

Plant Floor to SAP Integration

Client: Leading Engineering MNC

Platforms

- ▶ CiTech SCADA, Historian
- ▶ xMII, SAP
- ▶ MS SQL Server
- ▶ Windows 2003 Server

The Problem

The client is a leading manufacturer of stainless steel slabs, blooms, hot & cold rolled coils, 30-40% of which are exported worldwide. The company produces stainless steel precision strips in different grade, stainless steel strips for razor and surgical equipments.

As Clients Business Operations are carried out Manually, Generating MIS Reports was time consuming, human errors were more, tracking machine information's was difficult, delay in meeting the production schedules, and they were not able to track machine efficiency.

Major Challenges that the client were facing are,

- ▶ To increase the production rate with the prescribed quality norms and increase the
- ▶ Production to meet the global demand.
- ▶ Data Integration; Data reusability
- ▶ Inter-Layer Data linkage

The Solution

To overcome the above problems, Axcend worked with the customer to understand the complete requirement & based on the study provided necessary consultancy to offer a complete solution that automates & integrates each layer from the Plant Floor To SAP Layer.

- ▶ Collect Data from process equipments in the plant floor
- ▶ Providing the machines status
- ▶ Store the available machine information's (Temperature, Pressure etc) in a historian database to maintain history of data.
- ▶ Make the production level information available in a centralized tracking system

Plant Floor to SAP Integration

This solution was implemented in four different layers to obtain a complete plant wide connectivity and hence reduces the manual efforts.

1) Development of Enterprise Layer: The SAP application was implemented to take care of communicating the production details to the plant floor & to each machine. SAP system shall fetch the data from Historian server through the compatible SAP Connector to analyze the quality and process performance of the each production area by using unique BATCH ID/NO. The whole process is to improve the production performance, standardization and establish the process operation baseline.

2) Development of Historian Layer: Historian server shall manage all client; it includes Application Servers and xMII and collects the data from application server located at various production areas. Historian server shall also perform the required mathematical operation and analysis of the collected data and store these results at the same level

3) Development of Communication Layer: To interface the SAP application & Historian we would require a gateway that communication layer was implemented with the help of xMII Connector.

4) Development of Application Server Layer To Collect Data From Operator Interface / HMIs: The application server shall collect the real time process information from the different machines (PLC) corresponding to different lines/work center through the distributed communication network i.e. TCP/IP LAN network.

ROI

- ▶ Easy flow of data from plant floor to enterprise layer
- ▶ Increasing the production rate with given set of machines
- ▶ Reduces manual efforts
- ▶ Effectively carry out the entire ERP activities such as production planning, sales and marketing, maintenance and quality, inventory control, production tracking etc. as proper data is available in required format at real -time

Salient Features

- ▶ Fully automated & integrated system to acquire data at real-time
- ▶ Tracking the employee, machines, and quality of production
- ▶ Assigning work order to different Machines from SAP
- ▶ Online status of production & work order
- ▶ Generating Reports based on machine, operators, line & Shift
- ▶ Stream lining Business Process Model