

SIXNET®

APPLICATION STORY

Contact Information

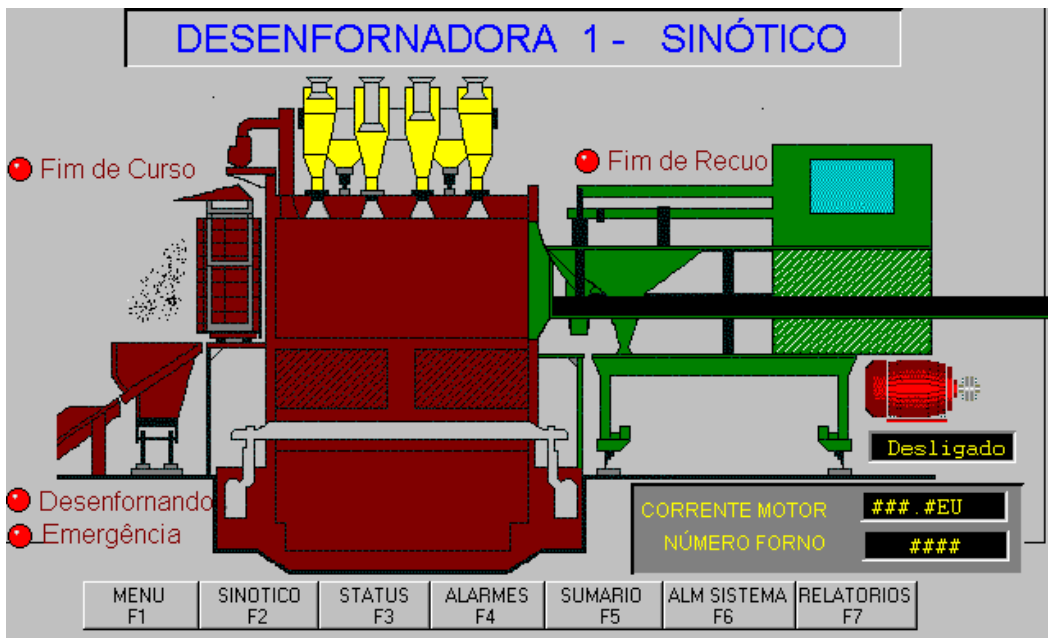
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Scalable Control System Keeps Watchful Eye Over Steel Plant

With a SIXTRAK "I/O for Windows" Scalable Control System, steel plant operators can track how motors are faring and whether the ovens need to be cleaned.

SYSTEM OVERVIEW

Under the watchful eye of a Scalable Control System, thousands of tons of superheated coal are moved every week from the ovens of USIMINAS, a regional steel company in Brazil, into the plant's furnace. This SCS plant upgrade seamlessly integrates to the existing operator interfaces.



When the original monitoring equipment used in the plant in Minas Gerais State began failing due to age, dirt, dust and vibration, the plant managers went out in search of an inexpensive system that was easy to set up, easy to use and that could take the roughest conditions without question – the plant operates around the clock, 365 days a year.

Operators in the USIMINAS steel plant check motor current with their existing HMI screen. Scalable Control Systems easily integrate into existing plant systems.

They found SIXNET and Citect.

Problem: USIMINAS Steel in Brazil needed an upgraded system to track motor currents and incrustations on the walls of ovens.

Solution: A Scalable Control System tracks motor current and the residue in the ovens and interfaces to the existing software.

Scalable Control Systems Brazil designed and installed identical systems for the machines called "Desenformadora." SIXTRAK modules monitor the current of the motors in 100 parallel ovens. Citect software acquires this data and passes it to the existing Brazilian HMI (Human Machine Interface) software. Citect operates as an I/O server

between the two systems.

The motors being monitored push pistons into the ovens to remove the coke to a wagon which takes the coke to another furnace, where it is mixed with iron and limestone to make the steel used in cars, buildings and ships.

- SYSTEM COMPONENTS**
- 1 Ethernet non-programmable Gateway
 - 1 ST-DI-024-16H
 - 1 ST-AI-20M-08F
 - 1 ST-DO-RLY-06U
 - 1 ST-PS-024-02N 24V power supply
 - Citect SCADA software

Coke is created by “cooking” coal out of contact with air. The procedure burns away the tar residue and leaves a substance that burns with little ash in the furnace to keep the steel pure. The coke then is used as a fuel to burn the impurities out of the molten iron. The carbon in the coke also bonds with the iron to make more durable and malleable steel.

