NOVA CASTCAD

SMARTER SIMULATION FOR GEOMETRY OPTIMIZED CASTINGS

A NOVACAST SYSTEMS PRODUCT

NOVACAST

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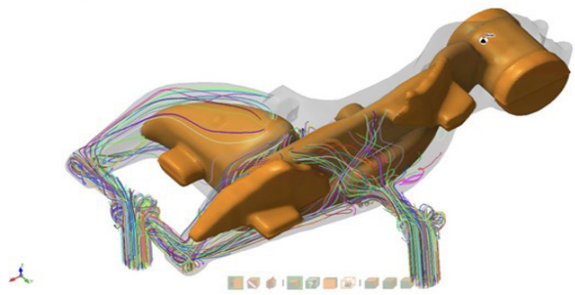
NovaCastCAD is a revolutionary casting-simulation tool that helps you work faster, optimize geometry for better solidification, and deliver high-quality castings from the start. With GPU-accelerated speed, smart automation, and powerful design tools, you reduce lead times, avoid trial-and-error, and make smarter decisions with greater confidence.

NovaCastCAD (short for Casting Computer Advanced Design) combines high-performance simulation with an intuitive workflow that improves every step of the casting process. It goes beyond traditional mold filling and solidification analysis by offering intelligent geometry optimization, automated feeding-path generation, and advanced shell-mould handling — especially for low-pressure die casting.

Whether you work with gravity sand casting, gravity die casting, or LPDC, it helps you achieve directional solidification with minimal manual effort. Geometry can even be adjusted mid-simulation, enabling rapid iteration and easy adaptation to new design requirements. High-speed solvers running on both CPU and GPU make it ideal for everything from quick prototypes to high-volume production, while automation and flexible architecture cut time, boost quality, and support more sustainable workflows.

FLOW VISUALIZATION IN A COMPLEX GRAVITY CASTING WITH OPTIMIZED FILLING PATHS.



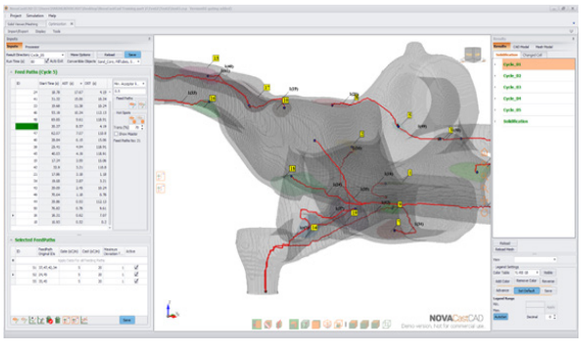
Key Features and Advantages

The software is engineered for speed, accuracy, and design freedom. High-performance solvers exploit both CPU and GPU power, delivering run-times far below those of traditional tools. Smart automation simplifies setup and shortens the path to an optimized casting.

A finite-difference mesh (FDM) with local and adaptive resolution gives the right balance between precision and speed. Mold components can be generated automatically, and detailed coating-map simulation supports better process control.

Real-time interaction lets teams explore results instantly and share 3-D data with colleagues or clients, accelerating collaboration and decision-making.

CYCLE ANALYZIS AND AUTOMATIC FEEDING-PATH DETECTION FOR THERMAL OPTIMIZATION.



Industry Applications

NovaCastCAD is ideal for casting engineers, product designers, and foundries aiming to shorten development cycles, reduce defects, and raise quality. It supports processes ranging from low-pressure die casting to gravity die and sand casting, making it well suited for industrial applications that demand precision, efficiency, and simulation speed.

Geometry Optimisations

A standout capability is automatic detection of isolated zones and optimisation of directional solidification. The software intelligently refines the mesh where thermal gradients demand it, improves feeding efficiency, and prevents shrinkage—giving engineers reliable, high-quality castings with minimal rework.

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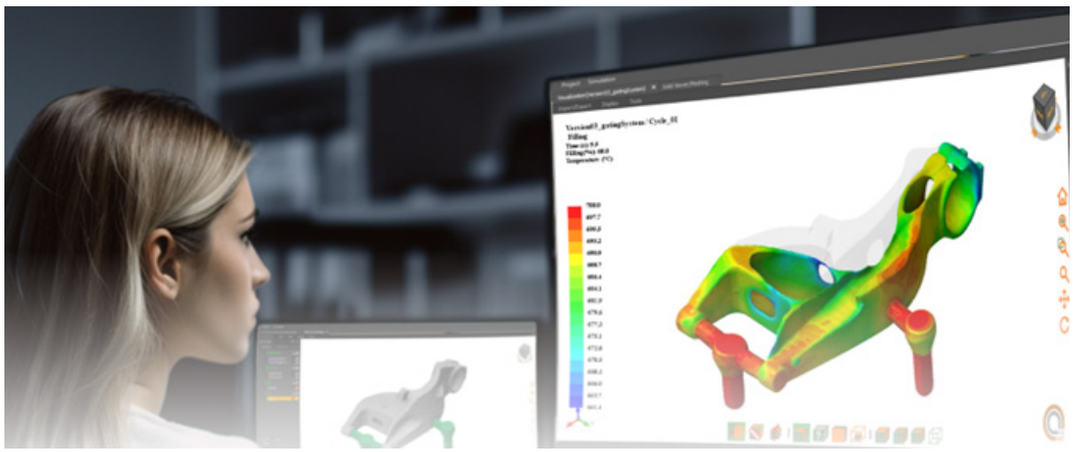

Technical Requirements

- Operating system: Windows 10 or 11 (64-bit)
- RAM: 16 GB or more recommended
- Storage: 500 GB SSD or larger
- GPU: Optional – NVIDIA RTX 3070 or higher recommended
- CPU: Intel Core i7 or better
- Supports multi-core CPU and GPU acceleration

A Smarter way to Cast

NovaCastCAD helps you cut scrap, improve yield, and accelerate development without sacrificing accuracy. Whether you're designing new castings or optimizing existing ones, it gives you the power to get it right the first time — and to bring smarter castings to life.


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