

Migration PCS7 to Plant iT

System Change - ProLeiT migrated at Münzing Chemie GmbH PCS7 to Plant iT without replacement of the hardware but just by replacing the software

The control system of the Münzing Chemie GmbH in Heilbronn/Germany had reached the end of its capacity. Although recently installed, the six S7-400 type controllers with PCS7 as control system could not accept any additional functions, the licensed number of variables was already exceeded. For a planned extension, the system manufacturer had offered a new version of the PCS7 control system and a hardware upgrade of the S7 CPUs from type 416 to type 417. As an alternative, ProLeiT offered just the replacement of the software to provide space for extensions that provided the basis for the batch functionality and completed the whole conversion after a short configuring with only seven days downtime.

Münzing Chemie GmbH has its main office in Heilbronn and subsidiaries in Italy, Spain, Belgium and the USA and supplies additives for colorants, adhesives, construction chemistry, leather processing and the paper industry. The company began to automate its production in Heilbronn and wanted to upgrade its plants. However, this could not be realized as planned, as this was no longer possible with version 4.0 of the existing PCS 7 system for several reasons: the licence for the number of variables had already been exceeded and the manufacturer declined to guarantee further secure operation. Further, the installed version could no longer be upgraded and therefore a completely new version was necessary. In addition, the 416 CPUs of the subordinate S7 controllers would have had to be replaced with the 417 type.

When ProLeiT received the contract for the migration of this plant to its own Plant iT system, the primary goal was to convert the existing functionality 1:1 and add smaller extensions. In addition, the operability should be simplified, and more clarity provided for the visualization. The Direct iT modules, for the process control functions, and Acquis iT, for the production data management, were used. The secondary goal was to prepare the system for the installation of the Batch iT module with integrated materials management and order management and so permit a batch operation of the plant. This also provided the basis in future to accept production

orders from the operational SAP system and to add these directly to the order management of the batch system.



Even in the preliminary phase, after a comprehensive analysis of the current situation, ProLeiT guaranteed that the required functionality could be realized on the existing hardware. Only the already planned replacement of the communications processors in the controllers, required because of the necessary replacement of the Ethernet transmission protocol from H1 to TCP/IP, was performed. For availability reasons, the hardware of the computers for the six installed explosion-proof terminals was also replaced. Three explosion-proof terminals, five operator stations and the server for the complete operating level were added.

After rewriting the application software as 1:1 conversion of the existing functionality, the software could be loaded without problems into the existing controllers. Only the process pictures were revised and their number reduced. This led to a simplified operation and provided more transparency and clarity. Positive for the acceptance of Plant iT was that changes and extensions are largely possible online, without the complete plant, or at least the affected lower-level controller, needing to be shut down. Another important aspect for the decision for Plant iT was that the system, also later for the planned recipe control with Batch iT, after a power failure or emergency off automatically resumes operation at the position in the execution sequence where it was previously.

INFO

MÜNZING 
CREATING ADDITIVE VALUE

Company: Münzing Chemie GmbH
Sector: Chemistry
Location: Heilbronn
Country: Germany



Just through the replacement of the software, the plant automation received improved functionality and operability. In addition, it remains expandable, which had its only reason in the different structures of the user software between PCS7 and Plant iT and the resulting space requirement in memory.

The true challenge in this project was its size with six large controllers and the time available for the reconfiguring and the commissioning. The realization took four months, with an interruption during the Christmas holidays. Dipl.-Ing. Peter Krawczyk, engineering manager at Münzing and

application profile

project manager of the customer, summarized:

„All reservations whether size of the project could be mastered in this short time vanished after the successful commissioning.”

For the realization of the project, both the clear structure of the ProLeiT software and also the successful mixture of project staff with industrial process training and those with a electrotechnical training, won much time. Once again Krawczyk: „The cooperation at all times, namely before, during and after the commissioning, was very cooperative and professional. We are already planning the integration of additional not-yet automated production areas at the Heilbronn location in the ProLeiT system“.