

Reengineering

The Customer

A prominent German manufacturer of Thickness Measurement Systems

The Challenge

Re-engineering the client's decade old thickness measuring system. Thickness consistency is vital during the processing of a metal for its mechanical properties like coil-up, post processing and for physical properties like humidity or thermal capacity. Since the system was based on software developed over a decade ago, the client felt the need to reengineer the software to a new platform to ensure stringent quality standards. Web enabling the controlling software in the machines was also desired so that the manager could monitor the machines from a location outside the factory premises.

The Solution

A Continuous Thickness Measurement System (CTMS) was developed to provide a graphic-intensive tool that helps in controlling and monitoring the coating thickness for film producers. The system was also web enabled for ubiquitous and constant monitoring of the machines.

The Goldstone team used its 'IV Phased Approach', which is a combination of onsite/offshore development, to complete the project. Goldstone's onsite team was responsible for understanding the customer requirements and translating them into a high-level design document. This formed the basis for the offshore team to work on the reengineering of the product. Encryption was used during code transfer for increased security.

This application was developed in a novel way where the communication and control process was web enabled. The request was sent from the Application to the Web Interface of the Pulse Sensing Emulator (PSE), which communicates with the Hardware device that measures the thickness. The PSE in turn activates the hardware connected to it. Socket communication was used to interact between the web-interface and the application. The response was received from the hardware device through the PSE, which captures the commands sent by the application hardware device. The thickness measured at a particular moment is transferred back to the PSE from the hardware and on to the web interface. Finally a corresponding graph is displayed on the screen of the system controlled by the manager or any authorized personnel. Options were provided so that the whole process could be controlled through the Internet to enable the manager to monitor and control the machines even if he is physically not present on the work floor.

Due to diverse installations of the applications, a number of languages had to be supported, including English, German, French, Dutch and Spanish.

The Target hardware platform extensions were LAN Cards, like 3Com 3C905, with TCP/IP, RS-232 current loop adapter, Analog output 0 ... 10 V or 0 ... 20 mA. The OS used was SuSE Linux 7.2.