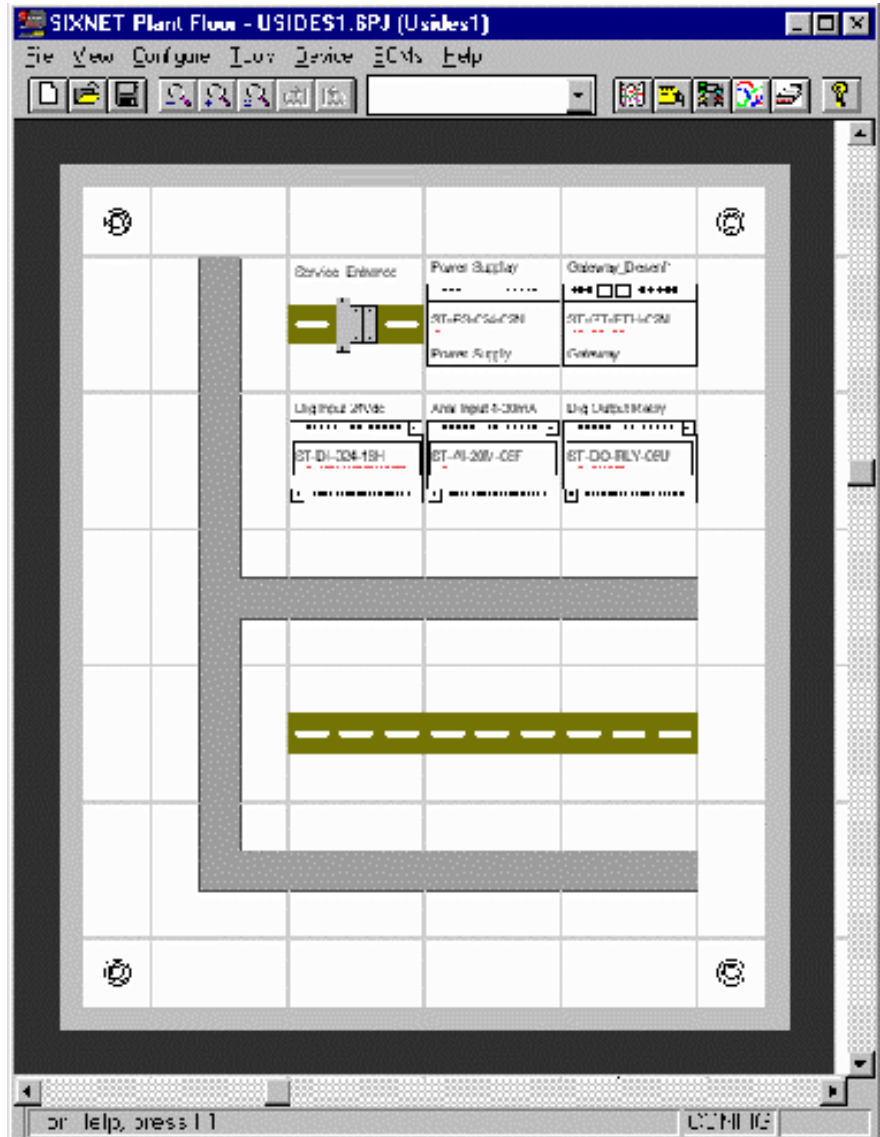
The SIXTRAK I/O tracks the power going through each of the 100 motors. Citect gathers this data over the Ethernet network and datalogs it to the hard disk. They keep about a week’s worth of records at the plant.

When the motor current rises above a set level, an alarm is generated to alert the operator. The Brazilian SCADA system logs the alarm into a text file for later reference. When the operators see the alarms happening frequently, it means that it’s time to look at the motor and the oven for maintenance.

SIXTRAK also monitors the incrustated residue on the sides of the ovens as a maintenance tool. Without periodic maintenance and cleaning, the residue becomes a fire hazard.

By taking the guesswork out of the maintenance schedule, the plant managers were able to reduce down time by being able to pinpoint the problem immediately. This system saves a significant part of their \$1.5 million dollar (U.S.) maintenance budget.

This Scalable Control System with SIXNET I/O and Citect SCADA software has been in place and running reliably since the first quarter of 1997.



System setup and maintenance is easily done with Plant Floor software.