

Fully Automated Tea Time: Efficient Migration of a New Process Control System

Reprogramming of the dosing unit for tea manufacturer Martin Bauer has provided ProLeiT with fertile ground for continued cooperation.

The Martin Bauer Group is part of the internationally operating group “the nature network®”. With over 3,500 employees worldwide, the third-generation family-run business based in the southern German town of Vestenbergsgreuth is one of the world’s largest suppliers of tea products and their herbal raw materials. From aniseed or apple to a zest of lemon grass happiness: a wide variety of blends and recipes is used to transform several hundred different raw products into herbal and fruit teas, medicinal teas, flavoured black and green teas, rooibos teas and many more besides. These products are then shipped to the company’s customers, including many of the largest and most renowned suppliers worldwide, where they are subsequently portioned, packaged and sold to retailers. The success of Martin Bauer in the global tea and tea product market is based, above all, on two key elements: precise and always reproducible results for respective tea blends and very high quantity sales.

A central aspect of this production efficiency, which is in need of constant optimisation, is the entire field of process automation. The main goal is to harmonise the individual processes involved in the blending and formulating of tea products in such a way that the specific recipes can still be produced with maximum efficiency and effectiveness without compromising the high level of quality and mixing precision.

New control system at a glance

The initial joint project with ProLeiT came about when the main contact of the former automation partner was unable to deliver the availability demanded. From the perspective of Martin Bauer, the support for the old process control system was insufficient and inconsistent. Problems controlling and coordinating the system started to increase and the level of service began to deteriorate noticeably. Martin Bauer therefore needed to ensure the quality of its automation remained at its accustomed level and future modifications could be performed as independently and flexibly as possible. The idea to purchase a new control system started to come to fruition. Konrad

Ohlmann, a production manager at Martin Bauer, remembers: “We got to know ProLeiT quite by chance at an exhibition. While still at the stand, we already had a very good feeling that this company along with its control system and its unique and experienced workforce could meet our demands and needs.”

Seeing as Martin Bauer was in the process of restructuring both its SAP and energy management system, the company was quite prepared to envisage changes associated with a new system. In addition, the company was also contemplating whether to assign system programming separately instead of to the plant manufacturer, as had previously been the case. “It was quite obvious,” says Verena Mersmann, a sales engineer at ProLeiT for the Pharmaceutical, Food & Chemical sector, “even during the initial approaches that we were on the exact same wavelength. A spirit of mutual trust, which is so important for a long-term partnership, was forged with Martin Bauer in next to no time, and I believe this strong “bestowed” trust has remained a central element of our collaboration.”

INFO



publisher: publish industry
edition: 10/2017
author: Verena Mersmann

Reprogramming of the dosing system

A worrying aspect for Martin Bauer, in particular, was the level of software support for the dosing unit – in spite of the fact that the existing control system had always operated without any major problems. The plant layout dictates that the required components can be dosed from several big bag stations. Their contents are then blended in batch quantities in a number of mixers



Big bag dosing station of tea producer Martin Bauer in Vestenbergsgreuth

application profile

Martin Bauer

before being refilled into big bags or sacks as a “finished” product. The link between the raw material and the packaged blend is achieved through the software after scanning a barcode that is assigned to each big bag individually and used by the company to uniquely identify them.

