

In your experience, what are the biggest differences between CAM data-based and NC code simulation, and which technology would you recommend?
As I mentioned before, the biggest difference for us is that we can rely on the simulation results with much greater certainty overall. Having to perform repeated manual checks before releasing the NC program to ensure that everything has been done correctly is largely a thing of the past. This naturally speeds up the whole NC code creation process, and everything simply flows better because you can rely on the information. I can't recall any crashes or other collisions since we started using the virtual machine.

Has anything changed in your workflows since you started using VIRTUAL Machining simulation?
There have been quite a few positive changes. Start-up times have shortened, employee confidence in operating the machines has increased (they now have no worries at all), as has simulation quality and the quality of the mapped movements. There is also the decoupling of the collision check and many other things that I have mentioned before.

How long have you been using OPEN MIND's VIRTUAL Machining simulation, and how satisfied are you with it? Has the technology met your expectations?
We have been using VIRTUAL Machining since September 2021. After a short period of getting used to the different workflows, we are very satisfied. The decision to purchase it was very much the right one.

Visit our website to learn more about what a networked manufacturing environment can do for you.

www.openmind-tech.com/en/cmpgn/cam-vernetzung.html