application profile

Consistent automation with coupling to SAP

Even more important than the consistent automation for the operators of a plant for the production of powder-form aromas was the coupling of the implemented process control system to the supervisory SAP production planning system. Namely, it should be possible to load these recipes directly into the process control system, and from there control, coordinate and document the jobs, and then return the process-related data as messages to the SAP R/3® system.

Sweet or spicy? Silesia Gerhard Hanke GmbH & Co. KG is responsible for questions of flavor. The company from Neuss manufactures liquid and powder-form aromas for the food industry. With the construction of its new plant in Kalkar, Silesia moved the manufacturing of the powder-form aromas that had reached capacity limits at the main plant to the new factory. The move also brought a change to the automation of the plant. Namely, the attempt to apply the existing solution that Silesia uses for the liquid production to the powder production had proved to be less than optimum. This system only partially covered the industrial procedures and the logistical particularities as demanded for the manufacturing of the powder-form aromas in batch production.

Furthermore, Silesia also wished to include the open and closed-loop controllers for more than 20 plant sections and components – including, a multi-component metering system, granulators, an aroma boiling unit, the filling of the aromas and many manual weighing areas – to the process control system. To integrate all these resources, only a process control system that provided a consistent automation of the powder production that takes account of the peculiarities of this technology and, in particular, permits the coupling to the PP-PI (Production Planning - Process Industry) SAP module could be considered to be a solution. Because, the complete manufacturing process was to be exclusively represented in the supervisory SAP R/3 production planning system. The planning recipes would be passed job-related as control recipe to the process control system, which itself does not manage any recipe structures, and the SAP plant again would receive the process-related data in the form of confirmations from the process control system.

Silesia commissioned ProLeiT AG from Herzogenaurach with the realization of this task. ProLeiT, which in addition to its competence in the automation of batch processes, can demonstrate particular experience in interfaces to supervisory production planning systems. As the software partner of SAP, ProLeiT has developed a certified interface to the SAP R/3® PP-PI module. For the project in Kalkar, ProLeiT used a special batch server together with its ProLeiT OS-NT process control system that coordinates the individual steps of the jobs running in parallel. The process control system visualizes the process pictures, job lists and selective component lists, the active metering tasks, master data, and production and container states, etc. In addition to the automation and process visualization, the ProLeiT IDS Industrial Data Server also records the operating data of the individual machines and plant sections in various categories and documents them job-related.

This control engineering solution now permits Silesia to plan all production steps in SAP, and to pass the manufacturing jobs with quantity details and recipe details to the process control system. The process control system controls the production steps, provides precise instructions to the operating personnel and checks that the jobs have been performed correctly. This procedure practically avoids any operating errors. Previously, the operating staff themselves had to decide which machines or plant sections to use to perform a production step. The SAP system now makes this decision. Its production planning module determines which aromas are to be produced and when, and schedules the appropriate capacity calculations. The process control system realizes the specified recipe steps, monitors the plant state and calculates the current availability of the plant sections planned for the job.

In practice – for example for the filling of a container of the multi-component metering system – the operator initially identifies himself with a barcode scanner to the process control system after the job assignment. In this case, he then scans in the job number and the number of the container. The control system now checks whether this container can be used. This decision depends on the current product type of the job and the cleaning status of the container. Should all conditions be satisfied, the control system passes the current data, such as material, planned quantity and various metering parameters, to the process control. A signal lamp signals a green light to the operator. The process control system monitors the process, documents the job status, the raw materials consumption, the product quantities and resource-related production time in a traceable form, and sends the process-related data as upload to the SAP system immediately after the job ends.

This closes the loop. The coupling to the process control system now includes all business areas in the automation process and ensures both a transparent and economical production.

INFO

Silesia

Company:	Silesia Gerhard Hanke GmbH & Co. KG
Sector:	Others
Location:	Neuss
Country:	Germany