Eliminate meshing time

Whether your models are geometrically simple or complex, they are trivial to mesh with Coreform IGA's truly automated meshing technology.

Coreform IGA leverages the power of smooth splines to deliver faster FEA solutions. It enables analysts to calibrate simulation accuracy and speed to fit any stage of the product development process.

Legacy FEA solvers require time-consuming mesh generation for every simulation. The Coreform IGA solver is built to run non-linear simulations directly on CAD.

Time required to mesh:

10 Seconds

30 Seconds

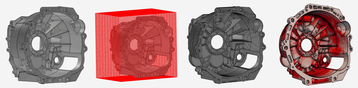
Model made in collaboration with Sandia National Laboratories

Next-Gen Simulation

Request a free trial of Coreform IGA today to help you maximize simulation accuracy & speed through the power of isogeometric analysis.

What is IGA?

Coreform's isogeometric analysis (IGA) eliminates the tedious manual meshing step required for accurate simulations. Coreform's workflow starts with a CAD part, (1) immerses it in a high-order spline mesh, and (2) performs a fully automated volumetric trimming operation that (3) produces a new trimmed spline mesh, which can be (4) used for linear and non-linear, static and dynamic simulations.



CAD part | CF IGA meshing (4mm elements) | Simulation model | Simulation result

coreform llc

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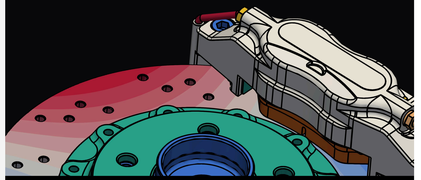
IGA-powered FEA

coreform IGA

Defeaturing now optional



coreform

Automate engineering design workflows

Experience iterative simulation workflows that make you feel creative, not exhausted.

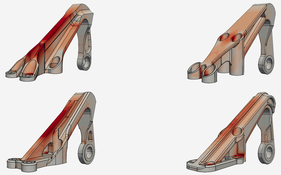
Traditional meshing

- Defeaturing and simplifying CAD is labor-intensive
- Mesh creation is a tedious science and learned art
- Many potential sources of truth: design CAD, simplified CAD, and levels of mesh refinement
- Design iterations difficult to integrate with simulation

Coreform's truly automatic meshing

- No CAD defeaturing or simplification required
- Mesh creation is fully automated
- Single source of truth: design CAD can be automatically meshed for different applications
- Design iterations directly on CAD
- Fully scriptable Python API

Dozens of CAD models from the GrabCAD Alcoa bracket challenge were analyzed with zero manual meshing time.



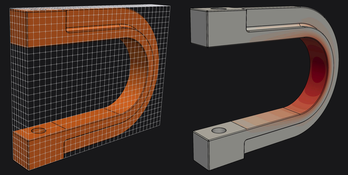
Airplane Bearing Bracket Challenge sponsored by Alcoa and GrabCAD

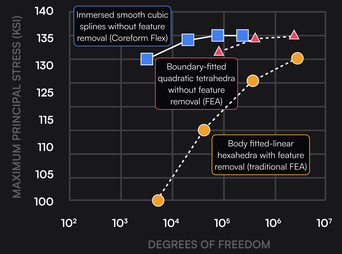
Supported CAD file formats: CATIA, NX, Creo, SolidWorks, Parasolid, ACIS, STEP

More accurate than traditional FEA

Coreform IGA is mathematically proven to be more robust and accurate per degree of freedom than traditional FEA.

Coreform IGA enables simulation directly on CAD with fully automated meshing.





Coreform IGA's high-order, smooth spline basis functions allow engineers to efficiently obtain accurate and useful solutions.

Reclaim months of engineering time every calendar year

Preprocessing

- Fully automatic meshing
- Problem definition and model set up
- Fully scriptable through Python API
- Integration with Coreform Cubit for geometry cleanup and body-fit meshing
- Available for Windows, Linux, or Chrome browsers
- Example journal files for easy learning

Coreform IGA for Abaqus

Coreform IGA unifies our solver technology and Abaqus integration under a single product name.

coreform IGA
for Abaqus