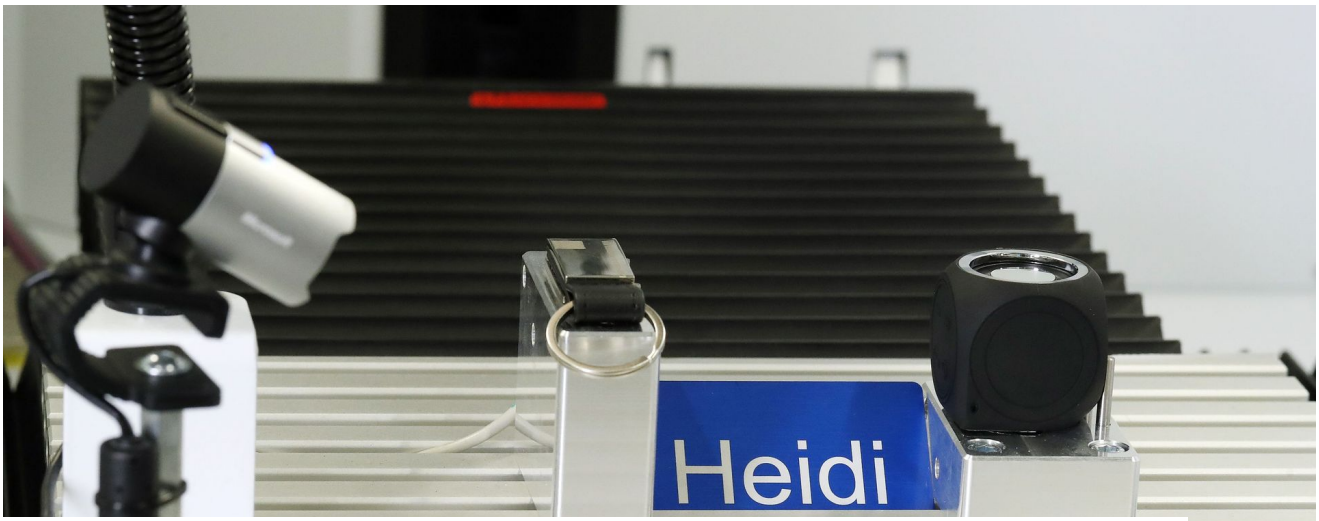

ATHANASSIOS KALIUDIS

How TRUMPF uses AI in laser material processing

TRUMPF presented a voice-controlled laser with artificial intelligence at the LASER trade show in Munich. How does it feel like to talk with a machine? And does that really make a difference in a production environment? Our author Athanassios Kaliudis reports on his encounter with the system.

In our homes she's called *Siri* or *Alexa*. She finds telephone numbers for us, sends dictated SMS messages to our friends, and plays the next song we want to hear on our playlists. In the world of production she's called *Heidi*. She opens the machine door, gives the instruction to start the machining process, and tells the operator when the component has been completed. After successfully making its way into our homes, artificial intelligence (AI) is now arriving in the production hall as well.

I got a chance to see this for myself a few days ago in Munich at the LASER trade fair, where TRUMPF presented a laser system equipped with AI: *Heidi*. It's easy to explain why Heidi is called Heidi: Her developers, Benedikt Rentsch and Torsten Ulmer, work at TRUMPF in Switzerland – and as we all know, Switzerland is the "Home of Heidi".

Standing in front of the AI-equipped TruMark Station 5000 I say: "Open the door." And voila – the machine's door opens. The nice thing is that Heidi responds to everything I say. She confirms my request by saying: "I will open the door." Now this may sound strange at first, but somehow it feels very right. A kind of dialog develops – and it's fun. Once I've inserted the component to be marked (I had the choice between a keychain and a small loudspeaker – I took the keychain), off we go. I say, "Start the marking process." Heidi does what she's told and soon replies, "The process is complete, please remove the part."

[HR1]Produktlink

Thanks to AI now almost anyone can operate a laser

Athanassios Kaliudis, Spokesperson Laser Technology at TRUMPF

Right now Heidi is "just" a part of a technology study and not yet a marketable product which TRUMPF can sell to its customers. But I quickly realized that AI represents genuine added value for laser material processing. And I believe that investing in further development here will be worth it. The next goal, says Benedikt Rentsch, is to enable the machine to

independently identify the part to be marked and choose the appropriate program using modern sensor technologies and image recognition software. It won't even be necessary to load the part in a specific orientation – the machine will be intelligent enough to automatically position the laser at the correct angle before starting the marking process.

I work in the Communications department at TRUMPF and have zero practical experience in the laser lab – and nevertheless: at the fair I was able to successfully mark a keychain in just a few short minutes! You can see how I did it in the attached video. The days are long gone when it took an experienced operator to click through the machine's operating software, a thing of the past. Thanks to AI now almost anyone can operate a laser – even a wordsmith like me!

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