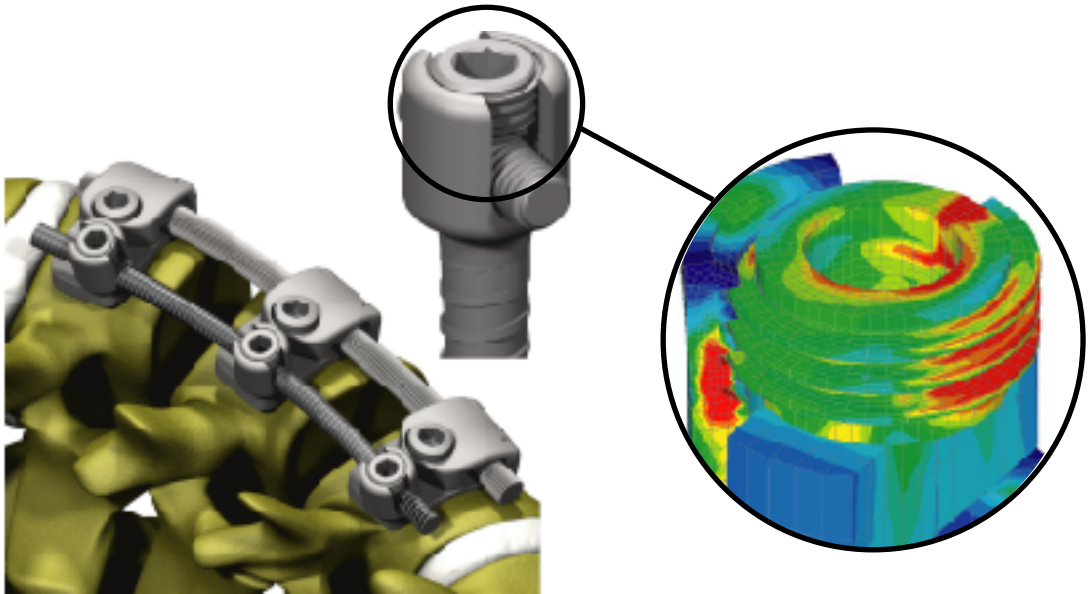


When Engineers and Doctors Looked to Repair the Human Spine...



"We needed an FEA package that could handle very complex assemblies and give us strong correlation with FDA acceptance testing. After an extensive evaluation, we chose NEiNastran. As a result, we were able to optimize our designs, reduce the number of prototypes and shorten the product delivery cycle.

NEiNastran definitely works for us."

Thilo Trautwein, Director of Engineering
-ACES GmbH

ACES Ing.-GmbH is a contract design and analysis house focused on the orthopedic implant market.

THE CHALLENGE

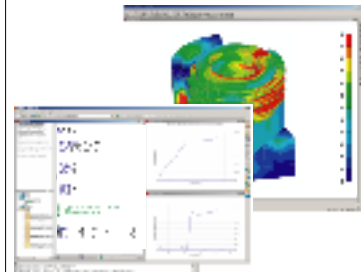
Spinal implants consist of plates, screws, rods, disc replacements and fusion cages. Many critical constraints are involved in their design. Among them: size, volume, compatibility with current system components, and ability to use existing surgical instruments.

THE SOLUTION

Utilizing the power of NEiNastran, ACES was able to analyze not only complex nonlinear material models, but the complete sliding contact between arbitrary surfaces including friction (N.B. this is impossible with standard gap or slide line elements found in typical FEA). Results? The new spinal implant design gave better system performance, improved patient safety and saved \$60K and 6 months in product testing. See Conference Papers on our website for full technical details.

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NEiNastran FEA Model -
Vertebral Screw

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