



Reference Report



MES software cronetwork
at SCHOTT AG

SCHOTT Pharmaceutical Packaging trusts in MES
specialist Industrie Informatik:
“Today cronetwork is our MES standard solution”

SCHOTT PP

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SCHOTT Pharmaceutical Packaging (SCHOTT PP) is a world-wide leader in primary packaging for the pharmaceutical industry. More than 600 production lines in 15 nations worldwide annually produce more than 7 billion syringes, vials, ampoules, cartridges and specialized articles made of tubular glass or plastic. First-class raw materials, mastery of processes, modern technologies and continuous research and development enable innovative product solutions that meet stringent customer demands. SCHOTT PP customers include leading enterprises of the pharmaceutical industry. To further establish and enhance their market position, SCHOTT decided to introduce

“The flexibility and solution-oriented approach of the IT-provider guarantees us successful, optimal implementation of our wishes and requirements for the future as well.” Jörn Volckmann, head of IT, SCHOTT Pharmaceutical Packaging

the MES solution (Manufacturing Execution System) cronetwork by Industrie Informatik. SCHOTT has been successfully working with Industrie Informatik for years. cronetwork is already

successfully in use at nine locations in various segments such as optical industries, precision materials, and solar and home appliances.

THE INITIAL SITUATION

The goal of introducing MES solution at SCHOTT PP to support the global optimization strategy and the standardization of production processes as required by the pharmaceutical industry in all plants in the sense of lean management. “We expect primarily improved and detailed utilization and evaluation of our data and that data are automatically available, so that we can achieve successive productivity improvement,” explains Jörn Volckmann, head of IT at SCHOTT PP, explains the introduction of the validated and SAP-compatible MES solution cronetwork. Further, comparability of key performance indicators (KPIs) was to be assured across all plants. The MES,

especially the module PDC (plant data collection), will be used across plant boundaries to provide automatic collection and evaluation of the data, so that in the future at every plant exactly the same values are collected. Volckmann identifies another very important reason for MES introduction: “Until then we had a media inconsistency between our central SAP system and the seven different production systems. Today cronetwork is our connector with bidirectional communication between SAP and our local production systems.”

THE CHALLENGES: DIFFERENT PRODUCTION SYSTEMS AND NO STANDARD

Before the introduction of cronetwork the company had the problem that the data necessary for production management was available only in the production systems. Huge effort was necessary to process the production data for management and this proved to be error-prone. “This was a significant reason why we wanted to implement automated data transfer. This enables us to improve the reliability of the numbers and better control production.”

Another challenge was that production occurs in different product groups running on different machines with different control systems. In addition, the machines were not standardized. SCHOTT PP has 600 production lines worldwide that are identical in their basic structure, but they did not deliver reliable or identical production indicators. As Jörn Volckmann explains: “We did not have the required counters everywhere. We had both camera systems and manual measuring systems in operation. In total, we had a multitude of differently equipped machines.” In the course of MES implementation, they first defined a minimum standard to be met for all machines in order to enable collection of the planned indicators and thus full exploitation of the potential of MES. Likewise at the end of the production chain, in packaging, there was optimization potential for MES. “We had to handle a huge manual effort,” explains Volckmann. The collected data was transferred manually to the SAP system. To reduce this effort, in the realm of the MES project, jointly with the experts from Industrie Informatik we devised and implemented a scan solution for the packaging area. Now data collection is via mobile scanners and an HTML interface with a broad range of validation functions. Finally, the individual products are scanned when they are put on pallets; this enables exact and automatic feedback for output.

IMPLEMENTATION OF CRONETWORK, A SUCCESS STORY

“A contributing factor to the success of the MES project was that we allowed sufficient time to define the requirements for

- 1 Schott PP produces in 15 nations worldwide.
- 2 High customer demands in pharmaceutical industry require innovative product solutions.
- 3 Jörn Volckmann, head of IT at SCHOTT PP



the software installation. On the basis of the requirements, we then launched the development and introduction of the overall system," Jörn Volckmann summarizes the MES introduction. We worked for nearly two years on the concept and design. Here we endeavored to involve the viewpoints of small and large plant locations in different nations.

