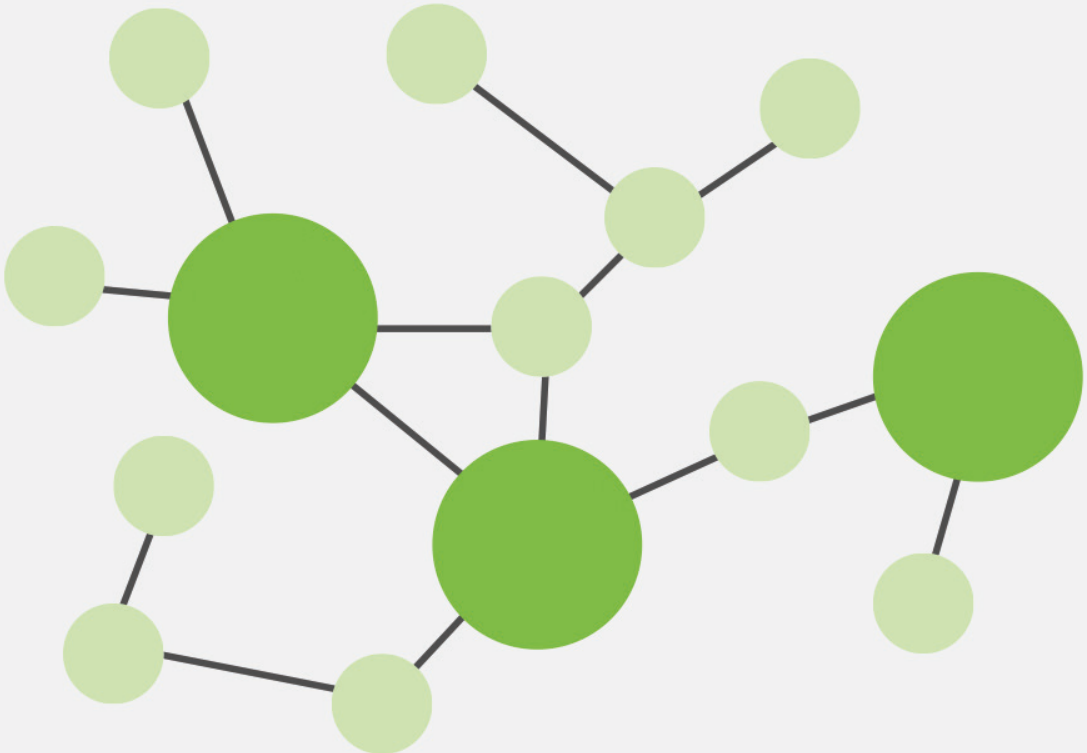
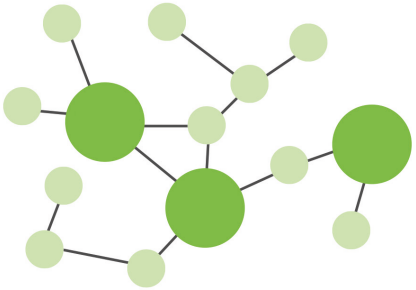
How to get started with the digital maintenance assistant

ai-omatic solutions GmbH



Overview



What is ai-omatic offering?

The software from ai-omatic acts as a digital maintenance assistant for machines and combines the expertise of an engineer with a powerful AI system. With our dashboard, you can precisely monitor the condition of your machines, including detecting anomalies, identifying causes of malfunctions and detecting faults at an early stage.

In this way, maintenance work can be carried out proactively when necessary to avoid costly downtime.

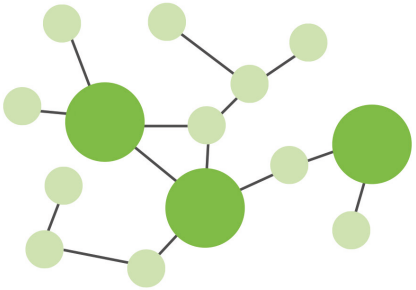
How does the technology differ from other providers?

As a standardised solution, our software sets new benchmarks in terms of scalability. After a one-time implementation, it can be easily extended to machines of the same design - a unique selling point compared to the offerings of competing companies. To detect anomalies, AI models are applied to production data in real time and results are clearly presented in a dashboard.

Why is the ai-omatic approach so successful?

- Low installation effort and costs: ai-omatic utilises existing machine data without the need for additional sensor technology
- Consideration of different data points: Our software monitors a large number of data points and can even monitor complex machines.
- Inclusion of external influencing factors: The maintenance assistant integrates external influencing factors such as operating modes and product compositions, which enables sensitive monitoring.

