



Reference Report



MES software cronetwork
at Vogel Antriebstechnik

50% increase in sales in direct fiscal comparison:
“We are better, more flexible and more powerful!”

Wilhelm Vogel Antriebstechnik GmbH trusts in MES solution cronetwork

With a spectrum ranging from bevel gears, spur gears, planetary gears, and particular strength in low-backlash servo transmissions, Vogel Antriebstechnik is a leading worldwide vendor for machine and plant construction, printing and packaging technology, robotics and handling, plastics, wood processing as well as machine tool and wind power plant construction. Due to

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continuous innovation and utmost quality of their products, Vogel has become a leading producer in drive technology, and for individual types of transmissions

even the world leader. To not only reinforce its market position but to extend and secure such, in 2003 the company decided to acquire an integrated Manufacturing Execution System for the area of production planning and control.

REQUIREMENTS ON THE NEW SYSTEM

Two prerequisites were defined for the overall hardware and software solutions: 1. The software solution must be independent of the hardware; Vogel did not want to be bound to a hardware manufacturer either for IPCs or for servers. 2. In order to finally get a handle on interface spin-offs, Vogel wanted a central database where all data would be stored in the future, both for detailed planning (the control panel) and for PDC/MDC and personnel time and attendance.

In the end there should be an interface only between the MES and the ERP system. From all this, the Vogel management expected the MES to deliver optimized production planning and control based on reliable and up-to-date evaluations. Volker Uhlmann states: “From BDE/MDE data in combination with personnel time and attendance, we wanted to gain reliable planning and reasonable evaluation that would finally enable us to make corresponding improvements in production. We had

been doing this, but not with consistency because the data were much more difficult to collect.” After a market study, in 2004 the decision went to the completely integrated MES solution cronetwork (scheduling board, PDC/MDC, time & attendance, HR planning) from Industrie Informatik with locations in Linz (Austria) and Riegel bei Freiburg (Germany). The IT department, management and the production department jointly defined their requirements; the performance specification prepared by Industrie Informatik served as the basis for the overall project, although in later steps more details were formulated. Volker Uhlmann says of his new software partner: “Throughout the entire project we had the feeling that Industrie Informatik followed a more practical approach than their competitors. In the decision-making process we spoke in great detail about technical requirements, including production data collection and production control. In other words, we found open ears and observed early that Industrie Informatik has a well-founded technical understanding of the production process and that we had found a partner who can competently support us. That was actually the decisive point.”

There was one more thing: “We already had the production control panel by IDS Scheer in-house (Sheer was acquired by Industrie Informatik some years earlier) and so were able to build on existing software.” Furthermore, cronetwork runs on the IBM eSeries machine at Vogel, and the new IPC partner is also supported by Industrie Informatik.

INTRODUCTION OF THE SOLUTION: CONTROL PANEL, PDC, MDC AND T&A

First, early in 2005, Vogel IT and Industrie Informatik jointly built a test environment. Volker Uhlmann comments on the successful implementation: “After our IT people, who are not really specialists for production concluded their testing, we sent the test results on to production. The production department then attempted to project normal daily events, as real as possible, onto the test environment. Only after both these steps were successfully completed did we as management give a green light and toward the end of 2005 opened the way for real operation.”

For the next step, MDE, automated collection of machine data, Vogel needed an MDE custom solution for a multiple pallet system, which was successfully realized by Industrie Informatik. This involved a pool of eight pallets, each of which can be identified by laser. The operator defines the sequence in which the

1 50% increase in sales in direct fiscal comparison with the same employee team in production control.

2 Volker Uhlmann, CEO, Vogel Antriebstechnik

3 Vogel Antriebstechnik is a leading global player in transmissions for industrial applications



pallets are handled, e.g., pallet 3, then 5, 7 and then 1. The MDE system automatically detects which pallet is used; i.e., when the pallet reaches the machine, it passes a sensor that detects that this is pallet 3. Then the machine data collection for the production order registered for pallet 3 runs automatically pallet.

The huge advantage is that the operator need not provide feedback for each pallet and its order; this occurs automatically when the pallet reaches the machine.

WE ARE BETTER, MORE FLEXIBLE AND IMPROVED IN PERFORMANCE

In the next step early in 2008, the new personnel time management was integrated and in October 2008 it went into live operation. Volker Uhlmann comments on the introduction and the benefits of cronetwork: "With the exception of access control (which will only be utilized peripherally), today we have implemented everything that we originally planned. This means that the modules production control, PDC, MDC and time & attendance work through a database and we have only an interface to our ERP system, so that now we are able to update our production control based these data – in real time and online. The production control – and this is one of the greatest benefits – always has an up-to-date picture of the momentary situation in



our production. Online and in real time we can see, e.g., which orders are currently being processed or which orders are currently logged out. With such up-to-date data we can plan and control better and are therefore better, more flexible and improved in performance. In direct fiscal comparison of 2008 to 2004, we have almost 50 percent more sales, and with the same team in production control. I think that would have been very difficult with the old system," Uhlmann expresses in numbers. The benefits of PDC/MDC are the possibility to quickly detect when/where something goes wrong in order to intervene correctly; and the advantageous medium-range view of where a rationalization potential resides or where and what needs to be optimized to finally answer, based on the evaluations, the decisive question of whether what we are doing in production

HOW VOGEL ANTRIEBSTECHNIK BENEFITS FROM CRONETWORK

- :: 50% increase in sales in direct fiscal comparison
- :: optimized production planning and control on the basis of reliable and evaluations that are updated daily
- :: easy detection of target/actual deviations and optimization potential
- :: time savings due to automatic recognition of pallets in machine data collection
- :: overview of productivity of machinery
- :: not bound to any vendor due to hardware-independent software solution
- :: reduction to a single, central database and an interface between ERP and MES

still makes economic sense. In the interaction between ERP and MES, today Vogel has an excellent instrument for checking the economy of their production (including machine and work center utilization). Volker Uhlmann notes: "Thus we can evaluate throughput times. This means that we compare target and actual throughput times and determine the overall equipment effectiveness (OEE). The goal is always to quickly and simply detect what share of our machinery is even productive. On the other hand, we want to recognize actual down time. Further, we compare target and actual setup time and target and actual production time. Whenever there is a deviation between target and actual times, we investigate in real time and analyze where the problems are. This is certainly one of the great benefits of the system, for here too we really have real-time current data and can analyze quickly and with certainty, and correct as needed. In a sort of continuous improvement process with our foremen and work force, we also strive to achieve possible optimization and on to better calculation. This also involves persuasion; we do not want to bully our personnel; however, we must work economically if we are to flourish on the global market and thus secure jobs."

OUTLOOK AND VISION

In addition to automated production planning along with sustainable and continuous optimization of production, in the next step Vogel with the MES solution cronetwork also wants to implement automated human resource management and access control. Volker Uhlmann adds: "My vision is that in MES we can assign certain qualifications to certain employees, and the qualifications to certain machine groups, so that we can conclude that if a certain employee is absent, we have certain reserve capacity at a certain machine." Then Vogel will have not only a pure machine scheduling, as has already been achieved, but additionally automated personnel planning that lets the company look ahead to what capacity, always a combination of machines and operators, is actually available.

Products: Transmissions for industrial applications
 Employees: 230
 cronetwork modules: scheduling board
 plant data collection
 machine data collection
 time & attendance
 access control



Additional information online at:

www.vogel-antriebe.de
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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