From there we developed our customer specifications, which formed the foundation for the development and worldwide rollout. Jörn Volckmann comments: "We chose our plant in Hungary for implementing the pilot because this plant has the greatest product variety with very different production systems. Thus we covered a broad spectrum, which facilitated the rollout in other plants." The pilot implementation itself took approximately one year, and the process standardization almost another year. After its successful introduction in Hungary, cronetwork was implemented in Germany and Switzerland. The next rollouts are planned for Mexico, France, Brazil and USA. "Clean change management was important to us," says Jörn Volckmann. "Here every change goes through a change management process; i.e., we check what effects the planned change has on the system. We have clear decision guidelines for how changes are implemented, what is nice-to-have and what is to come in a later stage. Before a system is finally put into production, for each installation we conduct at least two complete test runs. This approach lets us ensure that we maintain a clean system without technical problems," concludes Jörn Volckmann the great advantage of this approach.

With cronetwork SCHOTT PP pre-empted many manual processes, including packaging. "We are now in the second phase of the project, the introduction of electronic detailed planning & scheduling at our plant in Germany. This will likewise replace the manual scheduling, which is now done on large scheduling boards on walls," Jörn Volckmann reports about the near future. After the rollout in all plants, some 1000 employees will use cronetwork in their daily work, especially in production planning, production management and packaging, as well as for evaluation and statistics.

With the introduction of MES, SCHOTT PP has successfully achieved the required standardization of counter and machine status values. For this purpose, they defined a clear structure for data exchange between involved systems; this enables documenting and evaluating machine status 24 hours per day and comparing such across all plant locations. In addition, they now have real-time production data collection; current quantities and times are visualized in cronetwork scheduling board. Jörn Volckmann reports on the use of cronetwork: "The MES essentially covers the areas of plant data collection, reporting and detailed planning, whereby we strived to stay close to the cronetwork standard." Regarding standard reporting by cronetwork on the basis of proven Oracle technology, SCHOTT PP

HOW SCHOTT PP BENEFITS FROM CRONETWORK

- :: standardization of production processes in all plants in the sense of lean management
- :: evaluations across location boundaries due to comparable Key Performance indicators (KPIs) for all plants
- :: reliable and uniform data collected
- :: better manageability of plants and increased productivity
- :: worldwide rollouts with structured realization

is now able to make evaluations across their locations, as IT manager Volckmann states: "The Oracle based reporting functionality and the flexibility that this gives us are important to us. Today we can quickly, certainly and reliably produce reports for KPIs and indicators such as glass loss, OEE (overall equipment effectiveness), availability, performance and quality. We are currently working on enhancements up to the creation of custom dashboards with graphics, diagrams and tables, so that we can display combined and validated indicators."

CONCLUSION: DATA IN REAL TIME AND IMPROVED PRODUCTIVITY

With the MES cronetwork, today SCHOTT PP covers all the requirements in their customer specification. The standardization of processes and indicators enables them to better manage the plants and to compare them, particularly with regard to productivity. Further, they have real-time data availability. In the past there were delays of up to 48 hours. "Now we have the data in real time and can react much faster to production problems," explains Volckmann. "The introduction of MES was a first step, and now we will cover further functionality and processes with the system." Volckmann feels well prepared for future tasks and extensions concerning cronetwork: "We are very satisfied not only with the MES but also with the service provider. We had and have a good, fruitful and constructive collaboration with the team from Industrie Informatik. Particularly the flexibility and solution-oriented approach of the IT provider ensures us successful, optimal realization of our wishes and requirements for the future as well." For the future, the company seeks to transfer more data from SAP automatically to the production systems, e.g., specifications such as SOPs (standard operating procedures). Furthermore, the complete area of reporting is being extended with additional evaluation tools; in addition to a management dashboard, the Industrie Informatik solution Pixel Perfect Reporting will be implemented.

Products: Primary packaging for pharmaceutical industry
Employees: 17,000 SCHOTT AG worldwide, 1350 at SCHOTT PP
Sales: 2,85 billion euro SCHOTT AG
cronetwork modules: scheduling board
plant data collection
machine data collection



Additional information
online at:

www.schott.com/
[pharmaceutical_packaging](http://www.pharmaceutical_packaging.com/)
www.industrieminformatik.com

Scheduling Board

Graphic scheduling for your production: live, fast and flexible

Plant Data

Low feedback effort for a real-time view & traceability

Machine Data

Correct data & information automatically

Time & Attendance

Clear employee administration and flexible scheduling

Business Intelligence

Analyses & evaluations with real-time information

Mobile Applications

Enter and evaluate data from any location

Technology

Benefits for software owners and users

cronetwork MES: The data hub for the Smart Factory



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