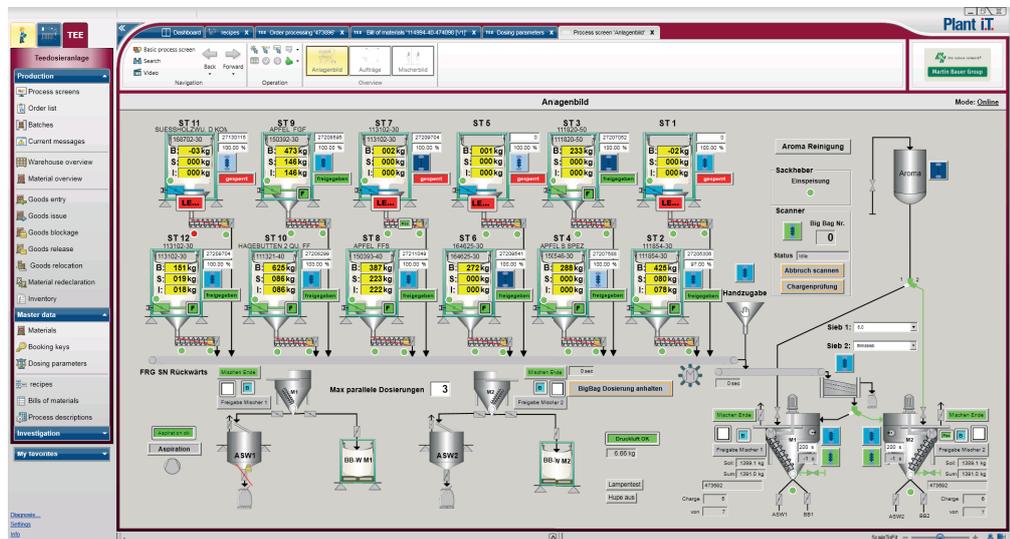
According to the wishes of the customer, the task for ProLeiT was to, first and foremost, transfer the functions of the old control system to the new Plant iT control system from ProLeiT. Markus Wißmüller, project manager “DOS plant” at ProLeiT, says: “The benchmark for successful reprogramming of the plant was implementing all of the plant functions and the basic production techniques one-to-one into Plant iT: this really had to be compiled exactly the same as the previous version. A real challenge for us, also from a programming perspective, especially when you consider that the existing system was very well suited to the demands of the dosing unit.”

The exceptional flexibility of Plant iT was once again demonstrated while successfully transferring all the mixing plant functions. Although ProLeiT is not afraid to admit that it may have initially slightly underestimated the amount of work required. “We believed that we could accommodate more system functions with our standard solution,” claims Thomas Wolf, head of the Pharmaceutical, Food & Chemical II department at ProLeiT: “However, the standard procedures are not necessarily decisive for the layout of the control system but primarily the “exotic ones” that determine the size and complexity of the task. As a result, a few tweaks were required even after incorporating the very rarely produced tee recipes. In addition, the plant operators were not prepared to give up certain manual intervention parameters in favour of a 100% automated system.”

Reprogramming of the dosing system

The “dosing unit” project kicked off in May 2016 and full-scale implementation and conversion to the new system was already completed by the following September.

Based on the principle used for the dosing unit, the company is currently in the process of adapting the relevant software for an additional existing system (specifically for peppermint blends) to also guarantee extensive service in this area. “In this case,” says Markus Wißmüller, “the challenges are straightforward, as the range of components is far less than with the dosing unit.” ProLeiT has once again been commis-



Process image of the big bag dosing station for raw materials

sioned to carry out the required modernisation of the interface hardware to the existing periphery. Within this context, collaboration with a proven Martin Bauer partner responsible for providing services for control cabinet construction, cabling and respective components lent itself nicely to ProLeiT.

Further, Martin Bauer is attempting to optimise the energy management system as part of ISO-50001 certification. While meeting the aim of recording and evaluating all of the energy consumption data through the support of ProLeiT and its energy management system Plant Acquis iT EnMS, all of the existing meters are to be connected to the new control system and the setup of future possible metering stations for data recording examined.

Moreover, ProLeiT has been commissioned by Plantextrakt, a further business unit of the Martin Bauer Group, to install comprehensive operating data recording for the batch assignment of individual plant components; up to now, this data was captured using several systems. The main aim at the moment is to be able to track every batch, primarily to trace potential sources of error.

The fact that motivation for the upcoming activities is as high as ever can, according to Verena Mersmann, be attributed to the “special relationship” to the new partner: “Through the success of our work, I believe we have been able to pay back some of the trust we felt Martin Bauer had placed in us. A few more successful projects could see us addressing

each other at eye-level!” Oliver Sicka, head of production sector 3 and manager of the “dosing unit software conversion” project at Martin Bauer, is also delighted and wishes to thank ProLeiT for its particularly fast and reliable support: “The factory acceptance test showed that ProLeiT had been able to implement all of the project goals successfully and on time. However, as so often in life, it was impossible to consider every little detail in advance and ProLeiT faced a couple of extra challenges along the way. But what I can say with certainty is that we could always rely on fast, twenty-four-seven support.”