SIEMENS
Ingenuity for life

Engineering services

VIRO

Multidisciplinary engineering firm uses NX, Simcenter and Teamcenter to spur organic growth

Products

NX, Simcenter, Teamcenter

Business challenges

Make quicker, smarter decisions earlier in the process

Meet tight customer deadlines

Deliver effective solutions to complex projects across industries

Keys to success

Integration of design and analysis through NX CAD and Simcenter

Synchronous technology to streamline the process of working with partners

Teamcenter to support communication and control

Results

Reduced development time by enhancing collaboration between design and analysis

Decreased cost of redesign by improving communication between engineering departments

Fueled company growth by providing higher-value customer service

VIRO notably improves efficiency through early integration of design and analysis and enhanced communication

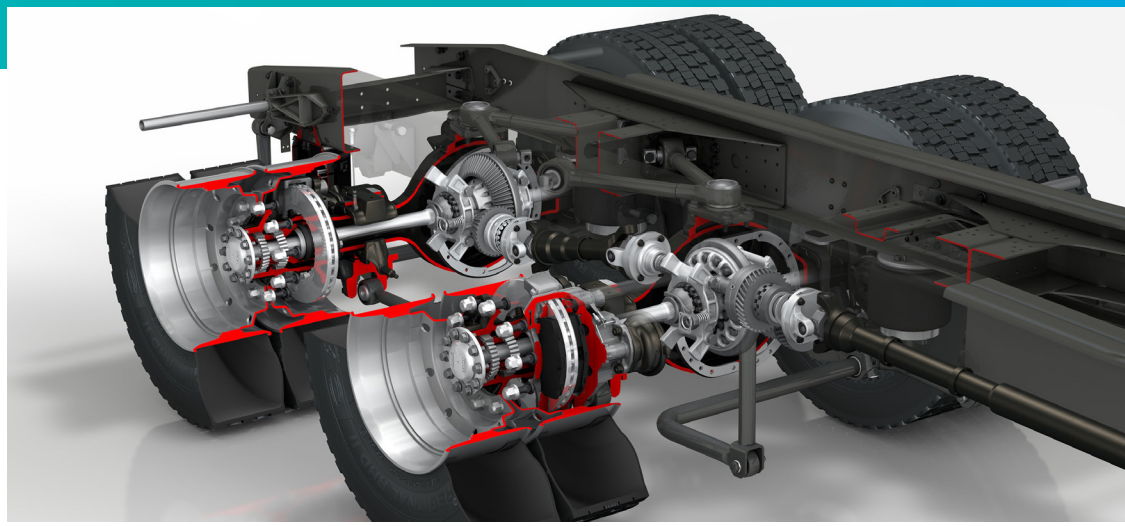
Prioritizing customer needs

Multidisciplinary engineering company VIRO specializes in industrial projects, mechanical engineering and product engineering. With customers ranging from small companies to multinational firms, such as ASML, AKZO Nobel and Shell, VIRO provides complete solutions, including feasibility studies, basic and detailed engineering, analysis, commissioning, and startup and aftersales service. Head-quartered in Hengelo, Netherlands, VIRO has eight offices and employees work within a flat organizational structure that supports cross-departmental cooperation to ensure that the needs of the customer always take priority. The company's office sites include Arnhem, Echt, Groningen and Vlaardingen (Netherlands), Osnabrueck and Munich (Germany), and Graz (Austria).

According to Martin Dibbets, director Netherlands, VIRO, the company has grown from 80 to 600 employees in the past decade. The use of product lifecycle management (PLM) technology (NX™ software, Simcenter™ software and Teamcenter® software) from Siemens PLM Software continues to help fuel the firm's organic growth.

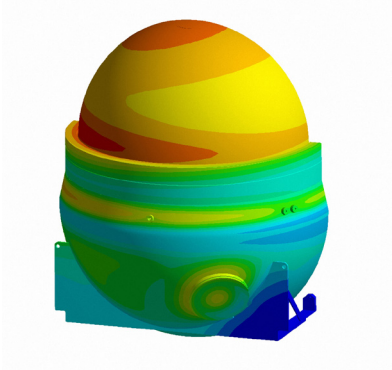
Enabling concurrent engineering

The engineers at VIRO know that the best way to meet customer deadlines is by shortening the development process. One way in which VIRO achieves this is by enabling design and analysis to be performed concurrently.



"NX and Simcenter are the most powerful tools that we have to develop new products."

Jacob Vlasma
Branch Manager
VIRO Hengelo



"What we used to see is analysts only getting involved in the late stages of a project," says Jacob Vlasma, branch manager, VIRO Hengelo. "That meant that any changes to the design were expensive and disrupted our timeline. To overcome this, we now have the computer-aided engineering (CAE) specialists and the design engineers working together from the outset, from the specification phase."

A team of design engineers at VIRO are trained in CAE techniques, enabling them to design with a better understanding of analysis, and appreciate this discipline's importance in terms of both design impact and time relative to the overall product development process.

"We can see that when we involve both CAD (computer-aided design) and CAE engineers from the beginning, we work more efficiently and create a better design," explains Vlasma. "By using NX and Simcenter, we can easily switch between the two different modes. We can use the CAD environment and the CAE environment together in one project."

