Ford

COMPUTER INTEGRATED MANUFACTURING

BEHIND EVERY CAR built today are advanced electronics for controlling everything from the engine to the lights. To maintain the quality of the electronic circuits produced at a plant owned by one of it subsidiaries, Ford adopted computer integrated manufacturing (CIM). Through tools used in the plant, CIM gathers data on circuits and quickly isolates the faulty ones.
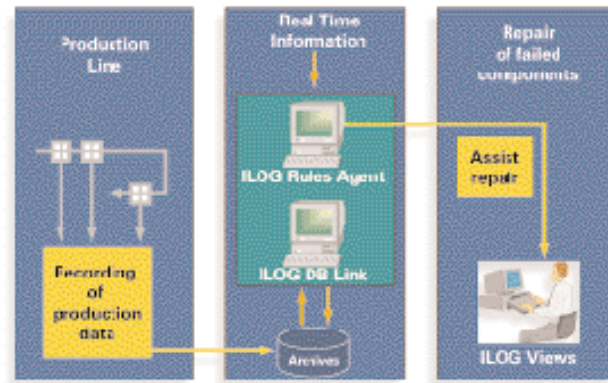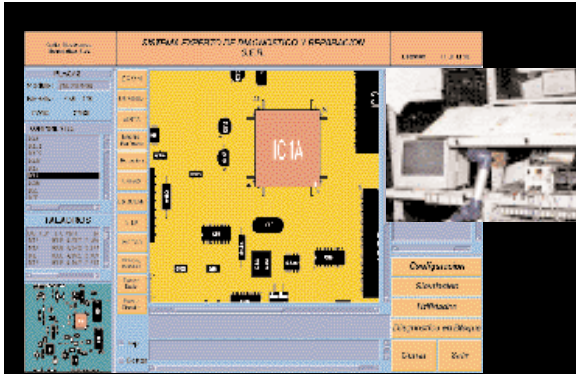
CIM uses an application called System for Diagnosis and Repair (SEDYR) to check the circuits. Developed by the subsidiary, Cadiz Electronica Systems Division (Spain), the system relies on ILOG Rules to filter data. The ILOG component uses criteria determined by engineers at the plant to search for possible malfunctions. Further aiding the engineers is an ILOG Views-based graphical user interface (GUI). It allows them to check the status of equipment throughout the plant, quickly spot faulty circuits and interact with ILOG Rules in defining filtering criteria.

The system lets the plant pull bad circuits out of production and repair them immediately, saving the company both time and money at the plant and further down the line by preventing them from being installed in cars.

"The new system implemented with ILOG Rules and ILOG Views significantly improves our process efficiency and reduces analysis time and costs. The automatic diagnosis of electronic board failures and real-time feedback to upstream operations are crucial to our ongoing success."

Ignacio Rodriguez
Information System
Project Leader,
Cadiz Electronica

Architecture of the RAD application

PRODUCTION MONITORING

SEDYR graphically shows the circuits in production, helping engineers instantly spot the defective ones. ILOG Rules agents automatically analyze the circuits in real time, while the ILOG Views GUI provides detailed information on them. The flawed boards are pulled from production and channeled to a repair zone. Further backing the system is ILOG DB Link, which gives engineers access to production data saved in a database. The system's real-time monitoring is made possible by a direct link to the main CIM computer.

PROJECT

Cadiz Electronica and the Spanish software house Ibermatica jointly developed SEDYR over a 12-month period. The system runs on an HP 9700 under HP UX, and is connected to the CIM computer via TCP/IP.

BENEFITS

Visualizing the circuits and spotting the failed ones, as well as a graphical representation of problems with instructions for treating failures, drastically reduced the time needed to repair boards. An additional cost-saving benefit lies in the system's ability to be used as a simulator and training tool.