



SIMSOLID – A SIMULATION REVOLUTION



Altair

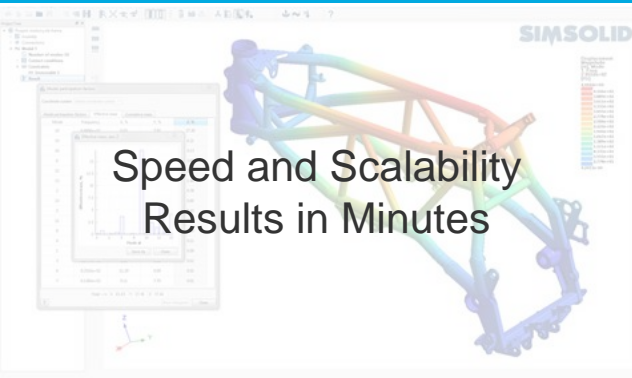
A NEW PARADIGM FOR SIMULATION



Altair **SimSolid** introduces a **new technology** that operates on original, un-simplified **CAD geometry** directly, and **does not create a mesh**

JOIN THE SIMULATION REVOLUTION

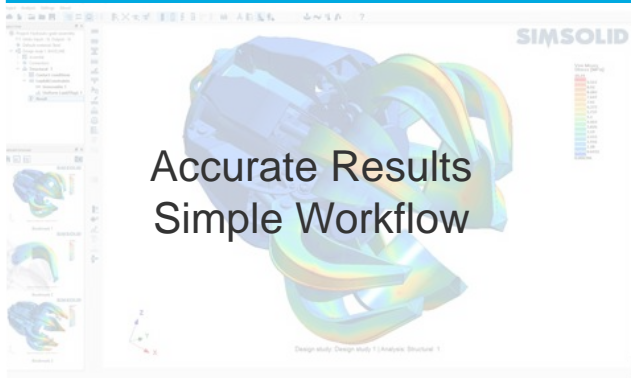
Design Faster



Explore More



Boost Productivity



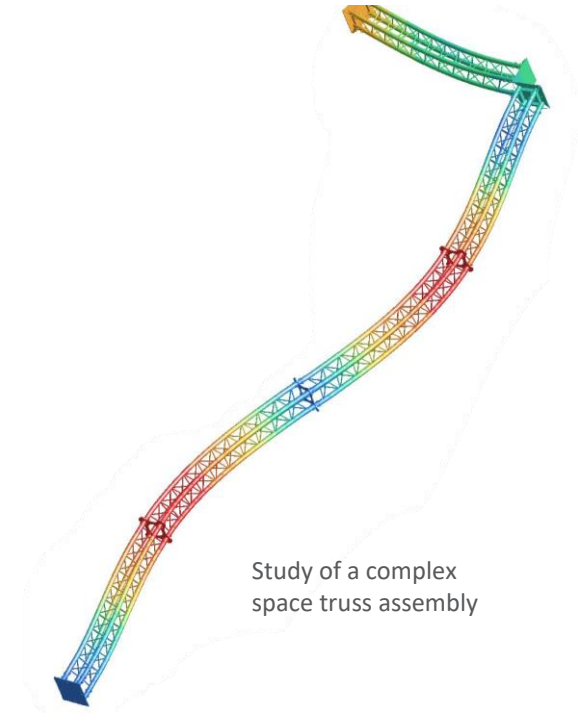
THE NERDY STUFF (NOT SO NERDY AFTER ALL)

SimSolid is a **structural analysis solver** that implements a generalization and extension of the **finite element method (FEM)** without a traditional mesh.

