



"... ArchestrA technology supports our strategic intent and that's why we love it."

Joao Bordalo,
Senior Architect, MES Demand,
ArcelorMittal

ArcelorMittal's Vereeniging Tubular Products Plant Remains a Global Player with Help from Wonderware

by Wonderware Southern Africa

Goals

- Shorten project delivery;
- Definition of object and graphical standards,
- Definition of a standard PLC tag naming convention;
- Provision of reliable data tracking;
- Include operator accountability.

Challenges

- 12-week implementation schedule;
- Enforcing the application of best practices.

Solutions and Products

- Wonderware Historian Client);
- Wonderware InTouch HMI;
- Wonderware System Platform.

Results

- Far greater turnover than would have previously been possible;
- Full product traceability;
- Reduced engineering costs on system expansion or duplication through standards;
- ArchestrA technology can be a vertical as well as a horizontal tool for integration;
- Standardised environment is a great stepping stone for future automation.

Vereeniging, South Africa - The reliable delivery of energy to the world's industries is no trivial matter and leaves no room for error. Part of ArcelorMittal's Tubular Products division is responsible for the manufacture and supply of seamless Line and OCTG (Oil Country Tubular Goods) pipes to oil, gas and engineering companies worldwide. To remain a player in this global marketplace, ArcelorMittal's Vereeniging Tubular Products plant had 12 weeks to upgrade its production facilities to qualify for new quality criteria from the American Petroleum Institute (API).



Joao Bordalo, Senior Architect, MES Demand, ArcelorMittal South Africa.

With the dire consequences of oil or gas pipeline failures, there's little wonder that a great deal of attention is being paid to their manufacturing standards. API standards address several key aspects of the oil and gas industry, including exploration and production, refining, fire protection and safety, petroleum measurement and marine transportation. These standards also reference offshore production, drilling, structural pipe, pipeline, health and environmental issues, valves, storage tanks, etc.

And the API means it: Comply or close down. "At least, this clarified our business objective and left little doubt as to what to do next," says Joao Bordalo, Senior Architect, MES Demand.

Solution Selection

The Tubular Products plant already had Wonderware Historian (now part also of Wonderware System Platform), Wonderware Historian Client (formerly known as Wonderware ActiveFactory) real-time production performance analysis and reporting software, Wonderware InTouch HMI (Human Machine Interface) and ArchestrA technology in the Wonderware System Platform environment. "It made sense to continue with this product range," says Bordalo. "We also used our own visualisation portal (ProcessNet) and Microsoft Reporting

Services. In addition, we consulted Wonderware for the adoption of best practices and also invested in Wonderware System Platform and Wonderware InTouch HMI training."

Implementation

"Under greenfield conditions, 12 weeks for this project would be an impossible time frame but we were fortunate in a number of ways," says Bordalo. "The network and software tools were already in place and it was the adaptability of these same software tools that allowed us to use them to address the new challenges. This, together with the use of best practices and professional operator training made this project possible in the given time frame. In fact, we finished a week ahead of schedule."

The adoption of best practices included incorporating such concepts as the ArchestrA BMA (Base Master Application) which, at first glance and from a process control viewpoint, seems somewhat irrelevant. But from Bordalo's point of view, who's been in the business for decades, short-sightedness never pays off. "For example, at the moment, we're only looking at one database and we could easily have bypassed this aspect of best practice," says Bordalo. "However, as we expand the system, we may well have to interface to other databases and not adhering to best practice principles at the start is a recipe for future expensive headaches."

Pipe genealogy including their attributes (length, weight, ID, OD, operator responsible, etc.) is

