

White Electronic Designs Corporation

ILLUMINATING ENHANCED FLAT-PANEL DISPLAY DESIGN WITH SOLIDWORKS OFFICE PREMIUM



Enhanced design visualization is one of the reasons why WEDC has been able to decrease its product design cycles by 35 percent with SolidWorks software.

→ White Electronic Designs Corporation (WEDC) is a leading manufacturer of memory chips, semiconductors, keypads, and specialized LCD (liquid-crystal display) panels. Formed through the 1998 merger of Bowmar Instrument Corporation (White Microelectronics) and Electronic Designs, Inc., the company operates separate business units, one of which is its Display Systems Division (DSD). This division develops enhanced optical LCD solutions and “ruggedized” displays used in outdoor industrial, commercial, and military applications. DSD provides design, manufacturing, and certification services in the development of highly reliable display systems for military, transportation, and industrial markets. Representative applications include medical monitors, commercial avionics, portable outdoor instrumentation, shop floor controls, and point-of-sale (POS) terminals.

The Display Systems Division (DSD) of White Electronic Designs Corporation (WEDC) is a leading manufacturer of flat-panel LCD displays for use in specialized applications that require custom enhancements. Bright sunshine, excessive movement, and constant vibration are examples of the harsh conditions under which WEDC displays must reliably function. The different types of custom display requirements that have surfaced in recent years created the need for greater productivity, agility, and flexibility in DSD’s product development group, in order to capitalize on emerging opportunities. These needs prompted DSD to reassess its CAD tools – Autodesk Inventor® and CADKEY® – in late 2003, according to Andrew Robinson, associate mechanical engineer.

“We believed that using Inventor and CADKEY software was holding us back in some respects,” Robinson explains. “We had both systems because of the merger and realized that we were doing a lot of remodeling as a result of going back and forth between the two platforms. We were also experiencing difficulties in communicating with vendors because we had to deal with a large number of file conversions and IGES translations. We were looking for a single system that was easier to use, more capable, and better suited to meeting our needs and goals.”

DSD evaluated Pro/ENGINEER® CAD software and the SolidWorks® mechanical design system before selecting the SolidWorks Office Premium suite of product development software. The company chose SolidWorks software because of its ease of use, integrated PDMWorks® product data management (PDM) system, advanced visualization capabilities, sheet-metal design tools, and additional integrated applications.

“We found out about SolidWorks software from one of our sheet-metal vendors,” Robinson recalls. “When we saw the section-view capabilities, we knew SolidWorks was the right solution. With flat-panel displays, all the elements rest closely together in a very tight space. The ability to look inside using section views is so much more efficient than estimating how parts align.”

Enhanced visualization compresses design cycles

Since implementing SolidWorks Office Premium software in early 2004, DSD engineers have used the software for design modifications and new product design. Robinson says that by using SolidWorks software on the design of a new industrial-type monitor for use in factory settings, he was able to meet an ambitious seven-week design deadline, cutting the design cycle by 35 percent. The product, which carries the code name “Arago,” was the first product that DSD developed completely in SolidWorks software.

“SolidWorks software enables us to better visualize our designs. One of the reasons we were able to complete the design for Arago so quickly was that we could see inside the design,” Robinson explains. “When you are sticking a bunch of pins and screws in a small space, you need to be able to see inside to determine which interferences are intended – the pins and screws – and which are not. We used section views almost daily to determine how components align.”



- Shortened design cycles by 35 percent
- Improved management of product design data
- Eliminated need to redraw models
- Enhanced design communications

- The Display Systems Division (DSD) of White Electronic Designs Corporation (WEDC) is a leading manufacturer of flat-panel LCD displays for use in specialized applications that require custom enhancements for military, transportation, and industrial customers. In 2004, the company evaluated available CAD systems to help them boost productivity and enhance flexibility, in order to capitalize on emerging custom display opportunities.
- DSD selected the SolidWorks Office Premium suite of product development software because of its ease of use, integrated PDMWorks product data management (PDM) system, advanced visualization capabilities, sheet-metal design tools, and additional integrated applications. By deploying SolidWorks software, the company shortened its design cycles by 35 percent, improved its management of product design data, eliminated the need to redraw models, and enhanced its design communications with customers and vendors.



