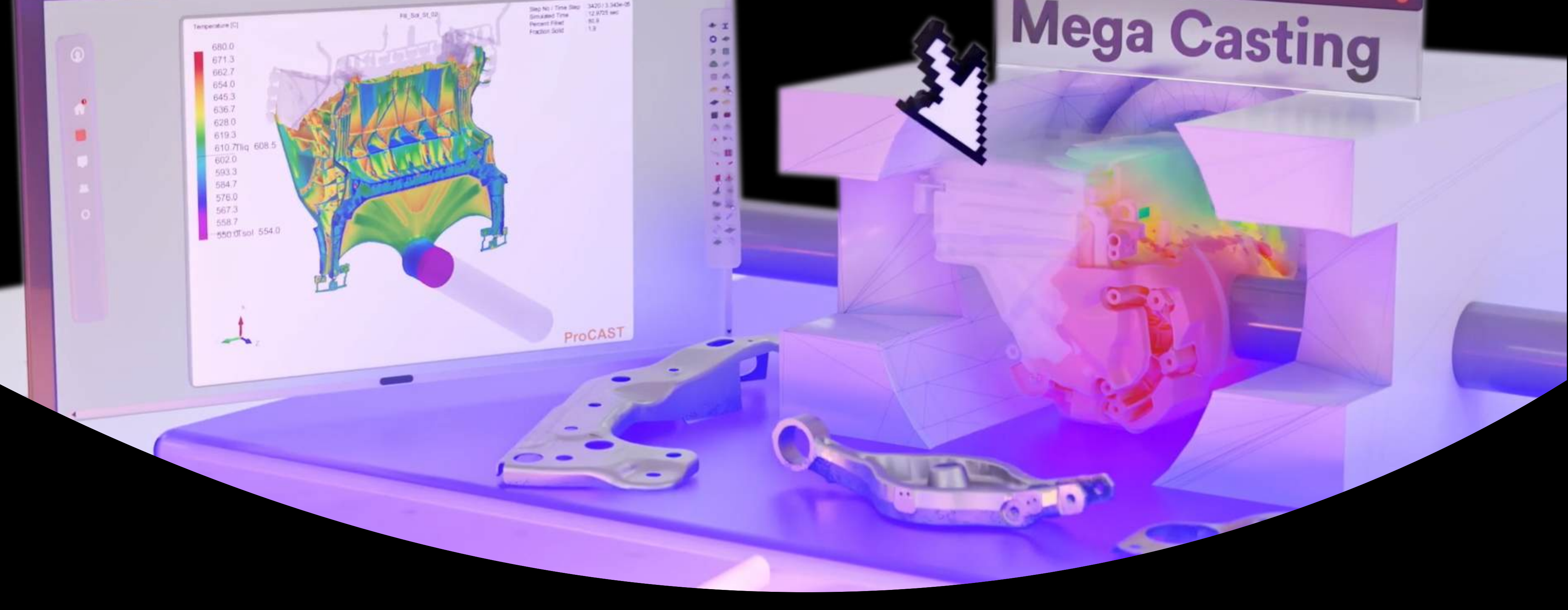


Master the Latest Trends in Car Manufacturing with Mega Casting Simulation

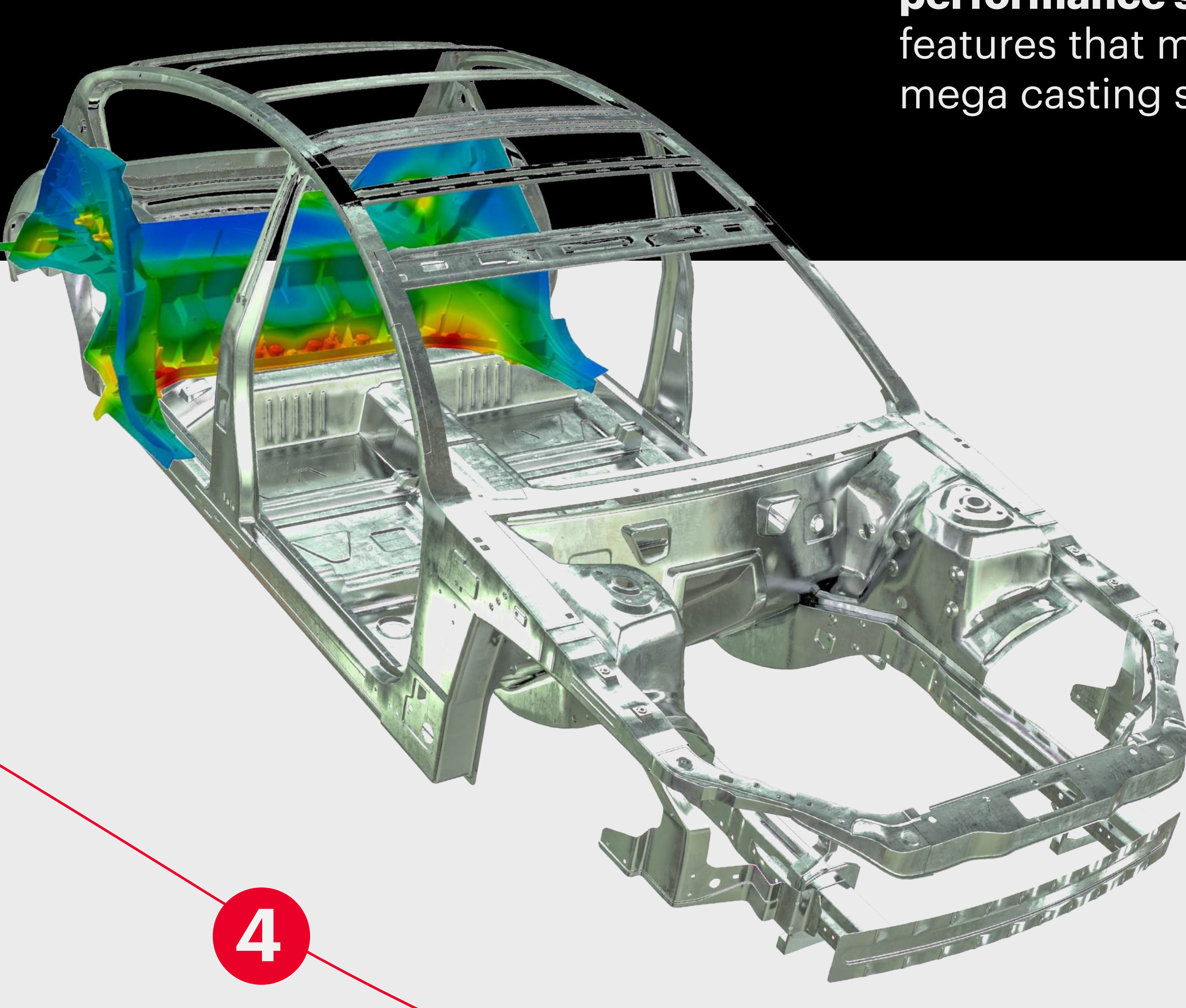
Top Benefits of Using ProCAST for Your Mega Casting Manufacturing Process



Achieving **efficient die design** is a challenge that requires a powerful, predictive **casting simulation software**.

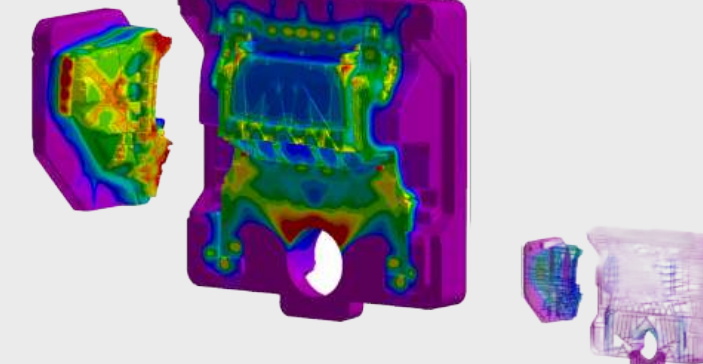
ProCAST is the solution

Expertly handling **large models** and **every phase of the casting process**—from die heating and filling to solidification and ejection—while ensuring a **perfect match to performance standards**. Here are the features that make it the right tool for your mega casting simulation.