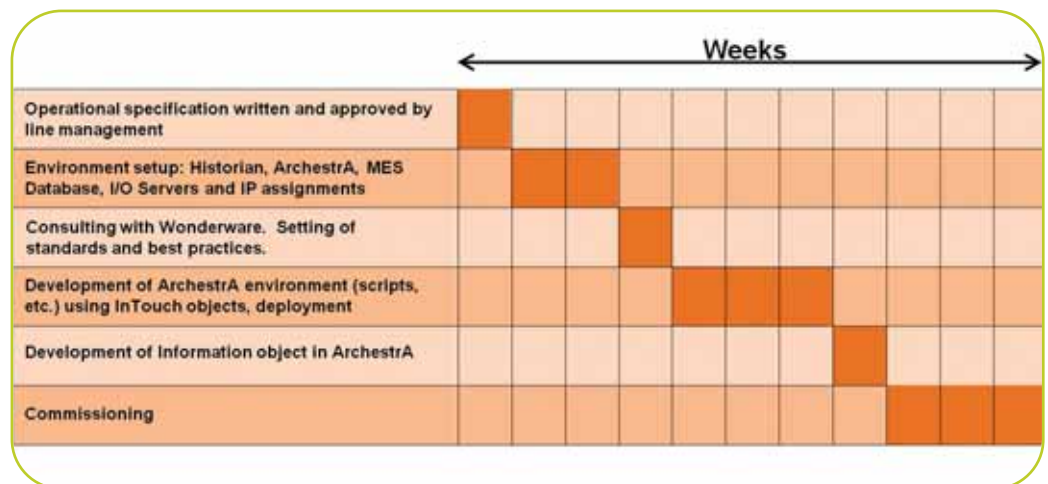


Figure 1: Project schedule

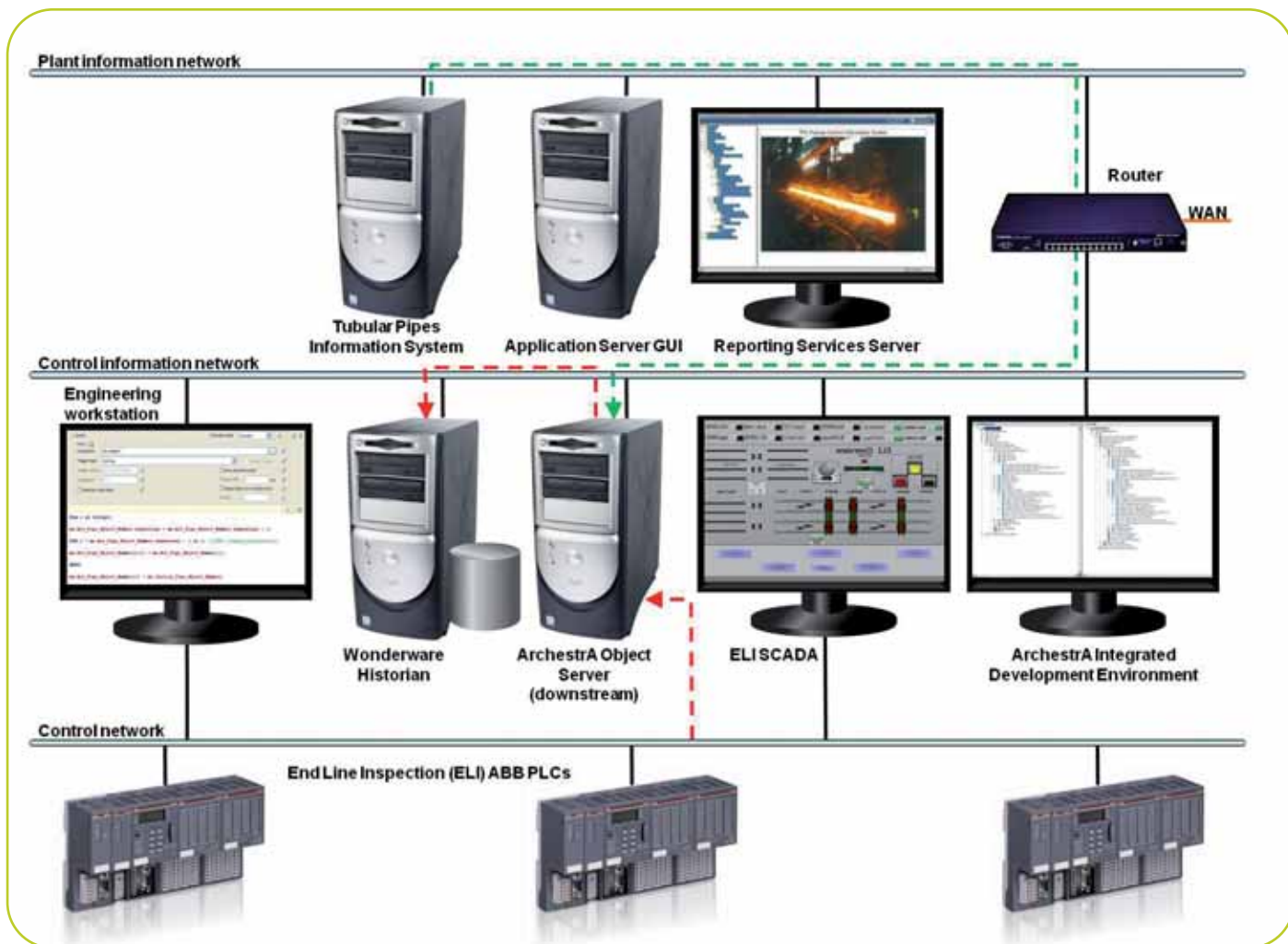


Figure 2: End of Line Inspection system topology diagram.

gathered and stored in real-time as pipes move from one section of the plant to another. In addition, pipes have to conform to alignment, rotation and ultrasonic requirements as well as tolerances downloaded from the ERP system. The result will determine if they are accepted or rejected. All this effort meant that ArcelorMittal’s Vereeniging Tubular Products division met all the API requirements. The end results speak for themselves.

Conclusion

This is a good example of the speedy results that can be achieved through the use of standard toolsets

and an infrastructure that facilitates extensibility. Standards cut engineering costs and help define the road map for future projects.

This is particularly meaningful when several engineering teams are involved. Standards also decrease system maintenance and Object Oriented Technology allows for the easy redefinition of objects (i.e. plant items) and their rapid redeployment – a key attribute of any development environment.

Lastly, the adoption of best practices means that costly trial-and-error approaches are eliminated and that the system is better prepared to cope with future challenges.

This document was realized thanks to the support of: ArcelorMittal.