

Industry: Metal Products

Hoco Chrome V.O.F.

www.corusgroup.com

“Wonderware was selected due to our positive experience with Wonderware Historian. The system is both user-friendly and flexible. Furthermore, a solid foundation has been laid for our MES layer using ArchestrA technology. This open and object-oriented solution offers so much more!”

René van Rij,
General Manager, Hoco Chrome

Wonderware System Platform gives clarity to Hoco Chrome production process

by Wonderware Benelux

Goals:

- To Simplify operation in the plant floor;
- Enable the record of production history;
- Make production data accessible to all plant personnel.

Challenges:

- The existing system uses traditional switchboards. This prevents plant personnel to get a clear view of what is happening in the plant.

Wonderware Solution:

- InTouch HMI;
- Wonderware System Platform.

Results:

- Production information is easily retrieved in Microsoft Office tools;
- The Wonderware solution is so easy to use that it is possible to be implemented by in-house technical service personnel;
- With the object-oriented system it is easy to maintain and expand in terms of hardware and software;
- The SCADA system can be remotely accessed. This provides transparency to the work floor at business level and allows maintenance to be supervised from different locations.

Velsen-Noord, The Netherlands – Hoco

Chrome is a 50/50 joint-venture between Corus and the Canadian Court Holdings Ltd. Hoco Chrome repairs the surface of rollers used by Corus to produce pressed steel sheets.

‘We maintain rollers that are used to process steel into thin sheets,’ explains René van Rij, Hoco, Chrome’s general manager. *‘These rollers need to be quickly returned to customers such as the Corus plants, otherwise the production process halts.’* The stress placed on the rollers is great and Corus’ quality requirements are high. Rollers are often sent back again to Hoco Chrome after only a few hours of service, where an electrical spark process restores the correct texture to the roller surface. *‘A roller does not need to be smooth, instead it is slightly rough,’* explains van Rij. *‘This ensures that the roller produces a sort of dotted pattern on the steel sheets. This makes them easier to process.’*

The original production process was controlled by outdated operating panels which did not allow the recording of process history. It was also not possible to remotely see what was happening on the work floor. This had all been solved with the implementation of the Wonderware System Platform with InTouch HMI (Human Machine Interface) clients. This open and object-oriented solution also offers a connection to the ERP system and detection of Overall Equipment Effectiveness (OEE).

The manufacturing process at Hoco Chrome is controlled by PLCs. A couple of small changes were recently made to plant operations. *‘The existing system still used traditional switchboards. This led to a lack of ability to have a complete overview of the plant. For example, we were not able to find out the process settings when investigating a customer complaint,’* continues van Rij.

This is similar to flying an airplane without a cockpit and black box. In order to give clarity to Hoco

Chrome’s work floor processes, a new solution was required for operation, visualisation, and archiving process data.

Data Historian Bases on a Highly-Accessible SQL Database

This problem was solved by installing Wonderware System Platform solution that incorporates the Wonderware Historian.

‘We are going to use the historical data to create quality reports for our customers,’ explains Van Rij. *‘They will then be able to check whether a roller has received the treatment that they requested. Furthermore, we can use the Historian to trace causes of malfunctions. This will not only benefit our delivery reliability, but it will also help us to free-up hidden production capacity. Expanding the machine park will only be required in two years time.’*

The activities on the plant floor can also be followed remotely by logging on to the SCADA system. *‘This is very convenient from my office, and it is useful during malfunctions. The maintenance of our installations is done by HTD, which is Corus’ technical service. We used to have to wait a long time if a technician had to come all the way from Den Helder during the night. This is no longer necessary, as I am now able to log on to the SCADA system from home using a secure connection,’*

explains Ko Dirkson, HTD’s senior technical assistant. *‘This proved to be particularly useful when there were problems with starting up the spark process. I was quickly able to see that the solution rested in a cold start on a PLC.’*

Wonderware was selected to supply the SCADA system due to the positive experience with the Wonderware Historian in Corus’ central waste processing plant. *‘We already had experience of the Wonderware platform at HTD, but at Hoco Chrome we implemented this package for the first time completely on our own.’*



Figure 1: Rollers to process steel into thin sheets.



Figure 2: InTouch HMI clients.

determine which problems occur the most.”

Another future extension is linking the SCADA system to the Hoco Chrome and Corus' ERP systems. *“Each roller is treated separately for the required roughness,”* explains Dirkson. *“At the moment, this information is still entered by hand. It would be better if there was a MES layer that could automatically channel this information to the recipe data. Thanks to the present Wonderware technology, we have laid a solid foundation for this future component. Other future possibilities include sending quality reports to our customers electronically,”* adds van Rij. *“Handling questions and complaints can also be done through the Wonderware MES layer.”*

User-Friendly and Flexible System

The system is user-friendly and flexible because the software is set up to be completely object-oriented. *“You can design separate operating components, including visualisation, at the level of the Object Server. Object orientation allows you to easily change similar components in one go. You can also copy and reuse components which we used extensively when we put an additional production line into commission,”* points out Dirkson. This flexibility is also important for future expansions. *“You can easily add software and this makes the automatic registration of the Overall Equipment Effectiveness possible.”*

This is also echoed by Mark Satink, account manager at Wonderware Benelux. *“It is possible to make a pop-up screen for each object that informs the operator about the source of a malfunction. These notifications can then be used later for a Pareto analysis, in order to*

Main Benefits

1. The Wonderware Historian enables production information to be easily retrieved in Microsoft Word, Excel or Internet Explorer;
2. The Wonderware solution is so easy to use that it is possible to be implemented by in-house technical service personnel;
3. The system is completely object-oriented. This makes it easy to maintain and expand in terms of hardware and software (e.g. for the latter, the addition of an OEE cockpit and a connection with the ERP system);
4. The SCADA system can be remotely accessed. This provides transparency to the plant floor at business level and allows maintenance to be supervised from different locations.

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