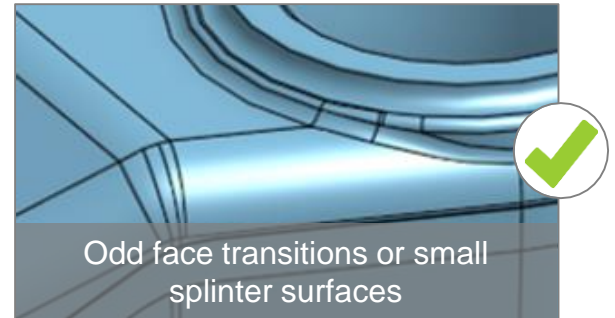
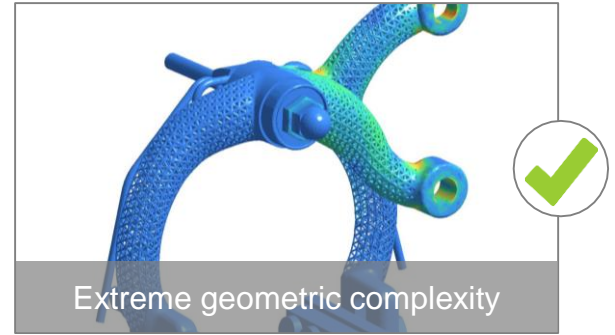
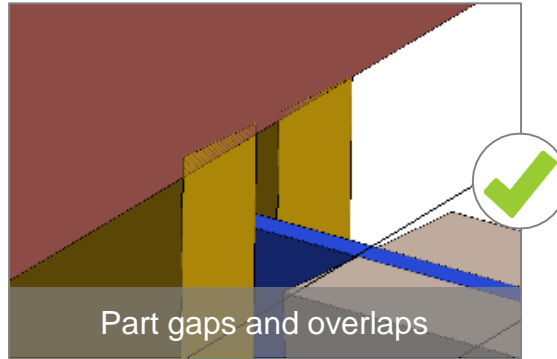
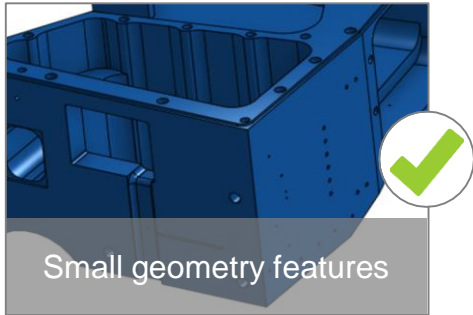
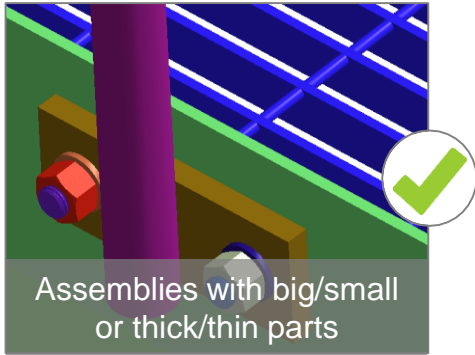
In SimSolid, each part is represented by **large general shaped regions**. Boundary compatibility is met approximately between regions and is adjusted during each solution pass.

Solution refinement is performed via p-enrichment or via introduction of special non-polynomial functions.

