

# application profile

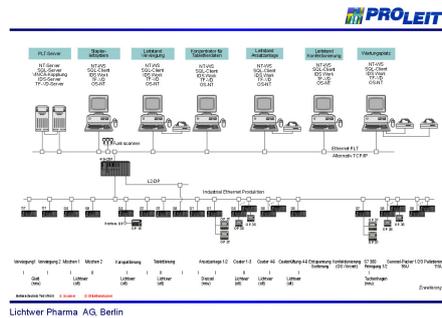
## Consistent automation of the coater

Economy, flexibility and reliability – these are the requirements that a production plant can satisfy only with an integrated view of all business and production processes. All business areas must be included in the automation process, and a fast information flow in the complete value-added chain is necessary.

The Lichtwer Healthcare GmbH & Co. KG in Berlin integrated the heterogeneous automation solutions from approximately 20 subareas through the use of a process control system to provide a consistent overall solution. The coupling to the supervisory ERP system was also provided. As one of the leading manufacturers of plant-based medication, so-called phytopharmaceuticals, the Lichtwer Healthcare GmbH & Co. KG in Berlin has made a name for itself on the international pharmaceuticals market, in particular with its Kwai@garlic pills and the Saint John's wort preparations Kira® and Jarsin 300®. When the company moved its production, including the production management, to a new building, it also put new machines into operation in addition to taking the production plant from the old factories.

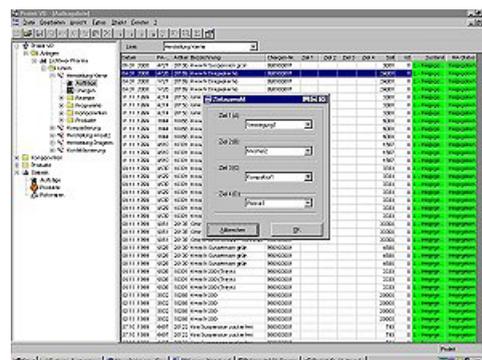
The control and visualization of the approximately 20 subareas of this production plant, for example, weighing, mixing or preparation, was realized by various suppliers. Thus, each of these individual subareas has its own specific automation solution. These „insular solutions“ should now be integrated over the complete production flow. In addition, the task of connection to the supervisory Charisma ERP system from GUS, Cologne was required. Frank Wiedemann, project manager for the Lichtwer Healthcare GmbH & Co. KG said „Only those partners were considered that could provide the required competency for the coupling“ and this was the important criterion for granting the contract.

ProLeiT AG that was assigned the realization of the process control system, convinced the Berlin company with its experience in the coupling to SAP/R3® and the interface certified for the PP-PI SAP module. The software specialists from Herzogenaurach in Germany were also required to adapt their process control system to the specialized production procedure. Namely,



phytopharmaceuticals are not produced on a continuous production line but in independent production steps, each of which must be started manually. In addition, existing subordinate control systems performed the control and visualization of the 20 different subareas at the process level. An integration of these specific automation solutions over the complete production process becomes only possible through the use of a process control system. „However, a special feature of this production plant is also the operating philosophy using wireless terminals.“ said Klaus Diekmann, the project manager at ProLeiT. The control system selected by Lichtwer had to provide this flexibility.

In addition to the ProLeiT OS-NT process control system, the ProLeiT IDS Industrial Data Server and the ProLeiT VD software module (weighing and metering) are used as the technical system solution. The production lines are operated using six workstations with the Windows NT 4.0 operating system. The heart of the process



**INFO**



**Lichtwer Healthcare**

**Company:**

**Sector:**

**Location:**

**Country:**

Lichtwer Healthcare GmbH & Co. KG

Pharma

Berlin

Germany

control system is a Microsoft SQL 6.5 database system that runs on the redundant server pair. The personal computer and the head station of the process control system, a Simatic S7-400, which are also used to communicate with the production plants, are interconnected via TCP/IP. With one exception, Profibus DP, the subordinate controllers were interconnected using Siemens Industrial Ethernet.

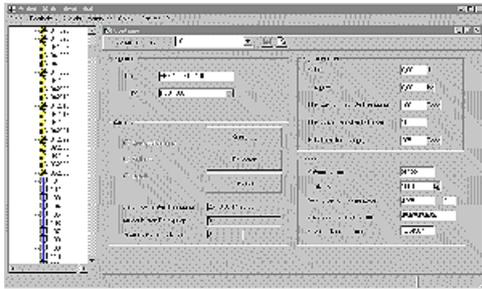
Two interfaces are used to couple the controllers to the process control system. Plant states, counters and measured values, and messages that result in the controllers are transferred over a unidirectional plant data acquisition interface, and archived by the process control system. The bi-directional industrial process interface controls the batches. The system can use the ProLeiT VD module to monitor the running of all the processes and control the functions linked in the subordinate controllers. The process control system provides the start command and supplies article number, setpoints and control parameters. In reciprocation, the controllers report the current states and actual values.

In addition to the mentioned base functions, there also exist supervisory functions that are managed in the head station of the process

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control system and run only in the system. These include, for example, the identification and reservation of containers. Or the system checks whether one of the cabins that contain the separate individual production areas is occupied, and, if necessary, initiates the cleaning of the space. A module is also linked to the container and space administration in the process control system. This also monitors the pharmaceutical stainless steel containers that are currently passing through the production and the pharmaceutical spaces. The VD module also uses this database for further information for the production.



This resulting horizontal integration was one of the demands made on the system. Lichtwer Healthcare GmbH & Co. KG was also interested in the cross-level integration. For this purpose, ProLeiT developed a powerful standard interface to couple to the Charisma Enterprise Resource Planning System (ERP) from GUS AG, Cologne. The system schedules the production process, generates a batch number and sends the production jobs (including the master recipe) to the process control system. This places the jobs in a job list and controls the running of the base functions in the subordinate controllers using the industrial process interface. In accordance with the job structure, the individual production steps were combined into four lines – the production of the tablet cores (weighing, mixing, pressing), the manufacturing of the batch for the suspension and isolation, the forming of pills from the cores, and the preparation and packing of the pills in order to also represent the logic of the individual work steps in the system.

After the jobs have been released, the operator at the control console starts the production. He decides in which spaces the job is to be produced, and instructs the personnel at the production plants. The process steps within the production areas are operated using the wireless terminals with an integrated laser scanner. To report to the system, the operator scans the

number of the space in which the job is to be processed and also identifies himself with his personal identification number. Provided that the employee has the appropriate authorization rights, he can operate the process steps locally, such as selecting the container or scanning material.

Once the system has performed a test, the system informs the operator via the display at his wireless terminal of the release and then provides instructions for further processing. This avoids practically any operator errors occurring.

The system also especially serves to secure the quality assurance. Namely, because the production data is printed on a barcode label after each step, which is then affixed to the transport containers. Each step is documented exactly and thus can be traced precisely. In addition to the completeness, this also provides Lichtwer Healthcare GmbH & Co. KG with the necessary transparency for the highly-flexible plant in the production processing. Frank Wiedemann, the project manager, pointed out „This new concept enabled us to provide a 100 percent representation of the batch documentation in accordance with the GMP regulations and plan a visionary Electronic Batch Record (paper-less batch documentation)“. This underscored how important reliable and optimally prepared information is for management decisions.