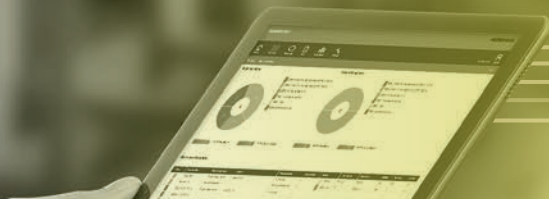




HEIDENHAIN
StateMonitor

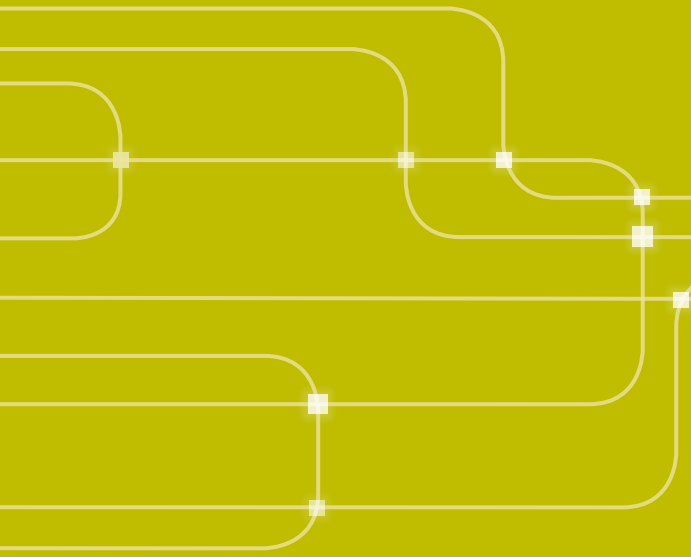
StateMonitor

Your machinery at your fingertips





HEIDENHAIN
StateMonitor



StateMonitor

makes production transparent

Acquire, visualize, and evaluate machine data: With the smart StateMonitor analysis software you always keep the status of your machines within sight.

How can I increase my manufacturing productivity? Is investing in a new machine tool worthwhile? How can I maintain an overview when operating multiple machines? These questions arise frequently, and aren't always easy to answer. HEIDENHAIN offers StateMonitor in order to make your operational processes more transparent and optimize your workflows.

The software provides a real-time view of the machines' production status. You maintain an overview at all times and can react quickly in case of faults. You can also access your operating data from a

smartphone or tablet, so it does not matter whether you are in a meeting, working in your office, or even outside of your company network.

Anyone who can avoid unnecessary interruptions and bottlenecks increases the productivity of his machines. The comprehensive notification and evaluation functions of StateMonitor are the basis for uncovering hidden potentials and increasing efficiency.

By the way: you can connect various machines through StateMonitor. It supports the protocol types HEIDENHAIN DNC, OPC UA, MTConnect, and Modbus TCP.

So you always have an overview of your machinery's productivity.

Facts and Figures

You get an additional 3168 hours out of your spindle if the productive machine time is increased by 15 % when operating five machines in two shifts.

10 minutes of undetected machine downtime per shift with five machines in three-shift operation over 264 days at an hourly rate of 80 euros **cost 52,800 euros a year.**

It takes just 3 minutes to connect your facility to StateMonitor over HEIDENHAIN DNC if your machine can be addressed over the network.

If you test StateMonitor 90 days for free on five machines, and thereby reduce your downtimes by 15 minutes per day and machine at an hourly rate of 80 euros, **then you have already saved the entire costs of StateMonitor including the control options.**

StateMonitor speaks 23 languages. And every user can choose his own language individually.

All machines with a TNC control version **starting from 2006 can be connected** through StateMonitor.

100 % of the data is available to you on your server, **without any obligation to use the cloud.**

HEIDENHAIN DNC, OPC UA, MTConnect, or ModbusTCP:
Your equipment can be connected to StateMonitor over four different interfaces.

“It’s got to work in the shop”

Interview with an expert

It all began with one question: How can companies use the HEIDENHAIN DNC interface to acquire their machine data? And then Simon Voit and his colleagues started developing the software now known as StateMonitor.

Mr. Voit, what role does StateMonitor play in a digital production department?

Everyone is talking about Industry 4.0. With StateMonitor it is now possible to visualize actual production data. Since we can do this so easily, the topic of acquiring machine data has become much more dynamic.

How much potential can StateMonitor uncover?

