



Plant i.T.

Process Control Systems. MES inside.

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Success Story // Beverage Industry // Ensinger, Germany

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ProLei.T.

by **Schneider** Electric

Refreshing: Vertical integration at Ensinger


How ProLeiT is increasing data transparency at Ensinger Mineral-Heilquellen GmbH. Ensinger Mineral-Heilquellen GmbH has been producing mineral water since 1952. The process control system Plant iT from ProLeiT has been doing a great job of automating processes at the company for some time now. When it came to closing the gap between the shop floor and the commercial level, the partnership was quickly renewed. Resulting in Ensinger being able to produce its refreshing drinks even more efficiently thanks to vertical integration.

Ensinger Mineral-Heilquellen GmbH was founded in 1952 by Wilhelm Fritz and his four sons, Eberhard, Otto, Wilhelm and Erich; and it is still a family-run business. In addition to the well-known brands “Ensinger Sport”, “Ensinger Naturelle” and “Ensinger Gourmet”, customers enjoy a range of juice spritzers, vitamin drinks and lemonades from the company based in the southern Germany town of Ensingen (Vaihingen/Enz). Supported by its roughly 170 employees, Ensinger recorded sales of approx. €48.5 million in 2020.

The approximately 124 million liters sold each year are filled at two PET lines and one large glass bottle line. Since the company’s goal is climate neutrality and environmental protection, its main priority is obviously supporting the use of returnable glass bottles. That said, the two PET lines use equally environmentally friendly Petcycle bottles.



Aerial view of the plant



Ensinger
... die Calcium-Magnesium-Power-Quelle

Info

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Production at Ensinger

End-to-end data consistency

ProLeiT and Ensinger enjoy a partnership that has developed over a number of years. The process control system Plant iT has been in use at Ensinger for quite some time now. And since the last migration to the current version 9 took place in February 2018, the plant is also cutting-edge in terms of process control technology.

And now it was time to close the gap between processes on the shop floor and the commercial level. Keyword: Complete vertical integration. For filling processes, a production and fault data acquisition system was required that provides production data, such as produced quantities and downtime periods, to the ERP system via an integrated interface. The plan: To implement Plant Acquis iT as the line management system (LMS) for the filling and packaging lines in conjunction with version 9 of the manufacturing execution system (MES). The goal: To ensure increased transparency and complete data consistency and to identify any weak points and future potentials for optimization. And, in doing so, to automate the previous paper-based processes.

Stefan Ruff, Project Manager and Deputy Head of Dairies & Beverages at ProLeiT, sums up one of the requirements: "The designations of raw data in the process control system differed slightly from those in the commercial system. For the operators, the nomenclatures were clear, but the process control system was unable to communicate properly with the commercial level, which is why a correction was necessary."

