CastCAD Sand Casting Module 2025

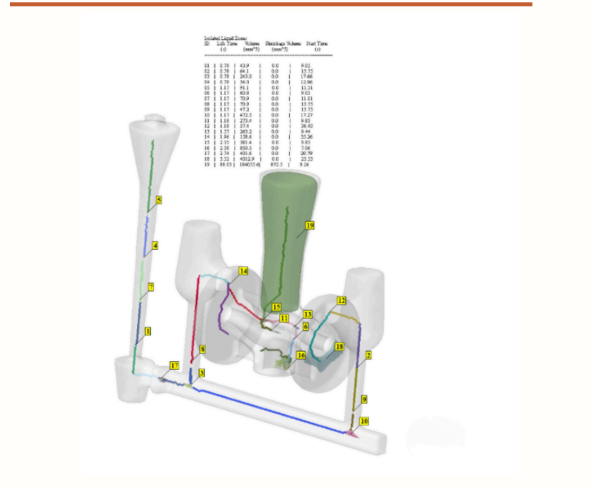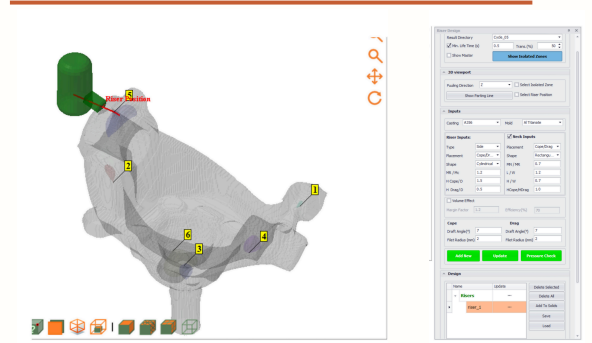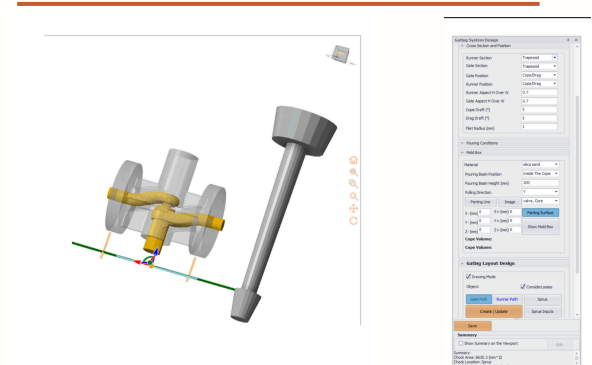## NEW KEY FEATURES:

1. GRAPHICAL GATING SYSTEM DESIGN TOOL

This tool enableengineers to design gating systems visually using method engineering principles. By providing a graphical interface, it simplifies the layout of sprues, runners, and ingates, ensuring optimal metal flow and minimizing turbulence. Engineers can quickly test different gating strategies, improving casting quality and reducing trial-and-error in production.

2. Graphical Riser design Tool

Based on detected hot spots, this tool helps engineers design risers in optimum place. The graphical interface makes it easy to place and size risers to ensure proper feeding during solidification. This reduces shrinkage defects and improves yield, giving factory engineers a practical way to optimize riser design without complex calculations

3- HOT SPOT DETECTION & FEED PATH ANALYSIS

Solidification behavior is critical in casting quality. This feature automatically identifies hot spots (areas that solidify last and are prone to shrinkage defects) and maps feed paths, which show how liquid metal flows to compensate for solidification shrinkage. By analyzing these two key inputs, engineers gain clear insight into potential defect zones and feeding efficiency. The software helps optimize riser placement, gating design, and overall casting geometry

We provide the tools to not just identify problems, but to fix them FASTER

4- MESH EDITING TOOL

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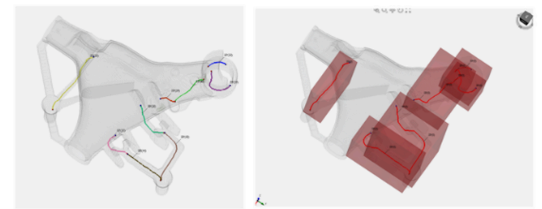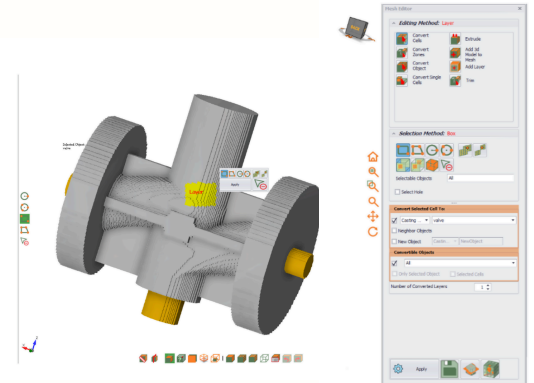
5- Mold Design Concept Tool

The **CastCAD** Mold Design concept module empowers simulation engineers to efficiently create mold mesh objects within **CastCAD**, eliminating the need to import external CAD models. Traditionally, mold creation involves multiple iterations, substantial coordination between simulation and CAD engineers, and communication-related delays. By utilizing the Mold Design concept module, engineers can independently define and modify mold structures, streamlining the process and significantly reducing errors.

Run cycle 2 and export local models Boundary condition
Make local model for main feedpaths

6- CPU AND GPU HYBRID COMPUTATION

This feature leverages the combined power of **CPU** and **GPU** to significantly speed up casting simulations. **GPU** handles highly parallel calculations such as heat transfer and fluid flow. By distributing workloads according to hardware strengths, the software achieves faster computation without sacrificing accuracy.

7- OPTIMIZATION MODULE

The module provides users with two distinct methods for simulating molten metal pouring in sand casting: Lip Pouringand Bottom Pouring. The implementation is based on fundamental fluid dynamics principles and provides users with valuable insights into the pouring process, including filling time, flow rates, and potential quality issues.

Innovative approach to improve SandCasting simulation speed

• Activate optimization program Run program cycle 2 after filling and calculate the feed paths
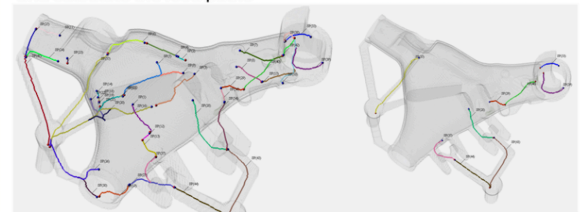
Select The Main feeding Ptahs and check The Lifetime of The hot spots.