

# The IPSS 3D Process CSI Level 2 System Upgrade

## Discovery Phase

California Steel Industries (CSI) needed to replace their Tesselator-based HMI system because spare parts were scarce and very expensive. During interviews and system audits, CSI told us that, although they needed to replace the HMI infrastructure, they strongly wanted to keep the “look and feel” of the existing HMI system. Further, the new system had to guarantee that the data displayed agreed with the data actually being used by the various controllers on the control network.

CSI also wanted IPSS to:

- Replace their Level 2 ADA code with a Fortran-based system that would be easier to understand and maintain.
- Commission a new Coiling Temperature Model
- Install a Level II Oracle database to keep product & process information.

## Development Phase

IPSS supplied a new HMI system based on Vsystem from Vista Controls. The new HMI system presents the same “look and feel” to the end users, but it is based on standard hardware (e.g., Windows NT computers) instead of the proprietary Tesselator hardware. To ensure that we correctly imitated the existing HMI system, we videotaped operators using it. By displaying global data from a control area instead of the HMI area, we ensure that displayed data is the data actually being used by the system.

We chose an Alpha computer to run the core of the HMI system and house the converted Level 2 software. As part of the conversion, we installed the IPSS Application Toolkit for OpenVMS, which provides standard tools (e.g., Alarm Handling) and procedures that make it easy for the end-user to maintain the system.

To minimize the impact of database activities, we designed the system so that minimal Oracle components were on the Level 2 computer.

In addition to installing the IPSS Coiling Temperature Control model, we enhanced the existing models to improve product quality.

## Deployment Phase

Because of IPSS' testing and commissioning strategies, the new system was proven *before* we allowed it to control the mill. As a result, the old system was never used again.

With the new HMI system, users can dynamically configure graphs to plot almost any analog signals.

Almost four years after commissioning, Coiling Temperature performance continues to be excellent.