Experience has shown that a 10 % increase in productivity happens

almost automatically. However, nontransparent processes often harbor much greater potentials.

What do you personally like about the software?

Our approach from the very beginning was to offer a plug-and-play product. Once the machine is connected to the network and HEIDENHAIN DNC is enabled, StateMonitor is up and running within just three minutes.

What was the impetus for this project?

In combination with Industry 4.0 we wondered how we could provide a system for monitoring the machines with the control at the center of it all. As a machine builder and tinkerer, I place great importance on a pragmatic product—one that is absolutely practical.

What kind of feedback do you get from the users?

The best feedback for us is when somebody calls as soon as the software isn't available 24/7. Naturally we hoped that StateMonitor, with its intuitive user interface and visualization of data that was previously not accessible, would be welcomed. But we never expected that it would turn into a fundamental part of the IT landscape, perhaps even becoming indispensable. That really motivates us to develop it further.

What specific plans do you have?

In version 1.2 we added a job terminal to StateMonitor. In the next step we're working on maintenance solutions. Our basic principle is simple: we develop what the customer actually needs.



Simon Voit

Product Manager for StateMonitor

StateMonitor and Connected Machining

You must first lay the foundation if you want to digitally connect your production processes. HEIDENHAIN supports you with its Connected Machining package of functions. The control connects all areas accompanying your production process with each other—adapted to existing structures and open for future developments. Powerful features like HEIDENHAIN DNC, StateMonitor, Extended Workspace, and Remote Desktop Manager ensure efficient data management in networked production. This makes digital job management possible, making your work simpler with ease of data usage, time savings, and transparent processes.

The four pillars of Connected Machining

- 1 HEIDENHAIN DNC
- 2 **StateMonitor**
- 3 Extended Workspace
- 4 Remote Desktop Manager

StateMonitor – The features



StateMonitor
Your machinery
at your fingertips



Access over a web browser from various devices, such as smartphone, tablet, PC, or TV



Real-time notifications upon machine standstill, fault, or individually defined events



Visualization of your machinery including the machine status and the program currently running



Assignment of jobs to production facilities, job entries, and feedback on production quantities



Evaluation of machine downtimes and program run times as well as processing of metrics

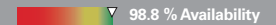
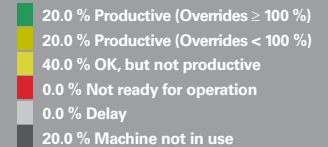
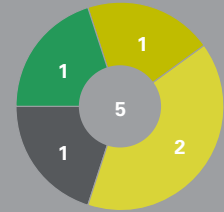


Machines connected over the HEIDENHAIN DNC, OPC UA, MTConnect, and ModbusTCP interfaces



Relaying to an external SQL database for processing of machine data in an MES or ERP system

Status overview of the machinery



Freedom

New machines and technologies are supposed to provide more freedom. That's very important to Václav Huta. The owner of the Czech tool builder Nafo has now networked his machinery with the StateMonitor software from HEIDENHAIN.



The morning fog is still hanging over the Czech industrial city of Strakonice as Václav Huta parks his adventure motorcycle next to the main entrance at Nafo. Nafo stands for “Nástroje a Formy” – tools and molds. The company has been producing aluminum die-cast tools since 1992, and added injection molding tools three years later. The location was not chosen by chance: **Strakonice has a long tradition of manufacturing tools for aluminum foundries. From here Nafo ships its products to the suppliers of Europe's large automobile manufacturers.**

The second door on the left leads directly into Huta's office. Each morning he checks his e-mails while the espresso machine is running. But now he can also check the status of his machines. Click! “It's what every owner dreams of,” he says, pointing to the overview of

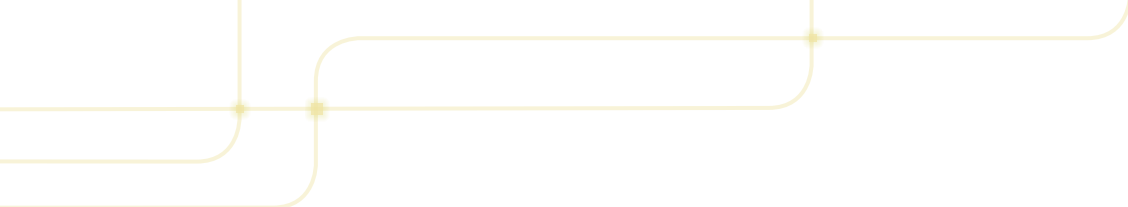


his facility as it appears on the screen. “It’s just fantastic, being able to see at any time whether and how the machines are running.” Click! A circular diagram appears on the screen, showing ten machines: three are colored yellow and the rest are green.