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Integrated PDM, sheet metal, and configurations

The combination of the integrated PDMWorks PDM system, sheet-metal-specific functionality, and configuration capabilities also contributes to the productivity gains that DSD has realized. PDMWorks software replaces the nonintegrated document control system that DSD had in place before implementing SolidWorks Office Premium software.

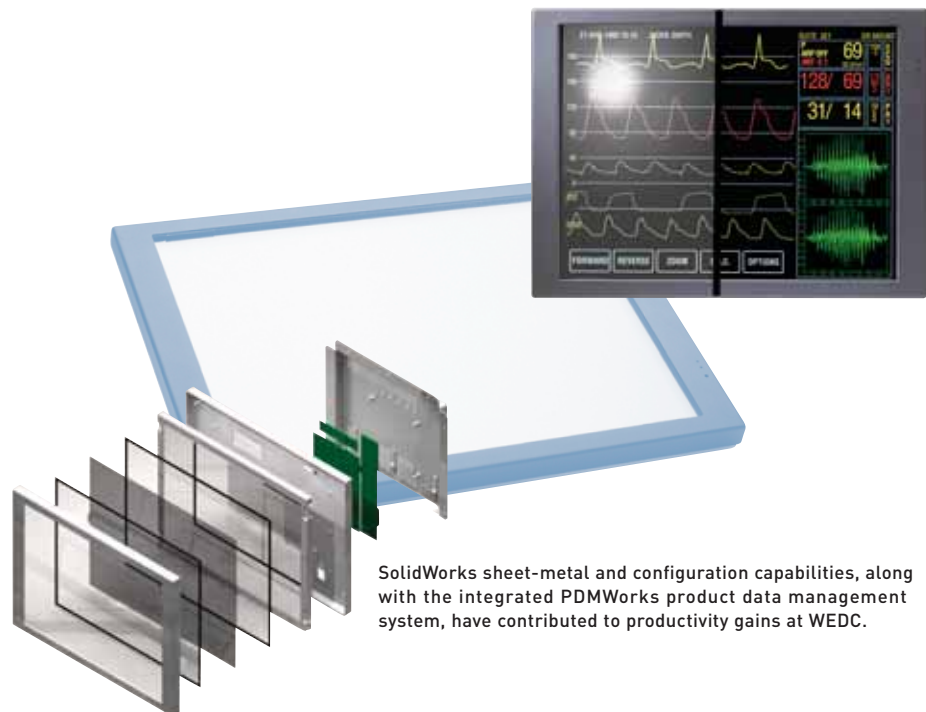
"Arago was made almost entirely of sheet metal. I relied heavily on SolidWorks sheet-metal capabilities to get out my flat patterns, which our vendor was able to work with directly," Robinson notes. "Configurations also boost productivity. We use configurable design tables to produce different configurations of assemblies and parts from a single model instead of remodeling each configuration separately, which we used to do quite a bit."

DSD anticipates additional productivity gains and cost savings once it deploys the COSMOSWorks® analysis tool to reduce the battery of tests – for example, drop, vibration, humidity, and temperature analyses – which it performs for all new products.

Improved design communication

By implementing SolidWorks Office Premium software, DSD has also gained a suite of robust design visualization and communication applications, including PhotoWorks™ rendering, SolidWorks Animator animation, and eDrawings™ design communication software. These tools enhance DSD's capabilities for presenting, explaining, and communicating design concepts to customers and vendors.

"We designed a tool that aligns and glues an optically clear, silicone-type material to the antireflective glass on the front of a display," Robinson says. "Using SolidWorks software, I created an AVI file to simulate how the tool will function for a customer. SolidWorks design communication capabilities enable us to communicate more effectively, giving our customers greater confidence in our expertise and designs."



SolidWorks sheet-metal and configuration capabilities, along with the integrated PDMWorks product data management system, have contributed to productivity gains at WEDC.

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