According to Vlasma, this integration is VIRO's biggest advantage: "NX and Simcenter are the most powerful tools that we have to develop new products."

Use of Simcenter speeds up the process

Vlasma cites one example in which changes in wind direction were causing one side of a fluid-carrying pipeline to cool much more than the other side.

"We used Simcenter 3D Flow to determine the temperature profiles with the different wind directions," says Vlasma. "We put those temperature profiles along with the

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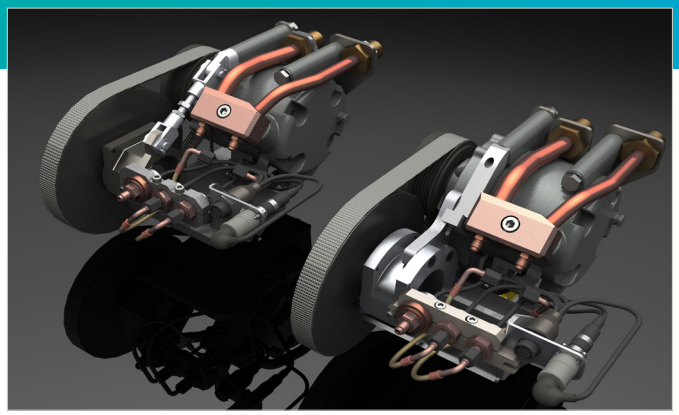

pressure distribution into the structural environment and assessed the mechanical stresses and fatigue."

VIRO's engineering analysts performed a computational fluid dynamics (CFD) analysis by using Simcenter 3D Flow to determine the temperature distribution on the surface of the pipeline, applied the temperature as a thermal load on the structure, and used this data to determine the deformation of the bellows and the ensuing mechanical stresses.

"To solve the problem, we altered the environment around the structure by adding some obstacles to make the wind distribution more even, which resulted in fewer stress fluctuations," recalls Vlasma. "This is a good example of how we use Simcenter, and how Simcenter helps us to complete a project with more speed and efficiency than when we use different software tools that aren't integrated as well as NX and Simcenter."

VIRO engineers find the synchronous modeling capabilities of the software particularly useful. In 2008, synchronous technology entered the CAD/CAE market with a breakthrough that delivered accelerated design, faster change, and improved re-use of any imported 3D CAD data.

"When customers send us design data, such as STEP (Standard for the Exchange of Product Model Data) files, we use the synchronous modeling functionality of Simcenter 3D to clean up the geometry and perform tasks like removing slivers and fillets to create meshable geometry," says Vlasma. "In addition, sometimes when we use other CAE programs, we employ synchronous modeling to clean up the 3D geometry." He notes, "Synchronous technology is an effective tool that noticeably accelerates the process."

Delivering excellent customer support

The complete integration of Simcenter and NX CAD plays a key role throughout the product development cycle.

"The most powerful aspect of Simcenter is that it combines all the different modules and, therefore, the different skills that we need to complete our projects, from fatigue analysis of complex machinery required to make offshore cranes, to temperature and pressure analysis of chemical installations," says Vlasma. "All the functionality that we need to perform our work is available within Simcenter."

Vlasma adds that the engineers at VIRO are often working with extremely tight deadlines: "The customer support at Siemens PLM Software is a big help to us. The company's support specialists are very good because they know our line of work, understand how tight our deadlines are and respond accordingly. That is also very important for us."

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Solutions/Services

NX
www.siemens.com/nx

Simcenter
www.siemens.com/plm/simcenter

Teamcenter
www.siemens.com/teamcenter

Customer's primary business

VIRO is a multidisciplinary engineering company that specializes in industrial projects, mechanical engineering and product engineering. It offers many industrial sectors an extensive range of services, and serves as a valuable partner to small companies as well as multi-national firms.
www.viro.nl

Customer location

Hengelo
Netherlands

"The overall value that VIRO gains from using NX, Simcenter and Teamcenter is reflected in the quality of the products that we deliver to our customers. It's this quality that has enabled VIRO to grow so rapidly in the past 10 years."

Martin Dibbets
Director Netherlands
VIRO

Supporting clear communication and quick decision-making

Teamcenter also plays an essential role in VIRO's product development processes.

"By using Teamcenter, everybody is always looking at the correct, most up-to-date data," explains Jelmer Edens, group leader at VIRO. "We can see the design changes that our customer makes, and the customer can see the design changes that we make. All VIRO engineers and our customer's employees are looking at the same information."

This kind of transparency supports clear communication and quicker, smarter decision-making within the development team.

"Each of our customers is more efficient as well," says Edens. "They see our data immediately, and they can expand their design capacity by using Teamcenter and their connections to VIRO."

Dibbets concludes, "The overall value that VIRO gains from using NX, Simcenter and Teamcenter is reflected in the quality of the products that we deliver to our customers. It's this quality that has enabled VIRO to grow so rapidly in the past 10 years. We know that we're going to need to recruit more than 150 employees, and they will mainly be using NX, Simcenter and Teamcenter."

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Group Leader
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