



SONY TRANSITIONS TO 3D SOLID MODELING

SITUATION

To defend or to win market share from competitors is an on-going issue in the explosively growing video camera market. To stay competitive, Sony needed to make a transition. Maintaining the company's mainframe system, which was installed in 1982 and had grown to support more than 12,000 terminals, was getting more and more cost prohibitive. Additionally, Sony engineers recognized the benefits of using 3D models throughout the entire product development process to address other areas of potential cost savings. Quality and time-to-market were also major concerns.

OBJECTIVES

- ✓ Initiate a pilot project. This involved the design of a new video camera for broadcast applications: the BVP-550 containing three charge-coupled devices (CCDs) which are imaging-sensing chips that convert optical images into video signals.
- ✓ Meet the challenge of modeling the internal components with a very high degree of precision since the placement of the CCDs inside the camera was critical.
- ✓ Ensure the thermal performance of the circuitry inside the camera as well as the strength of the handle.

PROCESS VISION

- ✓ Capitalize on the ability of a "master model" for passing data directly to analysis early in the design cycle to address improved quality.

"SDRC I-DEAS Master Series™ software is a comprehensive system that addresses nearly all of our design and analysis needs. In addition, it also enables us to leverage the wealth of 2D data created by our legacy 2D system."

- Noriaki Sakata
Assistant Manager,
Camera Products
Department
Broadcast Products
Company of Sony
Corporation

SONY TRANSITIONS TO 3D SOLID MODELING

- ✓ Leverage the wealth of data created by the 2D legacy system.
- ✓ Convert to a workstation-based system.

ACTIONS

- ✓ Migrated from an incumbent 2D CAD system to SDRC I-DEAS Master Series software.
- ✓ Using I-DEAS™ software, Sony engineers designed the internal components of the camera and then also used I-DEAS for the detail design.
- ✓ To capitalize on the I-DEAS standard parts libraries, Sony engineers incorporated standard features, and extended the libraries to include more than 60 of its own parts common to camera design.
- ✓ For cosmetic design, Sony was easily able to interface with its proprietary industrial design system.
- ✓ I-DEAS enabled much of the analysis to be performed by the designers (rather than the expert analysts previously required), allowing analysis results to help drive design changes – a much easier process than making design changes in its earlier CAD system.
- ✓ In addition to using solid modeling for the camera itself, Sony was also able to leverage the ability to transfer 2D files to I-DEAS, convert them to 3D, and pass this data to the computer on which the company's service manuals and promotional materials are prepared.

RESULTS

- ✓ The transition to I-DEAS eliminated the expense of maintaining a mainframe while protecting a massive investment in existing 2D data.
- ✓ 3D modeling and the ability to perform analysis easily and early in the design cycle enabled Sony to produce a much higher quality product in less time.
- ✓ The ability to directly generate NC programs from a solid model reduced the NC programming process by about two-thirds. Greater savings in this area are expected as Sony's engineers become more proficient in the use of I-DEAS.

SDRC is a registered trademark, and I-DEAS and I-DEAS Master Series are trademarks of Structural Dynamics Research Corporation. All other trademarks or registered trademarks belong to their respective holders.