

Aerospace and defense

SENER

Complex aerospace work gets a boost from Solid Edge

Product

Solid Edge

Business challenges

Shorter project timeframes
Complex designs
Ongoing design modifications

Keys to success

Solid Edge with synchronous technology
Ability to modify designs created in other CAD systems
No need to know model's history
Support from Pixel Sistemas

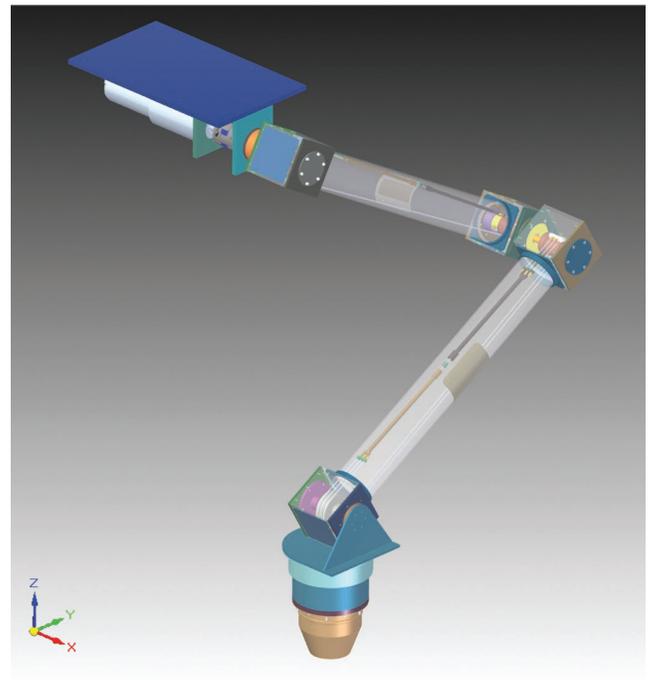
Results

Faster design changes
New level of engineering productivity
Ability to focus on designing instead of operating the CAD software
"Design without creative limits"

Synchronous technology speeds collaborative design projects by allowing fast modifications to any geometry

Multidisciplinary engineering

SENER Ingeniería y Sistemas S.A. (SENER) is an engineering, construction and systems integration company backed by more than 50 years of experience. Innovation, commitment to quality and independence are the company's values. Founded in Spain, SENER has become an international leader in a number of domains, including civil engineering and architecture,



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Designer, Structures and Mechanisms Section
SENER

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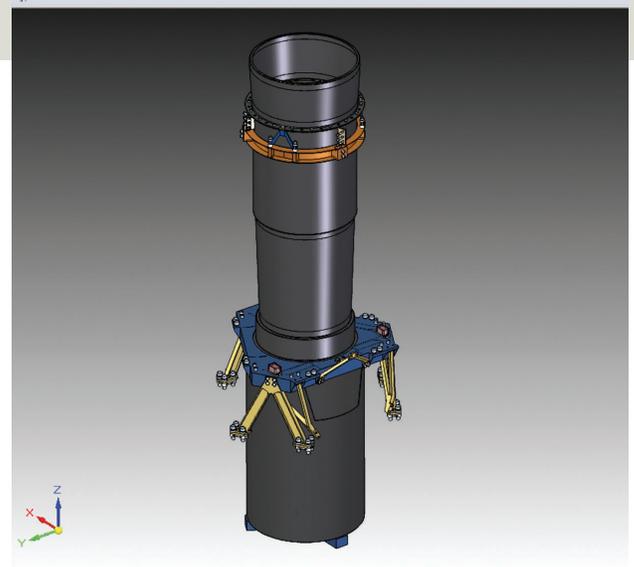
aerospace engineering, aeronautics and vehicles, actuator and control systems, power and processes, and marine engineering. SENER employs more than 2,500 professionals at 13 offices around the world. Countries represented include Algiers, Argentina, the United Arab Emirates, Japan, Mexico, Poland, Portugal and Spain.

SENER regards research and development (R&D) as an important component of its work, with the design process integral to its success. “We spend 15 to 20 percent of our time on R&D, and 15 percent of that is self-financed,” says Fernando Artigas Azkoaga, chief of the company’s Structures and Mechanisms section.