Automated data acquisition

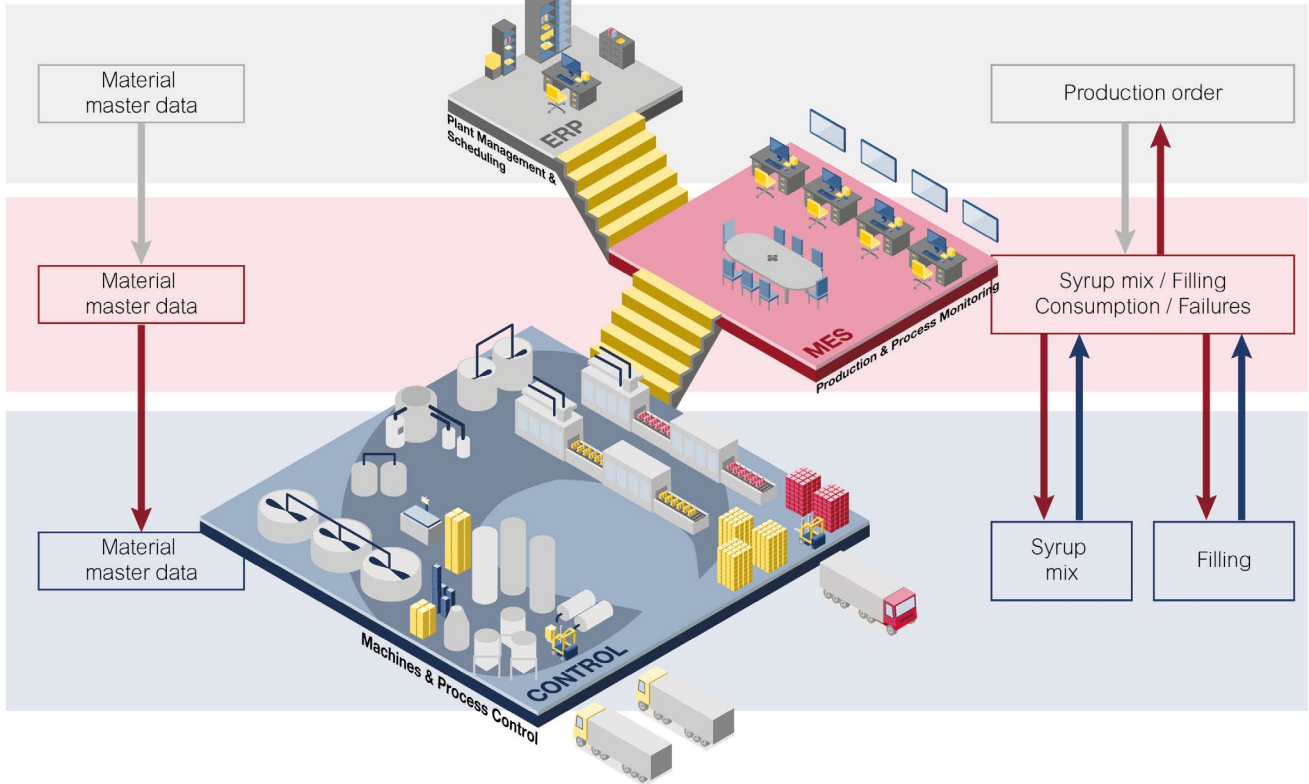
Implemented as planned: The add-on Plant Acquis iT LMS acquires downtime periods and the causes of plant and machine downtime in an integrated and automatic fashion. This allows Ensinger to extract the information that previously had to be painstakingly searched for in the paper shift logs - with the added advantage that the collected fault data can be analyzed minutely across all levels thanks to the drill-down functionality. Moreover, in order to identify possible weak points in the filling line, Ensinger can now carry out comprehensive analyses over longer periods of time. To do so, all fault and production data are transferred via a standardized interface to the higher-level manufacturing execution system, where they are available for further mass data evaluations.

By coupling the MES to the existing ERP system, the interface is now able to transfer material master data and bills of material to the existing PCS in addition to the production orders. Further, the production orders are broken down into one order for the syrup room and one for filling and then transferred to the new line management system. As a result, Ensinger benefits from increased transparency and data consistency, ranging from ERP through MES to the shop floor.

In return, the subordinate systems from the syrup room still deliver corresponding raw material consumption data as well as produced quantities to the MES. Along the entire value chain, the MES analyzes all downtime periods, line conditions and production data and summarizes them in an overview based on OEE (overall equipment effectiveness). When explaining a decisive advantage, Stefan Ruff says: "Since all data are maintained at a central location in the ERP system and transferred from there to the subsystems, isolated solutions cannot arise. Deviating master data at the facility are thus a thing of the past."



Ensinger product portfolio



The typical three levels of a beverage producer

Real-time challenge overcome successfully

Although the whole project went smoothly, there was one particular challenge to overcome: Since the bottle inspector data were not delivered in real time but still had to be linked to the production orders, correct connection to the commercial system as well as the bottle inspectors was not possible at first. Although the data were acquired in real time, they were only written to the existing database every few minutes, which led to variations in the meter readings of the filler and the inspector. Thanks to the experience of the project managers at ProLeiT in this area, however, the problem was quickly identified and resolved.

Gap closed successfully

Implementation of the LMS and MES was completed successfully and fully in the fall of 2019. Today, Ensinger Mineral-Heilquellen GmbH benefits from being able to electronically acquire all production and fault data of the filling process. Wolfram Suhr, Plant Manager at Ensinger, only has positive things to say about the renewed cooperation with ProLeiT: “The gap between the commercial and process levels has been fully closed.” Thanks to the increased transparency and data consistency, the family-run business is now in a position to consistently and systematically identify potentials for optimization.

As a medium-sized company, Ensinger further benefits from the simplicity of the solution and its modularity – it is cost-efficiently adapted to individual needs and, if necessary, as Suhr explains: “All our options are still wide open.” And so the successful partnership with ProLeiT continues. Thanks to the connection of the process control system to the MES and thus to the existing commercial level, the next project is already in the pipeline.

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