



REINVENT THE WHEEL AT STARCO

STARCO DEMOCRATIZED CAE WHEEL ASSEMBLY PROCESS WITH ALTAIR® HYPERWORKS®.

About the Customer

Founded in 1961, STARCO develops and delivers high-quality wheel and tire solutions to the European market. They offer a range of commercial tires for gardening and landscaping vehicles, tractors, agricultural attachments, trailers and caravans, and tires for industrial utility vehicles. Since 2017, STARCO has been part of the KENDA Group, one of the world's major tire and tube manufacturers, which boasts a workforce of over 12,000 employees and factories and facilities all over the world.

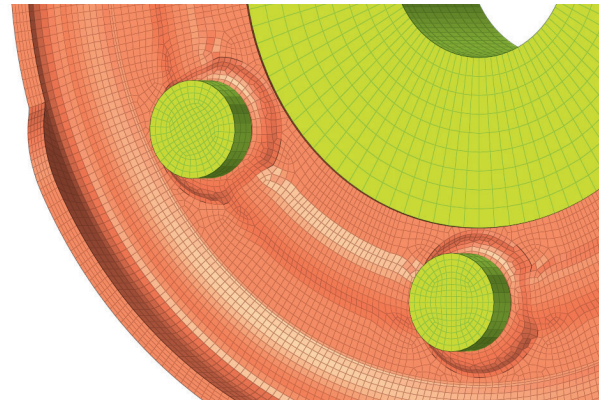
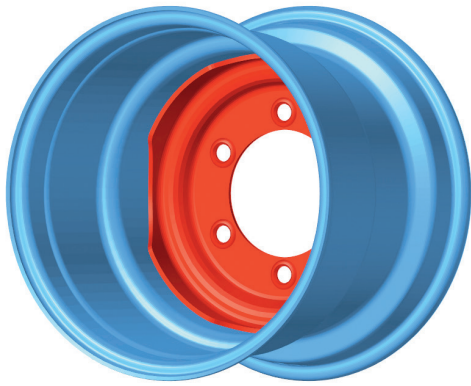


Thanks to Altair's expertise and services, we could not only democratize the creation of hexa-mesh and model setup for wheel assembly – ensuring adherence to our high quality standards, but also achieve a lead time reduction of up to 97% compared to the manual process thereby leading to time savings of 800 hours per year.

Engin Ünal, research & testing team leader, STARCO (KENDA Europe Technical Centre)



Try Altair® HyperWorks® Today: [Download Now](#)



In line with their vision to grow business through innovation, STARCO strives to optimize their business processes throughout the enterprise. The joint KENDA European Technical Centre is one of the best advanced research and development centers in the market. Utilising this synergy, STARCO is interested in simulation and other engineering solutions so they can continue offering high performing wheel and tire solutions to international OEMs.

Their Challenge

While developing wheels has always been a big engineering task – manufacturers have to meet high performance targets while also meeting budget, material, and environmental requirements – a difficult, time-consuming challenge for engineers today is the model setup. Usually, they start by creating the CAD geometry and using it for mesh creation. Both the geometry preparation and the meshing – including setting up the model itself – are lengthy and demanding tasks that require in-depth knowledge of various meshing techniques, which is only available to a small number of specialist FE engineers. A common task at the KENDA Tech Centre is the manual creation of a hexahedral mesh of rims which costs a lot of engineering time. To save time, STARCO was looking for a solution that would democratize meshing know-how, which would let their designers perform model-setup without having to rely (and wait) on simulation expertise.

Our Solution

To tackle this challenge, STARCO turned to Altair, who provided a solution that helped the KENDA-STARCO team in many ways: Altair® HyperWorks® is a high-performance finite-element pre-processor that provides a highly interactive and visual environment to analyze product design performance, offering direct interfaces to commercial CAD and CAE systems and a rich suite of easy-to-use tools to build and edit CAE models. Altair implemented a fully automated process in HyperWorks for STARCO that automated the hexa-mesh creation based on user-defined parameters. Using this fully-automated batch solution inside HyperWorks, STARCO could now create the hexa-mesh of wheel assembly and set up the model considering property-material assignments, contact definitions, and other minutiae in minutes instead of hours.

Results

The new automated process let the designers at the lab create hexa-mesh without needing to wait for specialists – and saved the company about 800 hours of time. “Thanks to Altair’s expertise and services, we could not only democratize the creation of hexa-mesh and model setup for wheel assembly – ensuring adherence to our high STARCO quality standards, but also achieve a lead time reduction of up to 97% compared to the manual process thereby leading to time savings of 800 hours per year,” said Engin Ünal, research & testing team leader, STARCO (KENDA Technical Centre).

LEFT: Using the new automated process in Altair® HyperWorks® enabled the KENDA-STARCO team to quickly set up the model. **RIGHT:** STARCO democratized the creation of hexa-mesh and model setup for wheel assembly and achieved a lead time reduction of up to 97% compared to the manual process.