

goengineer ADVANCED SIMULATION TEAM

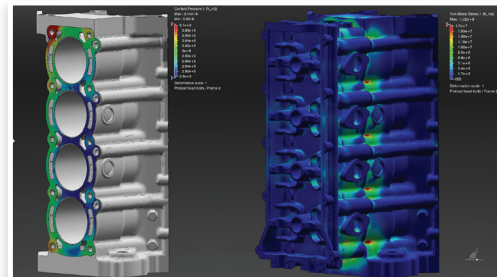


SIMULATION EXPERTISE ON DEMAND

Not everyone has the in-house staff, specialized skills, or advanced toolsets to do all of the CAE that would most benefit their project or program. This is where GoEngineer comes in.

Our engineers are equipped with the **best software**, we have **decades of experience** using it in all kinds of ways, and we've built a **reputation for quality work and reliable service**. We can help on short notice on a per-project basis or we can integrate with your team as a regular resource. We can operate at any level of independence you'd like, and the more we work with you, the more efficient it gets.

You can affordably leverage a high-skill CAE team right now — no staffing, hardware, or software necessary — because GoEngineer provides engineering excellence on demand.



STRUCTURAL

OPERATIONAL STRESS & STRENGTH

Linear-static stress and displacement of operational loading.



INPUTS:

- CAD (up to 10-part asm), materials, fasteners (will be rigidly modeled)
- Operational load cases
- Performance targets

DELIVERABLES:

- Assessment of deformation and stress states, including hot spots
- Design recommendations to improve performance and reduce cost/weight

ADD-ONS:

- True-to-model fastener simulation
- Nonlinear analysis of abuse/overload
- Vibration or durability evaluation
- Thermal effects and influence

DROP TEST SURVIVAL EVALUATION

Nonlinear-dynamic stress and displacement of drop scenario.



INPUTS:

- CAD (up to 10-part asm), materials, fasteners (will be rigidly modeled)
- Drop test scenario
- Performance targets

DELIVERABLES:

- Assessment of deformation and stress states, including hot spots
- Video of the transient event
- Design recommendations to improve performance and reduce cost/weight

ADD-ONS:

- True-to-model fastener simulation
- Additional drop test scenarios

*A scoping call will precede any formal quote to determine if pricing adjustments (in either direction) are required for scale, complexity, or sophistication.

NATURAL FREQUENCY RESPONSE

Discover critical natural frequencies and mode shapes.



INPUTS:

- CAD (up to 10-part asm), materials, fasteners (will be rigidly modeled)
- Operational load cases
- Performance targets

DELIVERABLES:

- Frequency and mass participation table, mode shape animations
- Design recommendations to improve performance and reduce cost/weight

DYNAMIC LOADING RESPONSE

Determine stress and displacement response to forced vibration.



INPUTS:

- CAD (up to 10-part asm), materials, fasteners (will be rigidly modeled)
- Operational load cases
- Performance targets

DELIVERABLES:

- Frequency and mass participation table, mode shape animations, displacement acceleration, stress plots
- Design recommendations to improve performance and reduce cost/weight

ELASTOMERIC/METAL SEALING EVALUATION

Evaluate sealing integrity under operational loads.



INPUTS:

- CAD (up to 10-part asm), materials, fasteners (will be rigidly modeled)
- Operational loads (temperature, pressure, external loads)
- Performance targets

DELIVERABLES:

- Assessment of deformation and sealing integrity
- Design recommendations to improve performance and reduce cost/weight

ADD-ONS:

- Vessel operational and burst pressure evaluation
- Vibration or durability evaluation

BUCKLING STABILITY EVALUATION

Calculate buckling modes to evaluate stability.



INPUTS:

- CAD (up to 10-part asm), materials, fasteners (will be rigidly modeled)
- Operational load cases
- Performance targets

DELIVERABLES:

- Load factor and buckling mode shape plots and animations
- Design recommendations to improve performance and reduce cost/weight

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PARAMETRIC DESIGN OPTIMIZATION

Determine optimal design by adjusting feature dimensions.