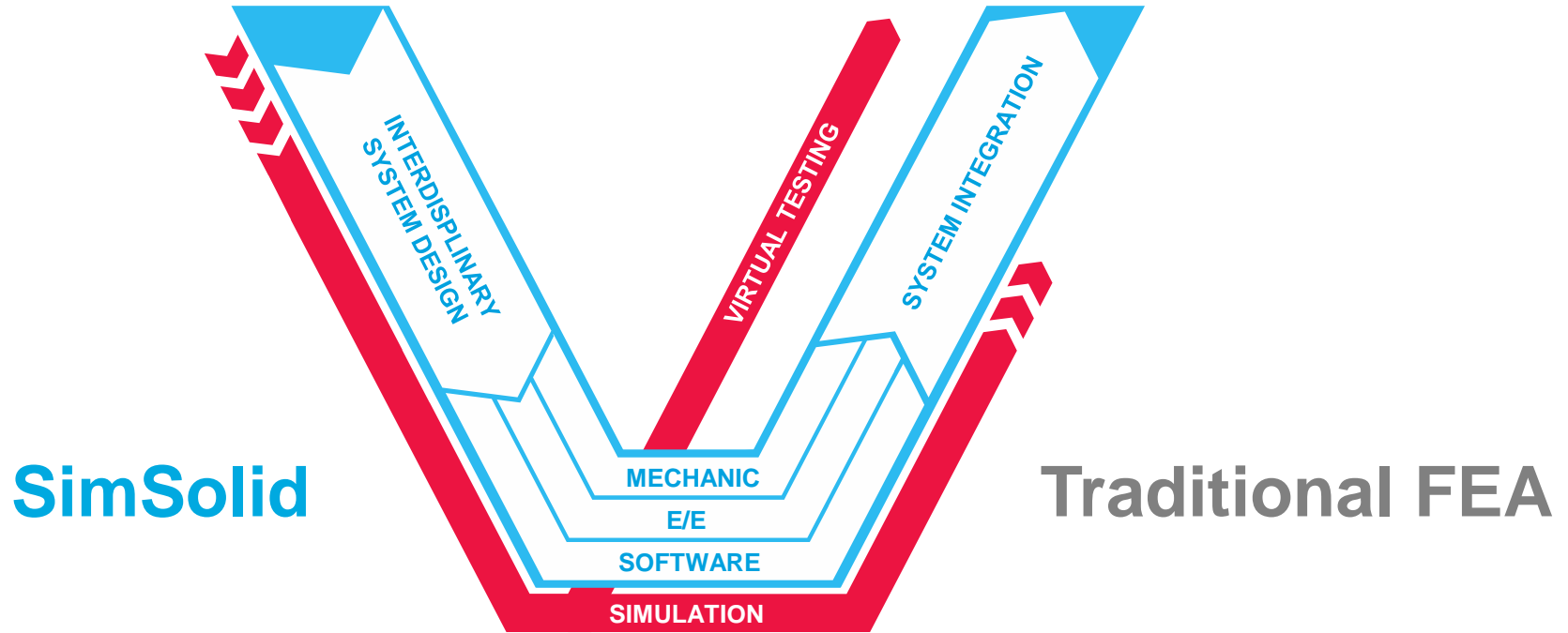
Solution adaptation is based on relative local energy density changes and absolute errors on region boundaries.