The data is presented by StateMonitor from HEIDENHAIN. Huta has attached all ten of his key machines to the system, from the eighteen-year-old Spanish CME to the modern SAMAG TFZ 3L and FPT DINOX 350. “The FPT was a Christmas present to myself,” he says with a sparkle in his eyes. The SAMAG (a roughing and deep-hole boring machine) and the FPT (which has a spindle changer and can therefore dynamically switch between roughing and finishing) are a serious advantage for Nafo. After all, these machines permit the complete manufacture of very large die-cast

and injection molding tools that Nafo mainly produces for the automotive industry. Nafo’s products are used by suppliers like Magna, KSM, or Gruber & Kaja, who in turn produce parts for BMW, Audi, Škoda, and WABCO. “The larger the machines, the smaller the competition,” says Huta with a laugh.

Václav Huta was twelve years old when his grandfather bequeathed a moped to him, in the firm belief that it would never run again. However, the nephew talked to his older neighbor and started trying this and that. It smoked like crazy, it stank to high heaven... and it worked! “Bringing a ruin like that back to life is a phenomenal feeling. The experience really had an impact on me.” Being able to resurrect the moped ignited a boundless enthusiasm in Václav Huta for machines and motors. First he studied them,



“StateMonitor means freedom, not just for me. But especially for my employees, who can now monitor their machines from anywhere during unattended operation.”

and then he left his hometown of Prague and joined Webasto in Vienna. After ten years he went to CAG Holding, and then became director of the subsidiary Nafo 2 in Slovakia.

After the Slovak tool maker, including the foundry, was sold, Huta moved on to Nafo 1 in Strakonice. He led the company for eight years and then assumed complete ownership three years ago. “I built Nafo into a larger company because I wanted to see what it was capable of. And when the time was right I bought it.” That didn’t change his style of leadership at all. “But now I have more

freedom.” If Huta wants to invest in a SAMAG or an FPT, then he does so without delay. The same goes for introducing new programs, including StateMonitor. His company is the first in the Czech Republic to use it. “Nowadays you have to act quickly in order to get ahead,” he states. Huta wants Nafo to grow, and so he must uncover hidden potentials.

In the end it is all about transparency: **where are the reserves in the company hidden, and how can they be utilized?** “We work in two shifts here, but an unattended third shift would be possible.” StateMonitor would play a very important role here. **The software could monitor the autonomous operations at night and on week-ends, and could record and present disturbances and machine downtimes.** “That is freedom: having an overview of my machinery

You'll find the video of this report at
www.heidenhain.com/statemonitor

no matter where I am. And my employees no longer need to stand next to the machines in order to keep an eye on them."

He repeatedly mentions the concept of "freedom" and how much courage it takes to use it as a business owner. What he means is: investing large sums of money. "Sometimes I'm moving along the edge," he says, choosing each word carefully. "But you have to dare to do things if you want to get anywhere." When the pressure gets to be too much, Václav Huta jumps on his motorcycle, where he has to fully concentrate on the road instead of thinking about work. "I'm physically exhausted after a tour, but my mind is then as fresh as a newborn's." That's when the ideas and ambition return. Just like back then, when at just twelve years old he brought a ruin back to life.



Voices

from the workshop

Spotlight on business owners and employees who are already using StateMonitor.

Information about the machine status, notifications in real time, staying in control of your data—there are numerous reasons for using StateMonitor. That's why it's important to go to the workshop, to find out what the users really need. Here we have statements from users, team leaders, and business owners stating precisely what advantages this software brings them.



“We can't put our data in the cloud, which is why we need monitoring software that works independently of the cloud. That way we retain control of our data.”

Štefan Čabra
Director at Schelling, Slovakia

“We use StateMonitor to transfer evaluations of machine jobs into our ERP system. The large number of parts involved in tool making makes it immensely important to evaluate individual job times and door-to-door times.”

Johannes Herzog

Team leader milling mold making at Toolcraft, Germany



“StateMonitor has made my job much easier while also giving me more possibilities. I can always check the situation in real time, without having to be anywhere near the machine.”

Federico Vidali

User and CAD/CAM programmer at RS Meccanica, Italy



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You'll find all information about
the StateMonitor software at
www.heidenhain.com/statemonitor

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