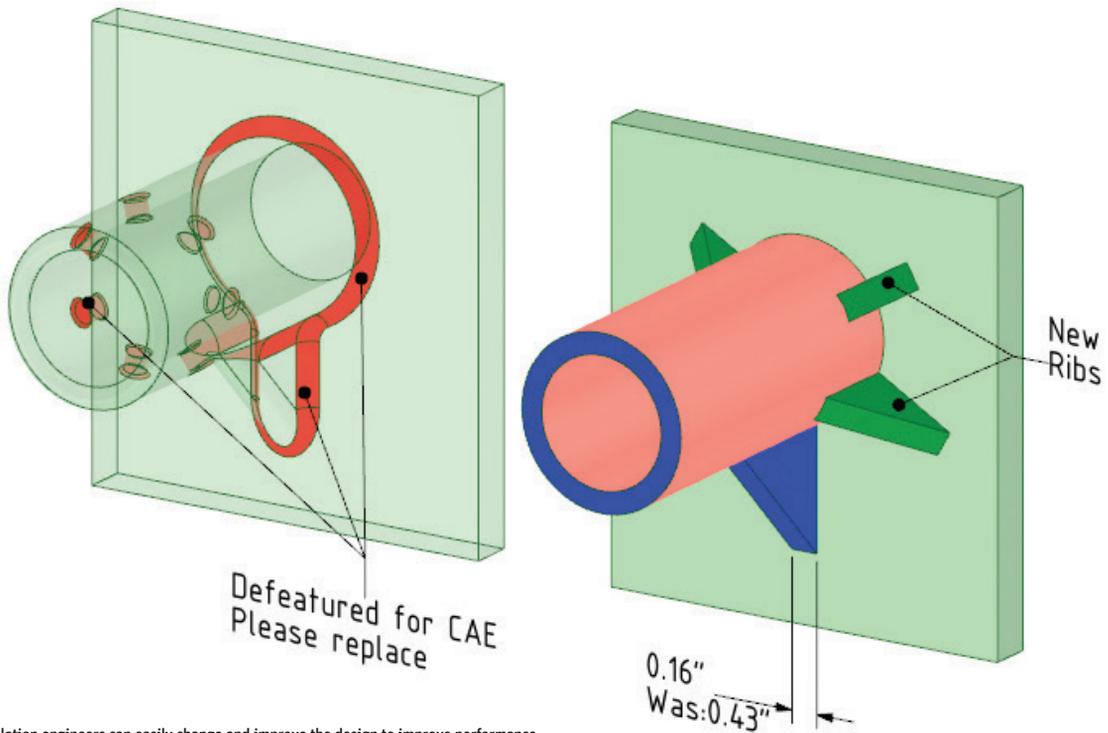


# BLENDING DESIGN AND SIMULATION

SpaceClaim and ANSYS bring innovative design and analysis closer together.

By Rebecca Swensen, Senior Product Marketing Manager, ANSYS

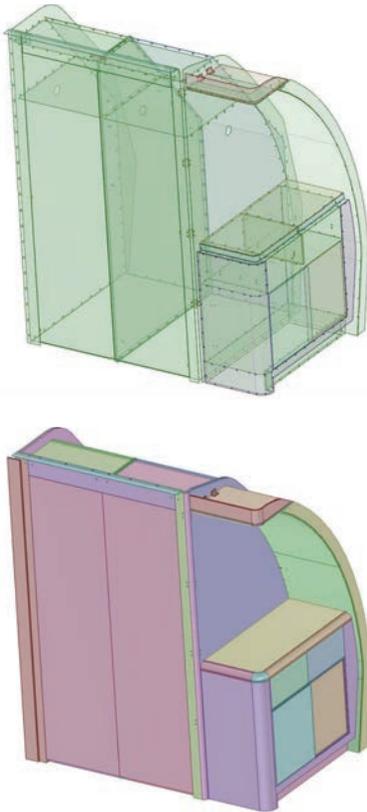


▲ Simulation engineers can easily change and improve the design to improve performance.

**S**paceClaim 3-D direct modeling software — available from ANSYS for several years and now part of the ANSYS product family — is a powerful tool for creating, importing and working with 3-D geometry. It has a simple and robust user interface that includes tools to defeature both parts and assemblies prior to meshing and solving. SpaceClaim has the power to simplify and automate what has traditionally been the time-consuming process of preparing geometry for use in a simulation system. With SpaceClaim, engineers can author new concepts and more easily use simulation to iterate on designs and drive innovation.

Increased speed and pressure from competition is compelling organizations to find easier, more effective ways to

**SpaceClaim 3-D direct modeling software was recently added to the ANSYS product family.**



▲ SpaceClaim makes it easy to create solids for analysis with automated fixes and simple tools for defeaturing.

develop innovative designs. By changing some workflow practices, an engineer can obtain workable geometry early in the design cycle. By performing simulation earlier in the design process, performance data can be built into the design process before key features have been determined to save product development time and costs.

SpaceClaim's defeaturing capabilities quickly create ideal models for meshing in a fraction of the time required by a traditional computer-aided design (CAD) tool. The software was created to enable those without CAD expertise to work with 3-D models, make the needed changes and resume their primary job function. SpaceClaim enables companies to perform analysis up front in the design process.

 **CONCEPT MODELING TOOLS DRIVE UPFRONT DESIGN EXPLORATION**  
[ansys.com/83blending](http://ansys.com/83blending)

**HOW SPACECLAIM WORKS**

To help with bad geometry, SpaceClaim makes model repair easy by using a fast detect-and-repair approach to fix files. The direct modeling software can automatically

fix common issues when opening files and also provides interactive tools for deeper repairs. If parts are missing some geometry, SpaceClaim's direct modeling technology will blend seamlessly with repair tools to reconstruct data. A CAD specialist isn't needed to execute changes; analysts can make the changes themselves and communicate the edits as needed.

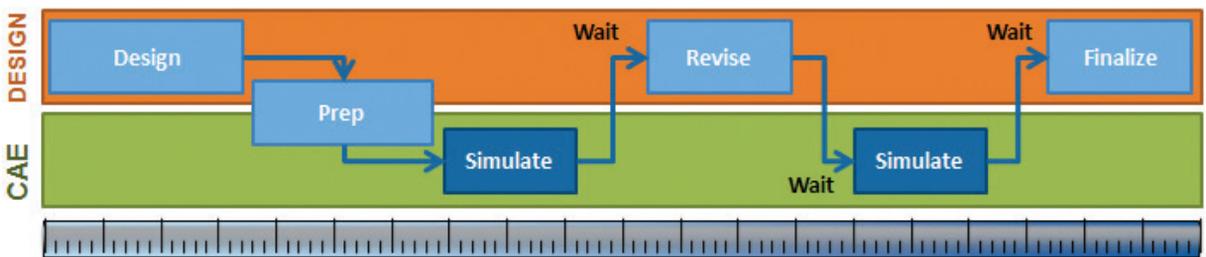
The core of SpaceClaim is four simple tools that accomplish most of the geometry editing:

- Pull: Add or remove from the design
- Move: Modify the design
- Combine: Cut solids
- Fill: Remove and clean geometry

For many common repairs, the automated detect-and-repair functions do most of the work and reduce the need for manual patching.

Speeding model preparation for simulation is an important part of implementing and realizing the full benefit of simulation-driven product development. ▲

**Before**



**After**