TRADITIONAL FEA CHALLENGES ARE NOT A PROBLEM

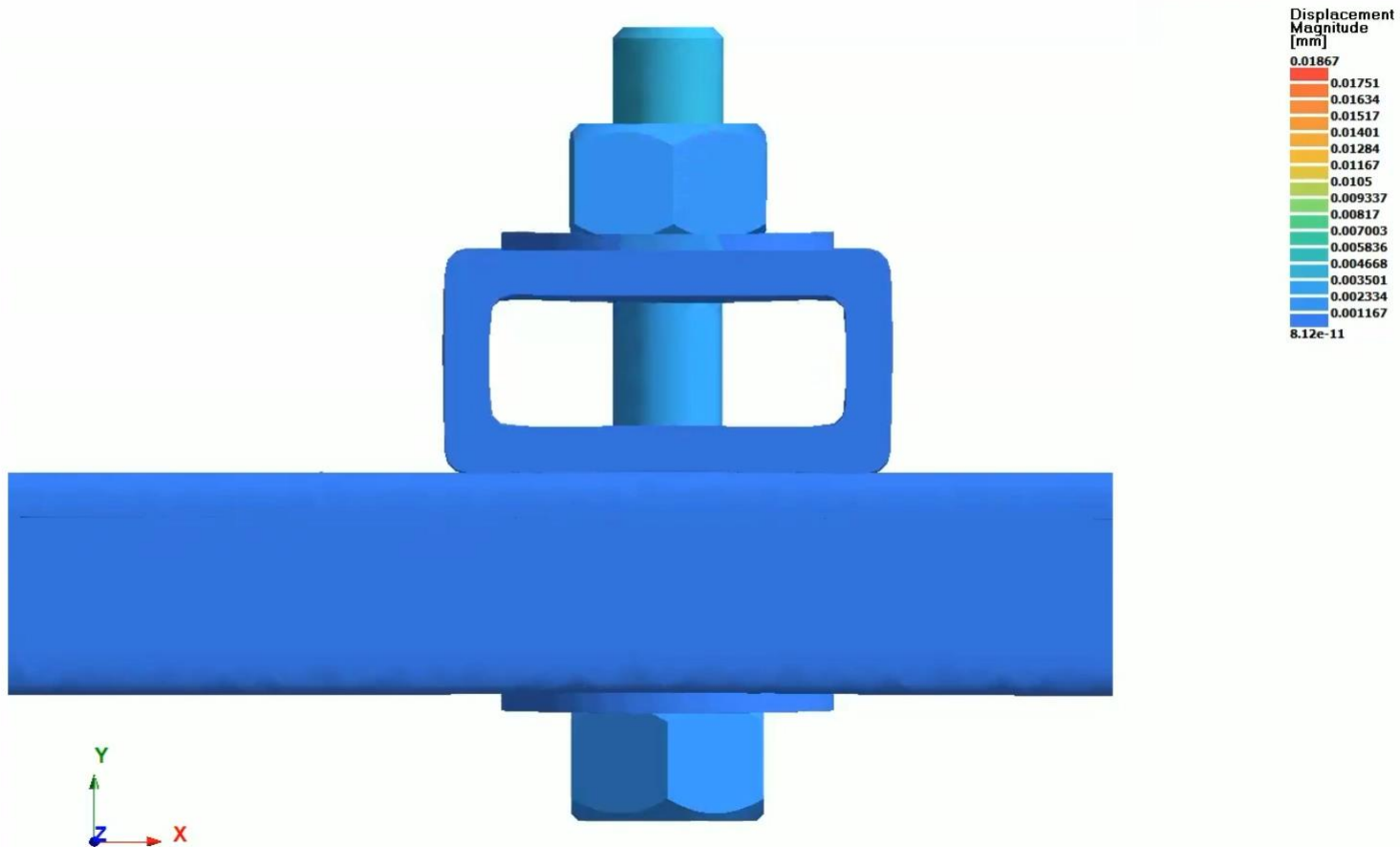


PRODUCT FIT – EARLY SIMULATION-DRIVEN DESIGN



SIMSOLID IN TWO MINUTES





NOTABLE FEATURES



Solutions

- Modal
- Linear Statics
- Nonlinear Statics
- Frequency Response
- Linear Transient
- Random Response
- Thermal
- Thermal-Stress
- Inertia Relief
- Bolt Pretension



Materials

- Isotropic
- Elastoplastic
- Rigid
- User Extensible



Connections

- Auto-connections
- Bonded, Sliding and Separation with Friction
- Bolts
- Spot Welds
- Seam Welds
- Virtual Connectors

