



## EMAG Industry 4.0 Solutions





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## Optimized production with Industry 4.0 solutions

Industry 4.0 is all about networking – networking between several system components on one hand, and between machines and the people who direct the value chain on the other. This is exactly where EMAG's new Industry 4.0 solutions come in, providing information to stay connected including to interconnect sensor, operating, and production data with the analysis and process expertise of EMAG engineers. The resulting Industry 4.0 solutions offer genuine value-added to our customers. Each of our Industry 4.0 projects has a specific focus:

- » Monitoring
- » Analytics / evaluation / control
- » Service and maintenance
- » Operations planning and scheduling

## MONITORING



### MultiMachineMonitor

**Full control of all manufacturing machines on a single system**

Ability to display the control panel of one or more machines on an external device such as a tablet, laptop or PC.



### MachineStatus

**The whole manufacturing process at a glance – all relevant manufacturing and energy usage data readily available anywhere, anytime**

Data regarding operations or energy efficiency for one or more machines is easily accessible at any time, on any device such as a tablet, laptop or PC.



### eQC Flux

**Measurement of the inductor foot voltage and magnetic flow**

Different error sources (e.g. loading with the wrong workpiece geometry, incorrect material, etc.) are determined through the analysis of the inductor foot voltage and if any error is found, the production process will be automatically adjusted accordingly.



### eQC RFID

**Inductor check and status monitoring**

Before manufacturing starts, eQC RFID checks to verify that if the right inductor has been used for the chosen machining program and what condition the tool is in. In addition, the remaining tool life and planned maintenance intervals are also monitored via an RFID chip in the inductor.



### eQC Quench Viscosity Monitoring

**Real-time monitoring of the quenching medium during the hardening process**

eQC Quench Viscosity Monitoring is a test procedure based on an ultrasonic sensor which constantly monitors the viscosity of the quenching medium and provides very accurate information on its quality.



## ANALYTICS / EVALUATION / CONTROL



### SolidProcess

**Optimization of the gear hobbing process through post-process measuring**

Quality is assured for the gear hobbing process with software that measures toothing post-process and then provides feedback of the measurements to the machine so it can quickly, and automatically correct any errors with the feed.



### LifetoolAnalytics

**Tool wear always under control**

Optimize the use and management of tools with LifetoolAnalytics, monitoring of the Lifetool tools for overloading and the state of wear.



### EC Data

**Workpiece tracking through operating, process and quality data**

EC Data facilitates the traceability of every single workpiece within one or more manufacturing systems. In so doing, all of the information regarding machining results is saved and documented along with the operating and process data of the machines.



### ToolStatus

**Detailed data collection and analysis of tool service life**

Reading of tool data available from a presetting device. In addition, this data is used to facilitate the evaluation of the service life/tool life quality.



### ToolStatus+

**Tool inspection by means of an integrated laser measuring bridge**

After a tool has been in use, it is automatically measured (cutting edge assessment) with the help of a laser measuring bridge which is integrated in the machine. Deviations due to wear are recorded.

## SERVICE AND MAINTENANCE



### Remote Experts

**Service-on-demand instead of on-site service**

In 50 % of cases, EMAG Remote Experts can find a solution without a service engineer having to be on site.



### Fingerprint

**EMAG Fingerprint allows you to increase the availability of your machines and your productivity, thereby reducing workpiece costs**

In the course of a detailed machine analysis using Fingerprint, the EMAG service engineer produces a diagnosis for you which provides information on the performance of the machine axes.

## OPERATIONS PLANNING AND SCHEDULING



### ProcessSim

**Virtual material flow of complex manufacturing systems**

Realistic illustration of all the material flow processes of manufacturing systems.



### VirtualMachine

**Bring complex manufacturing processes quickly and safely into the machine and optimize existing manufacturing processes**

Simulation of NC programs for the digital protection and inspection of complex machining processes.





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