Project schedule



Duration: 4 - 6 weeks

1st project phase: Preparations

In the first phase of the project, the prerequisites for the use of the digital maintenance assistant are being established.

1.1 Data acquisition: For data acquisition, a connection between the data source of your machine and the ai-omatic Azure Cloud is established.

1.2 Configuration: We support you in the framework of a workshop. The aim is to define different hierarchical levels of your machine (sub-areas, components) on which the Health Scores are to be calculated.

Nach Abschluss der Vorbereitungsphase erfolgt die Übergabe des Wartungsassistenten.

ongoing

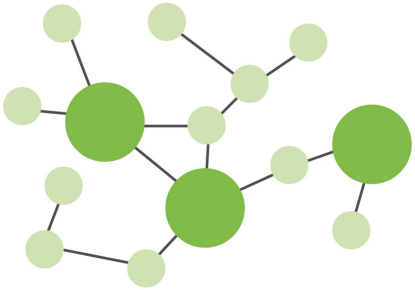
2nd project phase: Implementation of the application

In the second phase of the project, the introduction of the software into your maintenance process takes place.

2.1 Optimisation cycles: Every two weeks, all events from the operation of your pilot plant are discussed and incorporated into the model training.

2.2 Scaling: After the successful implementation of the maintenance assistant on the pilot plant, it can be seamlessly transferred to systems identical in construction.

Details about our data



What does ai-omatic need to know about my data for a well-founded analysis?

We need information about which data fields should be monitored, ignored or considered as external influencing variables. In addition, information about when the process reaches the desired state and the data corresponds to the normal state is essential for us.

What types of data can ai-omatic process?

ai-omatic can process numbers, decimal numbers, texts and true/false values. The software takes into account both sensor data as well as the engineer's expertise, which is entered via a user-friendly interface. By intelligently combining these data types, ai-omatic enables effective maintenance.

How does ai-omatic receives the data?

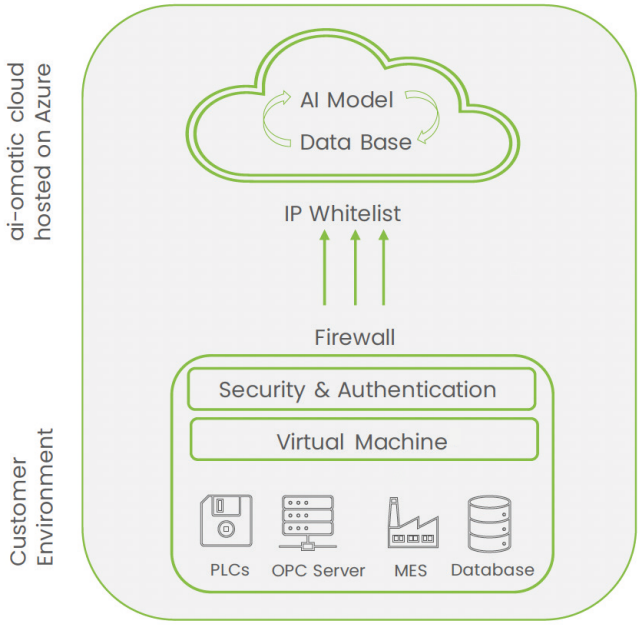
The machine data can be accessed via several solutions. Usually, the data is queried at the machine using the OPC UA protocol.

- Standard software solution from ai-omatic: Data is transferred from your machine to our Azure Cloud.
- IoT Gateway: Aggregates various data sources and is therefore ideal for retrofitting vibration sensors. The IoT Gateway supports mobile transmission to the ai-omatic Azure Cloud.
- Siemens Industrial Edge device: Communicates via software modules with all common industrial protocols and transmits the data to the ai-omatic Azure Cloud.
- MQTT-based custom solution: Enables the transmission of machine data from existing software in a defined format to an encrypted MQTT broker in the ai-omatic Azure Cloud.

Requirements

What technical infrastructure and requirements must be provided?

- Our software can be installed in any IT infrastructure without additional hardware.
- For the data connection client from ai-omatic, the technical infrastructure shown on the right is required.
- When running our data connection client on a virtual machine, a Linux VM and a VPN connection are necessary.



What do I need to start collecting data?

After you have identified a machine, plant, or process that you want to monitor using ai-omatic software, two steps are required. The goal is to continuously transfer your machine data to the ai-omatic Azure Cloud for analysis.

1. Option A: Provision of a virtual machine for the ai-omatic connection software or Option B: Installation of hardware
2. Establishing a connection to the OPC UA server of the machine, if necessary, network adjustments / port releases

We provide a detailed guide for performing these steps, which also considers specifics such as a proxy. After completing these steps, you are ready to start data collection.

Open questions?

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