INPUTS:

- CAD (up to 10-part asm), materials, fasteners (will be rigidly modeled)
- Parametric design variables (and their ranges) on a single part
- 1-3 static, thermal, or frequency loading scenarios
- Weight and performance targets

DELIVERABLES:

- Tabular results for all scenarios
- Optimization trend graphs
- Final optimized geometry

TOPOLOGICAL DESIGN OPTIMIZATION

Determine optimal topology against design requirements and constraints.



INPUTS:

- CAD (up to 10-part asm), materials, fasteners (will be rigidly modeled)
- Design space on a single part
- 1-3 loading scenarios
- Weight and performance targets
- Manufacturing process (casting, additive, extrusion, etc.)

DELIVERABLES:

- An optimized geometric shape (STL format) for your designers to adapt to your manufacturing process

FLUID DYNAMICS

ELECTRONICS COOLING EVALUATION

Evaluate effectiveness of cooling mechanisms for enclosed electronics.



INPUTS:

- CAD (up to 50-part asm), materials, fasteners (will be rigidly modeled)
- Operational conditions (heat power inputs, fan curves, environment)
- Thermal performance targets

DELIVERABLES:

- Steady state temperature distribution plots with location of maximum temperatures in key components
- Flow visualization plots
- Design improvement recommendations

FLUID DEVICE PERFORMANCE EVAL

Characterize performance of fluid handling device design.



INPUTS:

- CAD (up to 10-part asm), materials, fasteners (will be rigidly modeled)
- Operational conditions (inlet or exit mass/volume flow rate, pressure boundary conditions, fan curves)

DELIVERABLES:

- Steady-state flow field visualization plots of velocity and pressure distribution.
- Inlet and outlet parameters
- Pressure drop and stagnation zones
- Design improvement recommendations

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MANUFACTURABILITY

PLASTIC INJECTION FILL AND PACK

Evaluate manufacturability of plastic injection molded parts.



INPUTS:

- Solid model geometry
- Plastic material properties

DELIVERABLES:

- Assessment of ability to fill and pack the part
- Pressure and temperature at end of packing
- Weld line and sink mark locations
- Design recommendations to improve performance

ADD-ONS:

- Multiple cavity or family mold evaluation

PLASTIC INJECTION FILL, PACK, AND WARP

Evaluate manufacturability and final shape of plastic injection molded parts.



INPUTS:

- Solid model geometry
- Plastic material properties
- Cooling line locations and fluid properties

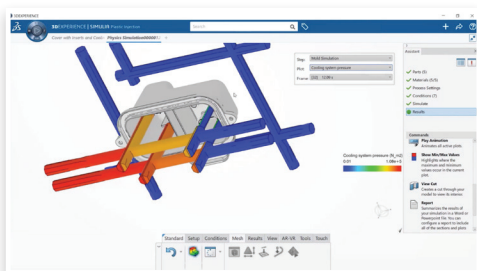
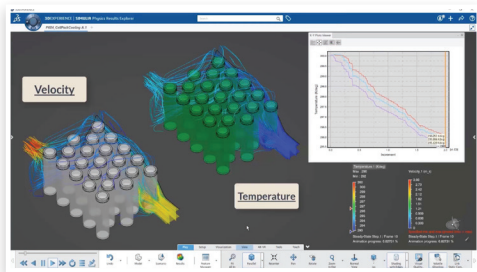
DELIVERABLES:

- Assessment of ability to fill and pack the part
- Pressure and temperature at end of packing
- Weld line and sink mark locations
- Final part warpage
- Design recommendations to improve performance

ADD-ONS:

- Multiple cavity or family mold evaluation
- Evaluation of alternate cooling channel arrangement

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GET STARTED TODAY

Better design feedback means higher revenue. Start a conversation with the GoEngineer Advanced Simulation Team today.

**For More Information
Contact your Account Manager**