

USSC GROUP

Taking specialty seat development to a higher level with SolidWorks solutions



SolidWorks design, analysis, product data management, and technical communication solutions helped USSC develop the Valor firefighter's seat, a breakthrough product in a new vehicle seating market.

Specialty vehicles, such as buses, locomotives, and fire trucks, require specialized operator seats like those manufactured by USSC Group. A leader in the development of world-class seating for many types of vehicles, the company comprises four different operating units with multiple production locations around the globe. USSC's success derives from its commitment to develop the most durable and ergonomic seats available to help reduce day-to-day driver fatigue and stress.

To maintain its industry-leading engineering capabilities, USSC periodically assesses the effectiveness of its design and engineering tools, according to Director of Product Development Jeff Krueger. "We want to make sure that our design platform matches our ambitious product development goals so that we stay at the technological head of our industry and never fall behind," Krueger explains. "That's why we decided in 2009 to do an in-depth comparison of the Solid Edge® software that we were using against SolidWorks® software."

USSC evaluated Solid Edge and SolidWorks software against a range of criteria. The evaluation covered functionality—such as ease-of-use, technical capabilities, design visualization and communication tools, and the ability to import nonnative CAD models—as well as external considerations—such as each solution's effect on hiring designers and engineers, impact on working with partners and customers, and pervasiveness within the supply chain.

"We asked both vendors to grade themselves against our criteria," Krueger recalls. "Then, we did our own evaluations. SolidWorks software came out ahead in our initial evaluation, but we decided to wait before making a wholesale CAD conversion. Two years later, we re-evaluated, and the spread between the two systems had grown. That's when we decided to standardize on SolidWorks."

Challenge:

Advance product development by improving interaction with partners and customers, visualizing of design concepts, and demonstrating of product usage.

Solution:

Implement SolidWorks Professional and SolidWorks Premium design software, SolidWorks Simulation Premium analysis software, SolidWorks Enterprise PDM product data management software, and SolidWorks Composer technical communication software solutions.

Results:

- Introduced single-point release firefighting seat
- Developed breakthrough product in just four months
- Improved ability to work with partner and customer data
- Realized better design communication and demonstration capabilities

USSC chose SolidWorks solutions because they give the company more freedom to work with partners, customers, and other integrated technologies. The seating manufacturer acquired 14 licenses of SolidWorks Professional and SolidWorks Premium design software, SolidWorks Simulation Premium analysis software, the SolidWorks Enterprise PDM product data management system, and SolidWorks Composer technical communication software.

"Aside from the evaluation, we believed SolidWorks had more momentum," Krueger recounts. "As a company, SolidWorks is proactively investing in development and growing the product, which provides us with more opportunity to leverage SolidWorks tools to advance product development."

Breaking into the firefighting seat market

Shortly after moving to SolidWorks in 2011, USSC validated its decision by developing a breakthrough product in a new market. "Right out of the gate, we used SolidWorks to design the Valor, the first single-point release seat for firefighters," Krueger notes. "Firefighter seats are configured to accommodate a firefighter's gear, including the tank from the self-contained breathing apparatus (SCBA). Existing seats require release of the SCBA bracket and a second release of the seat belt harness. We combined that into one single-point release and added a mechanism for adjusting the seat to suit each individual firefighter.

"Because we developed this in SolidWorks, we were able to work with models from the SCBA bracket and truck manufacturers to demonstrate how our seats operate," Krueger adds. "This is a brand new market for us, and the patent-pending Valor design leapfrogs the established competitors. We completed the design in just four months—including simulations, renderings, and animations—just in time for a major firefighting trade show. The Valor development was a major victory for us. It wouldn't have been possible without SolidWorks."

Visualizing, simulating, and communicating designs

The SolidWorks environment opens USSC to a range of new possibilities related to visualizing, simulating, communicating, and demonstrating design concepts. "There's more to developing a product than modeling and manufacturing it," says Senior Engineer Tom Vona. "We need to work with partners and customers outside the company. We need to be able to show how a product works, how it's installed, how it's assembled.

"SolidWorks works well with other CAD data, and tools like PhotoView 360 and SolidWorks Composer allow us to demonstrate our designs at an entirely new level," Vona says. "We're also just getting the PDM system up and anticipate additional benefits after we implement automated workflows."

Improved reseller support

USSC credits the support of SolidWorks reseller Prism Engineering with helping facilitate the SolidWorks deployment. "Prism did an excellent job supporting the process," Krueger stresses. "They held weekly conference calls with us, supported us at every step, and made us aware of what we could do with SolidWorks.

"With SolidWorks, there's no chance of us falling behind in terms of technology," Krueger adds. "We're out in front now, and with the help of Prism and SolidWorks solutions, we plan on staying there."

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Jeff Krueger
Director of Product Development



SolidWorks solutions enabled USSC to more effectively work with truck and self-contained breathing apparatus (SCBA) manufacturers, resulting in the introduction of an innovative single-point release mechanism.



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