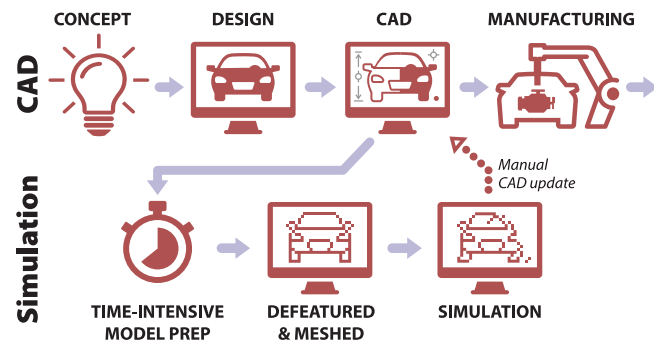
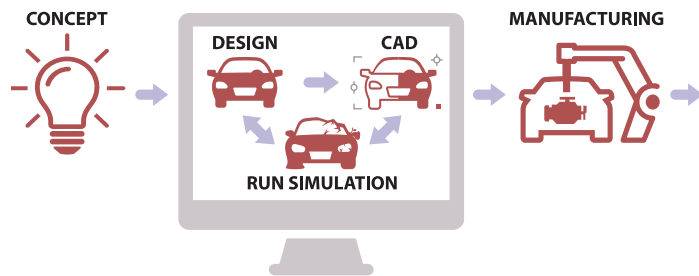


# Our Vision

**T**ODAY'S DESIGN through analysis workflow is inefficient, antiquated and not suitable for the growing demands for higher-accuracy simulation.



Coreform sees a future of isogeometric analysis (IGA) where simulation is run directly on smooth CAD models, saving time and giving more accurate results.



Our efforts today are focused on developing simulation technology that runs directly on splines, the building blocks of CAD.

Coreform is writing its spline-based simulation software, Coreform Analyze, and its preprocessor, Coreform Process, to be easily inserted into existing workflows, providing


- Better accuracy in less time
- Increased numerical robustness
- Lower simulation costs

Coreform LLC is a developer of innovative simulation tools for engineering professionals in various industries, including automotive, aerospace, and defense. Founded in 2014 and based in Orem, Utah, USA, Coreform software enables simulations directly on smooth CAD geometry, saving time and giving more accurate results.



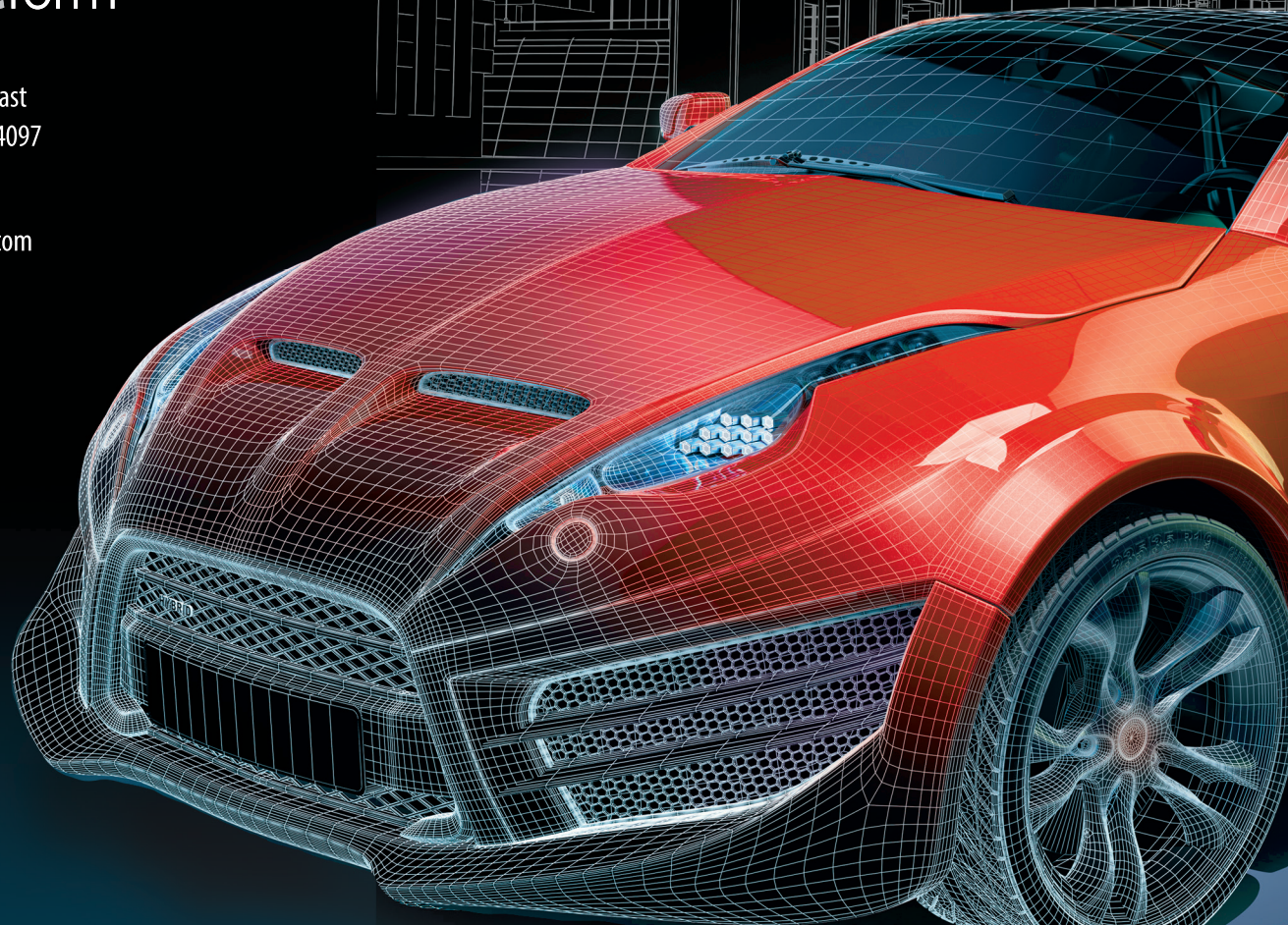
1427 South 550 East  
Orem, Utah, USA 84097