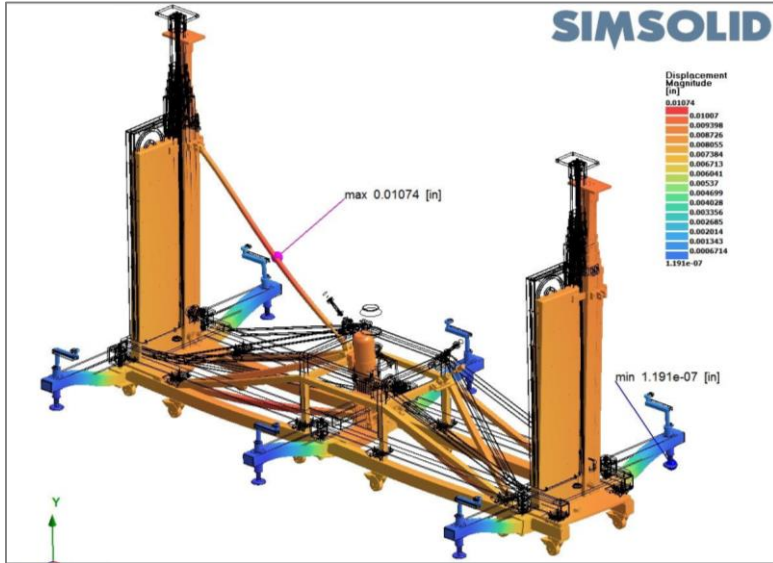


Results

- Contours and Animations
- Displacements, Stresses/Strains
- Frequencies and Mode Shapes
- XY Plots
- Modal Participation Factors
- Forces: Reaction, Contact, Bolts and Welds
- Min/Max Labels
- Safety Factors
- Bookmarks



EVALUATE COMPLEX ASSEMBLIES

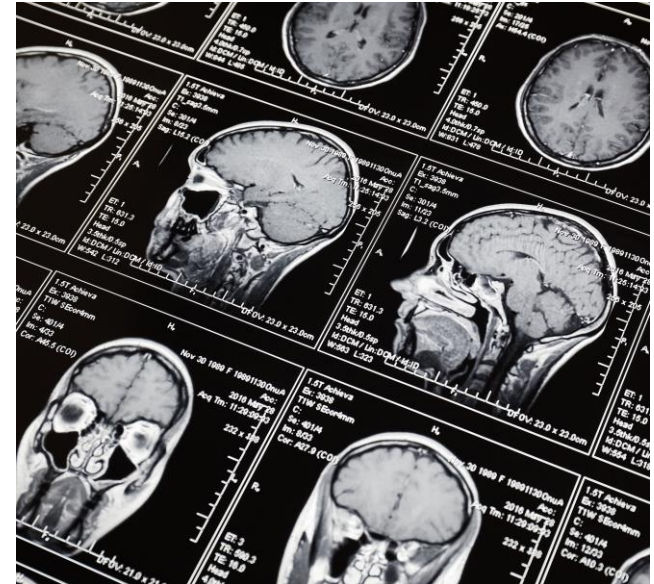
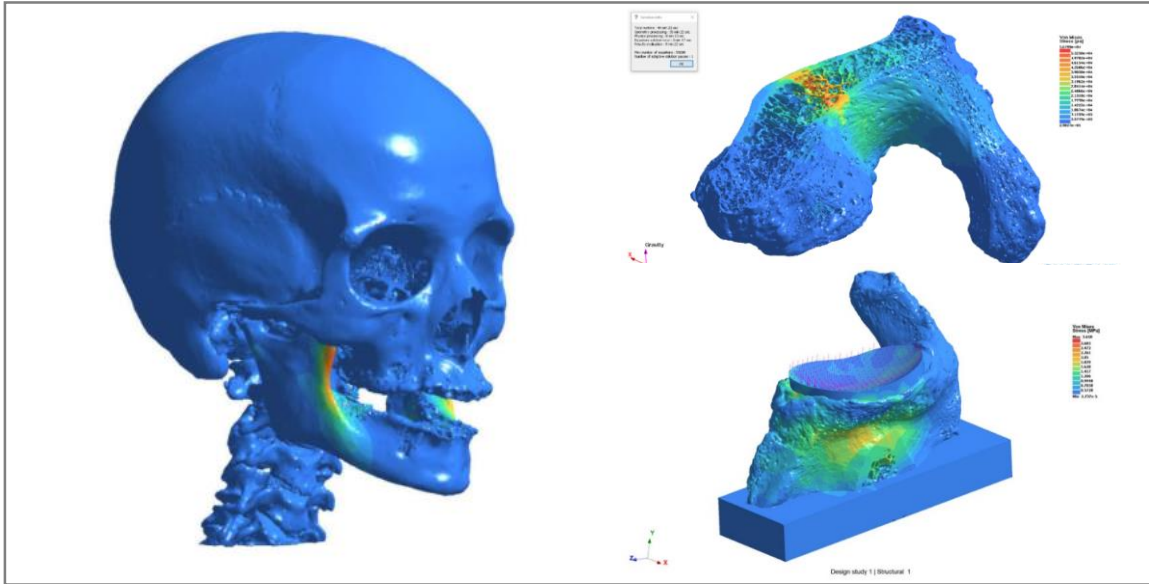


