Bird Technologies cuts design time and increases product iterations using Solid Edge with synchronous technology

Radio frequency equipment maker Bird Technologies has reduced new product design time 75 percent and can re-design existing models up to 180 times faster using new computer-aided design (CAD) software technology.

The breakthrough at the Solon, Ohio-based company provides Bird Technologies with a competitive edge over its rivals, according to John Winter, mechanical engineering manager. The use of Solid Edge® software with synchronous technology from Siemens PLM Software allows Bird engineers to iterate more designs more rapidly for its customers and successfully enter new markets.

“Everyone wants to design products faster and cheaper. With Bird Technologies, quality is the highest priority,” says Winter. “If you can iterate designs more quickly, you’ll be able to catch bugs more quickly and hit your deadlines quicker if you speed up the design process up from the beginning.”

Bird Technologies manufactures radio frequency measurement and management equipment. The company’s global markets include broadcast, cellular, government, land mobile radio, medical, military, and semiconductor customers.

A radio frequency capture, record and playback system, designed with Solid Edge, is used to study real-time radio frequency signal activity over long periods of time.
Accelerated new product design

Classic history-only-based modelers use a feature approach to create and edit models. But these modelers require a lot of preplanning time to handle unforeseen changes that frequently arise. Conversely, history-free modeling is fast, but feature-less, with limited automated design capability.

Synchronous technology provides the best of both worlds, enabling the use of highly automated features and dimensions that facilitate flexibility and near-instant performance. Winter was originally trained to design using a structured history tree of features but quickly adopted synchronous technology.

“My default now is to start designing using Solid Edge with synchronous technology from the very beginning,” Winter says. “With the free time I have after developing products quicker, I’m able to get more iterations of concepts and really fine tune what it is that the sales guys want to sell to the customers.”

John Winter
Mechanical Engineering Manager
Bird Technologies
“When I go home at night I’m not frustrated like I was using history-based modeling. I’m more relaxed because I know it wasn’t a stressful day. I’m glad we have Solid Edge in our business. I wouldn’t want to model with anything else.”

John Winter
Mechanical Engineering Manager
Bird Technologies

Better re-use of imported data
Bird Technologies also benefits from synchronous technology when making design changes. Winter used an example of having computer boards that are too large for any of the card guides the company buys. The only solution was to redesign the guides and manufacture them in house.

Using Solid Edge with synchronous technology, Winter obtained a 3D model of the guide with no design features, a so-called “dumb model” from the original manufacturer. He imported the model and rapidly made the edits needed. “To redesign this part to make it fit in our application took 10 seconds using synchronous technology.”

John Winter
Mechanical Engineering Manager
Bird Technologies

customers. This helps us produce what the customers really want as opposed to the old days when we essentially said ‘you’re going to have to settle with this because that’s all we had time to design.”

Using a new plastic injection molded part as an example, Winter says he reduced its design time 75 percent using synchronous technology. “Designing this critical plastic part using history-based CAD would take a month before we could order the mold, but just a week using synchronous technology and that included multiple design iterations and 3D printing,” Winter says.

This rugged Sensor Interface Module, designed using Solid Edge, provides a means of communicating with a Bird Power Sensor using a laptop computer for applications such as semiconductor manufacturers, testing military radios, solar panel manufacturing and other communication networks.
“The cost of the product comes down. The weight of the product comes down. The performance goes up. The warranty is a lot longer. Quality loves it. We love it. The profit margin loves it.”

John Winter  
Mechanical Engineering Manager  
Bird Technologies

Using history-based technology it would have taken about 30 minutes after fixing everything and getting it just right so that it would work,” says Winter.

Winter says he has been able to avoid having a history tree full of features “blow up” when making an edit or change to a model. “Using Solid Edge with synchronous technology, I don’t have to ever go back into my history tree. I’m always moving forward, and my model never blows up,” Winter says. “I could never say that with any past project, but now I don’t get those little red exclamation marks on my screen. I had to go back and spend all my time redoing what I’ve already done.”

“Using Solid Edge with synchronous technology I can actually do many more iterations now that I wasn’t able to do before. And because of that, the cost of the product comes down. The weight of the product comes down. The performance goes up. The warranty is a lot longer. Quality loves it. We love it. The profit margin loves it.”

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Customer’s primary business
Bird Technologies manufactures radio frequency measurement and management equipment. The company’s global markets include broadcast, cellular, government, land mobile radio, medical, military, and semiconductor customers.

www.bird-technologies.com

Customer location
Solon, Ohio  
United States

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Bottom line impact
Bird Technologies views Solid Edge with synchronous technology as a business differentiator. Winter believes using synchronous technology helped him earn a recent job promotion. “I know my project manager is very excited when I’m finished with a design really early. And I use some of the free time as a way to iterate more designs, so I am not just getting a design out but getting the best design out,” Winter says.

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