801.358.2671  
<https://coreform.com>



# coreform

Better simulation  
through better geometry

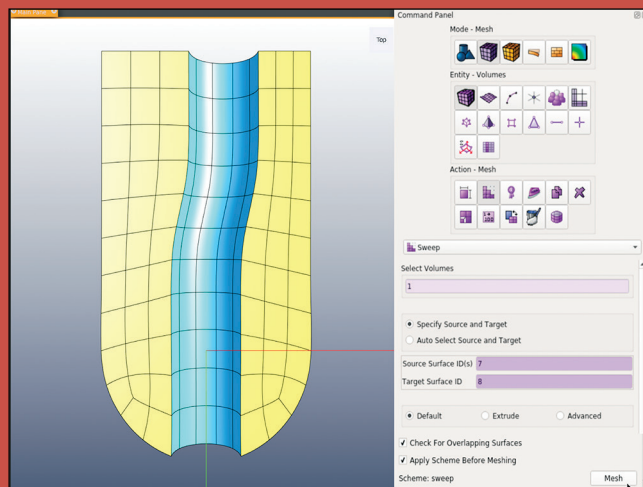


# Coreform Process

**S**PLINE-BASED simulation requires fewer elements than traditional FEA to capture important geometric and solution features, greatly reducing total compute time. Coreform Process is a spline-based simulation preprocessor that can generate unstructured smooth spline models for simulation from CAD.

In 2019, Coreform acquired csimsoft, an elite team of meshing experts, and their Trellis mesh generation software. For decades, csimsoft has been the co-developer of Sandia National Laboratories' widely-used CUBIT meshing tool. Trellis is the commercial version of CUBIT.

Coreform Process (beta), combines the power of Trellis' mesh generation with recent advances in analysis-suitable geometry representations. These meshes are converted to Coreform's unstructured spline definition (U-splines) to create smooth analysis-suitable for simulation, then exported to Coreform Analyze or other codes such as LS-DYNA.



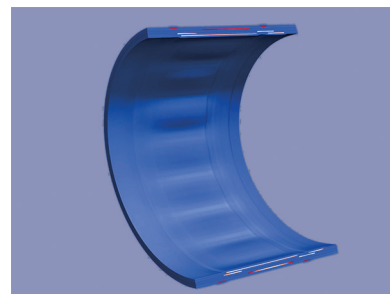
# Coreform Analyze

**C**OREFORM ANALYZE (beta) runs simulation directly on spline models for higher accuracy and decreased simulation time, allowing engineers to tackle difficult simulation problems that aren't handled well by traditional FEA.

Coreform Analyze features include:

- Implicit and explicit solution algorithms
- Non-linear dynamics
- Native support for beams, shells, and volumes using NURBS, U-splines, and hierarchical splines
- Refinement in  $h$ ,  $p$ , and  $k$
- Contact

**Case study** — In this simulation to predict delamination and wrinkling of a flex cable after bending and a temperature change, Coreform's software enabled a simulation to be run on a desktop that was previously impractical for a customer to run.



Left — Simulation results

Right — Flex cable illustration

	Commercial Code	Coreform Analyze	Comparison
<b>Element count</b>	• 10 million	• 10,900	• ~1000x fewer elements
<b>Solution method</b>	• Explicit statistics • 5 million timesteps	• Implicit dynamics • 250 timesteps	• ~20,000x fewer timesteps
<b>Compute hours</b>	• 72,000 (2000 cores for 36 hours)	• 60 (5 cores for 12 hours)	• 1200x faster runtime
<b>Geometric representation</b>	• Approximate	• Exact	• Better geometry

# Our Team

**C**OREFORM'S TEAM members are experts in both spline-based simulation (sometimes called isogeometric analysis or IGA) and analysis-suitable geometry. We see this as the future of analysis because of its superior accuracy, robustness, and efficiency over traditional FEA.

## Coreform leadership team

- **Matt Sederberg** — Former T-Splines, Inc. CEO and head of Autodesk automotive design
- **Dr. Derek Thomas** — IGA and computational science
- **Dr. Kevin Tew** — High-performance computing
- **Dr. Michael Borden** — IGA and computational science
- **Randy Morris** — Mesh generation
- **Paul Ressler** — Sales and marketing

## Senior advisors

- **Dr. Michael Scott** — Brigham Young University
- **Dr. Thomas J.R. Hughes** — University of Texas at Austin



Above — Coreform simulation team



Left — Coreform's recently acquired csimsoft team