“When we are ordering tons and tons of the raw materials for our chains, a pound here and a pound there starts becoming important, so that's where we spend a lot of time trying to optimize our product. Applying SimSolid to this challenge in the long run will make us a lot of money .”

– Bob Adams, Engineering Manager - Serapid, Inc.



BIOMEDICAL RESEARCH



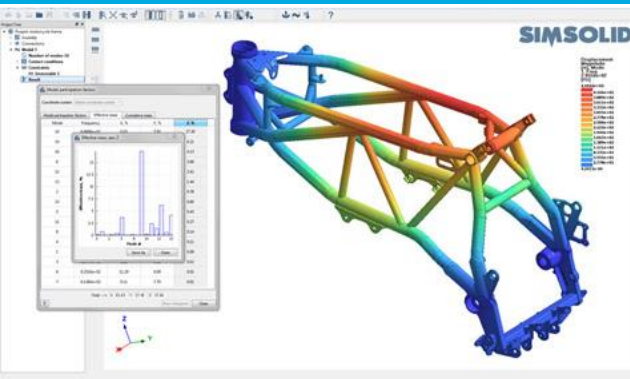
“We have found SimSolid to be an invaluable aid to our research work. Its ability to analyze complex bone geometry is a capability that is not practical with other FEA methods.”

– Louis Ferreira, Associate professor – Western University, Canada

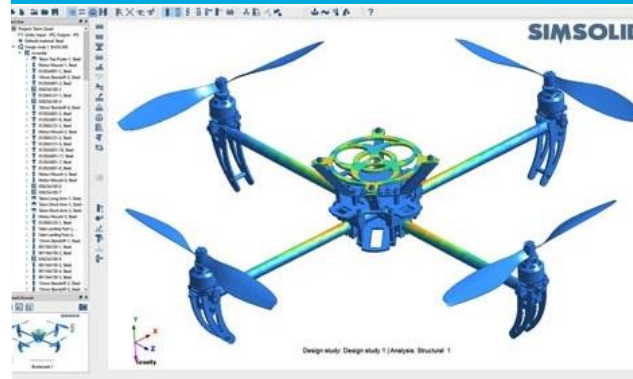


JOIN THE SIMULATION REVOLUTION

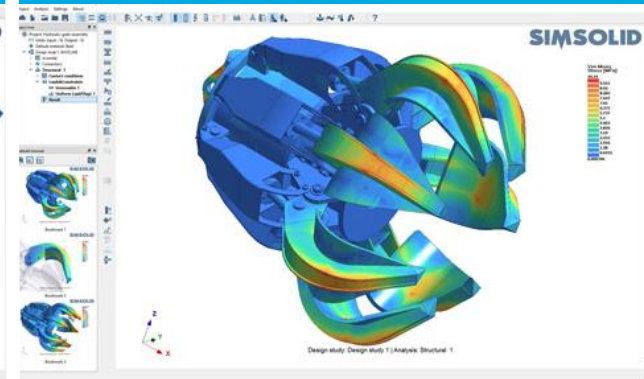
Design Faster



Explore More



Boost Productivity



Visit altair.com/simsolid for your free trial license today