Like other engineering companies, SENER has had to find ways to work faster. “We dedicate ourselves to making prototypes, which we must deliver within increasingly short timeframes,” Germán Jaio Gogenola, coordinator of designers in the Structures and Mechanisms section. The tight deadlines led the company to consider upgrading its design software. “We must be alert to new developments in CAD (computer-aided design),” Gogenola explains.

New and better way to design

With assistance from Pixel Sistemas, a Siemens PLM Software channel partner,



SENER chose Solid Edge® software from Siemens PLM Software as its new design platform. “Pixel presented Solid Edge as a new and better way to design,” says Gogenola. “When we saw how it worked in a real design scenario, we were convinced that the Pixel proposal was the way to go. They understood our needs, our business and how to help.” SENER is still relying on Pixel Sistemas for technical support and “to further tune our design system,” Gogenola adds.

From the designer’s point of view, the transition to Solid Edge was not difficult, thanks to the software’s ease of use. “Solid Edge is very intuitive compared to other programs,” says Alfredo Fernández, a designer in the Structures and Mechanisms section. “It is the easiest [CAD software] to use that we have found.”

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Solutions/Services

Solid Edge with synchronous technology
www.siemens.com/solidedge

Customer's primary business

SENER Ingeniería y Sistemas S.A. is an engineering, construction and systems integration company, and an international leader in a number of domains, including civil engineering and architecture, aerospace engineering, aeronautics and vehicles, actuator and control systems, power and processes, and marine engineering.
www.sener.es

Customer location

Madrid
Spain

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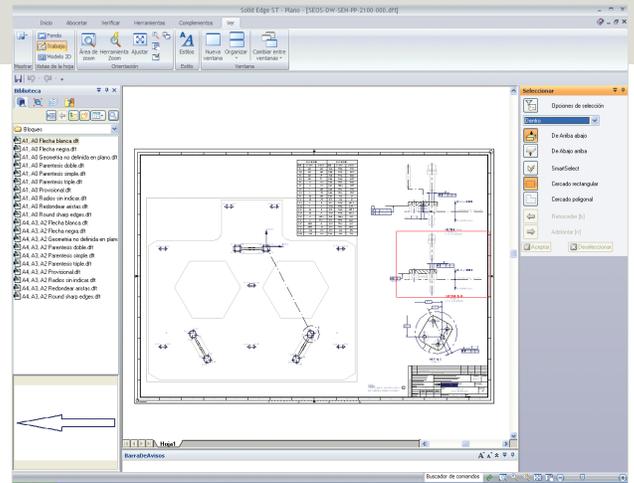
Solid Edge is currently being used on two large aerospace projects. One involves the design of an optical instrument that will travel onboard SEOSAT/Ingenio, Spain's first earth observation satellite. The second project involves a mechanism that will be used to collect asteroid samples. Both projects are being done for the European Space Agency (ESA).

Modifications in real time

The designs for these projects are highly complex, and the work is complicated by critical thermal requirements, as well as difficult assembly and manufacturing processes. According to Fernández, the design process is characterized by "continuous modification," which is why Solid Edge is so useful for these projects. "Solid Edge gives us a faster and more flexible way of making changes than we had previously," Fernández says.

He is referring specifically to Solid Edge with synchronous technology, which allows him and his colleagues to edit most types of geometry, regardless of which CAD system or which designer created it. "The most notable characteristic of Solid Edge with synchronous technology is the ability to make real-time modifications," says Fernández. "The steering wheel is the jewel in the crown. With it, we can handle any type of modification such as move, extrude, rotate, and so on."

A key advantage with synchronous technology is that users don't need knowledge of how a CAD model was constructed in order to modify it. "We can now work with



files transferred from any other CAD system, even if we have not had experience with that software," Fernández explains. "We can make changes without knowing the model's history. Any Solid Edge user can pick up a part made by any other user and work on it without knowing how it was made or consulting with the original engineer, yet the original intent is maintained."

"This speeds up the design process a lot," Fernández continues, "especially our design process, which requires continuous design modifications. We attribute our new levels of productivity to Solid Edge. Before Solid Edge, we spent a lot of time thinking about how to construct a model. Now we can focus on the design."

Another advantage with Solid Edge is a better ability to manage revisions. "We now have speed and flexibility when managing documents and files," Fernández adds. Overall, the move to Solid Edge has given the company's designers a new way of thinking about their work. "It's a new mentality – design without creative limits," he concludes.

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