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## PLM Solution Shortens Design Cycles for Avionics

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CMC Electronics, Inc. produces both commercial and military avionics products, including flight management systems with global positioning (GPS) for manufacturers like Boeing. Other big customers, such as the U.S. Marines and U.S. the Army, look to CMC Electronics for products such as line-of-sight, high frequency tactical radios.

As CMC Electronics was rapidly adopting more computer-aided design (CAD) tools, company engineers began grappling with new problems from a huge proliferation of project files. They realized they needed to effectively manage CAD files and associated information to prevent costly inefficiencies and project delays.

### Multiplying Files

At the time the company reached the apex of CAD-system proliferation, multiple systems were in use including Pro/Engineer, Mentor Graphics, CADKEY, AutoCAD, as well as four or five other minor CAD systems. The only official tracking system for the bewildering array of files and file structures consisted of jotting down lists on paper. The potential for error started to be actualized with alarming regularity.

"Typically, the files were just spread all over the place," recalls Mark Hamilton-Piercy, IT engineering manager at CMC Electronics, "with multiple copies everywhere. This caused us all kinds of problems. The time it took just to find drawings, to make sure you had the right ones, and be sure you were not redoing work by picking the incorrect files was costing us a lot of money." Managers at CMC Electronics realized they needed a product lifecycle management (PLM) solution in order to regain control of the engineering process. They sought out SofTech, developers of ProductCenter software. "One of the main driving forces was cycle time in the design phase," Hamilton-Piercy said. "An awful lot of time was spent affecting changes. There were all kind of issues that just went away when we started working with SofTech."

### CAD Integration

CMC Electronics chose SofTech's PLM due to its close affinity with its dominant CAD system. "I would say the main driving force was ProductCenter's integration with Pro/Engineer, which was the emerging standard in our company. Although other vendors had products available for managing the problem, they were far short of meeting our requirements," says Hamilton-Piercy. CMC Electronics' Engineering Configuration department began to store and manage



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all of their core drawings and engineering documentation in ProductCenter. The next step, linking all technical manuals for CMC Electronics product lines to the design documents, made the department more project-centered. "Over time, our plan is that ProductCenter will become our full blown PLM system, handling everything," Hamilton-Piercy says.

All engineering documents (mechanical and electrical drawings, specification sheets, and other product information) are now web-accessible with the company's custom-built Electronic Document Online Viewing System (EDOV), which is based on the ProductCenter system and developed with the ProductCenter WebLink Toolkit. "This is now deployed across the entire organization," Hamilton-Piercy says. "That includes the manufacturing, testing, and engineering departments."

CMC Electronics has calculated savings of over \$313,000 per year, estimated just on the amount of employees time spent searching for drawings and information. In the several years since ProductCenter's adoption, the savings has accumulated into the millions, doubling the company's original savings estimates.

**Globally Managing Distributed Design and Manufacturing**

"Using ProductCenter has definitely improved our responsiveness to our customers. Our increased ability to deliver is bringing us more customer satisfaction and more business. For example, many of our customers request documentation packages, which was very time consuming," explains Hamilton-Piercy. "Often, by the time we finally had the drawings packaged, there would already be a change to them just because the process took so long. Then someone would have to go back, pull out the changed drawings and reinsert the updated ones."

"Now, with all documents and source files in ProductCenter, it's pretty simple just to publish a CD for them. The shipping costs are less and it's reduced a five-man-week job down to less than a one-man day, which is pretty significant. Plus, it's an area where we didn't even realize we would have savings," Hamilton-Piercy said.

Hamilton-Piercy talks about business that the company might not have pursued without ProductCenter's capabilities, since the demand for a quicker time to market is now much higher. "A couple of recent, high profile products we developed required very short design cycles," he explains. "Those product structures were put into ProductCenter right from day one. The payoff has been very evident."

"Everything is there at your fingertips. You don't have to chase around looking for things, since with ProductCenter's release management you can go back and pick up previous versions of a structure very simply," Hamilton-Piercy says.

**SofTech**

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