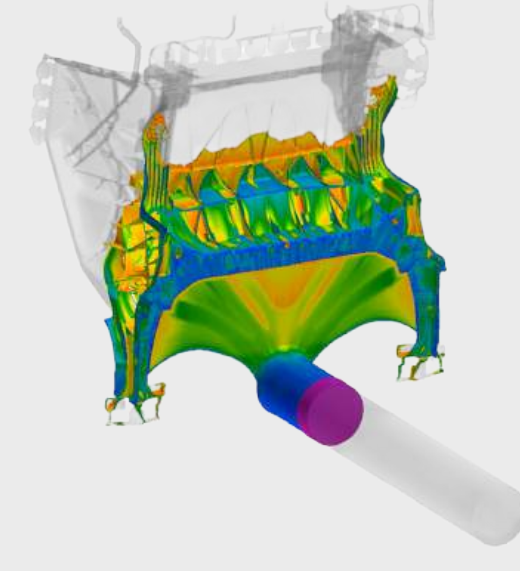
1 Large Model Handling

Conveniently **manage even the most complex models**, including casting, die, vents, gating systems, shot sleeves, pistons, cooling channels, ejector pins, and more.



2 Proven Multi-physics Solver

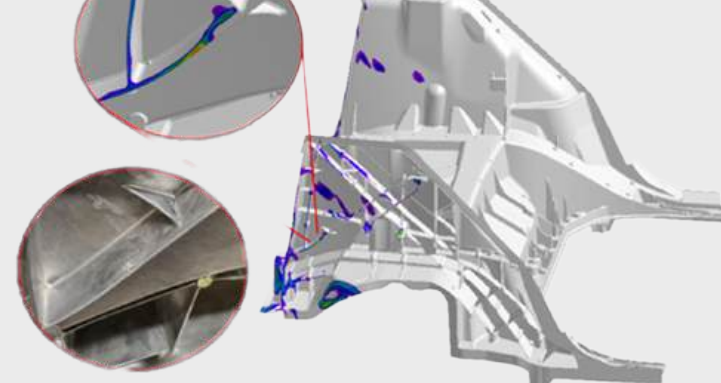
By leveraging **35+ years** of industrially proven multi-physics solvers, ProCAST delivers highly accurate predictions of key casting phenomena throughout the entire process, from dosing and filling to solidification, ejection, and quenching with **end-to-end process modeling**.



3

Accurate Gas-Fluid Interaction Modeling

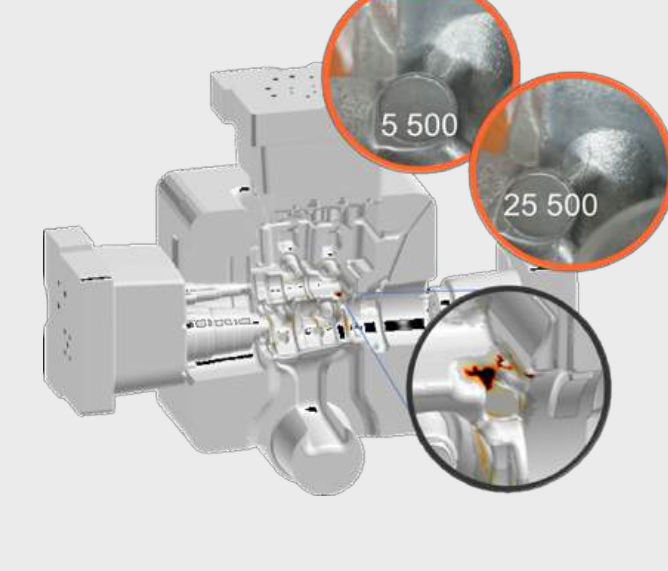
ProCAST features an integrated **two-phase flow solver** that accurately models gas-fluid interactions, providing reliable predictions of local air back-pressure. This capability is essential for optimizing cavity filling patterns, especially in cases where venting design may not be ideal.



4

Predict Die Fatigue Life With Confidence

The accurate **finite element stress solver** evaluates both casting distortions and die fatigue life, crucial for minimizing the high costs of die manufacturing and maintenance.



5

Highly Scalable Multi-physics Solver

Achieve **minimal turnaround times** with the highly scalable multi-physics solver, supporting **up to 32 cores** and **customizable** to handle flow, thermal, and stress simulations either together or separately as required.

6 Accurate Deformation Forecasting

The **finite element (FE) foundation** makes ProCAST the best stress simulation software for castings and dies, providing accurate **residual stress** and **distortion predictions**, and **die fatigue life assessments**.

6

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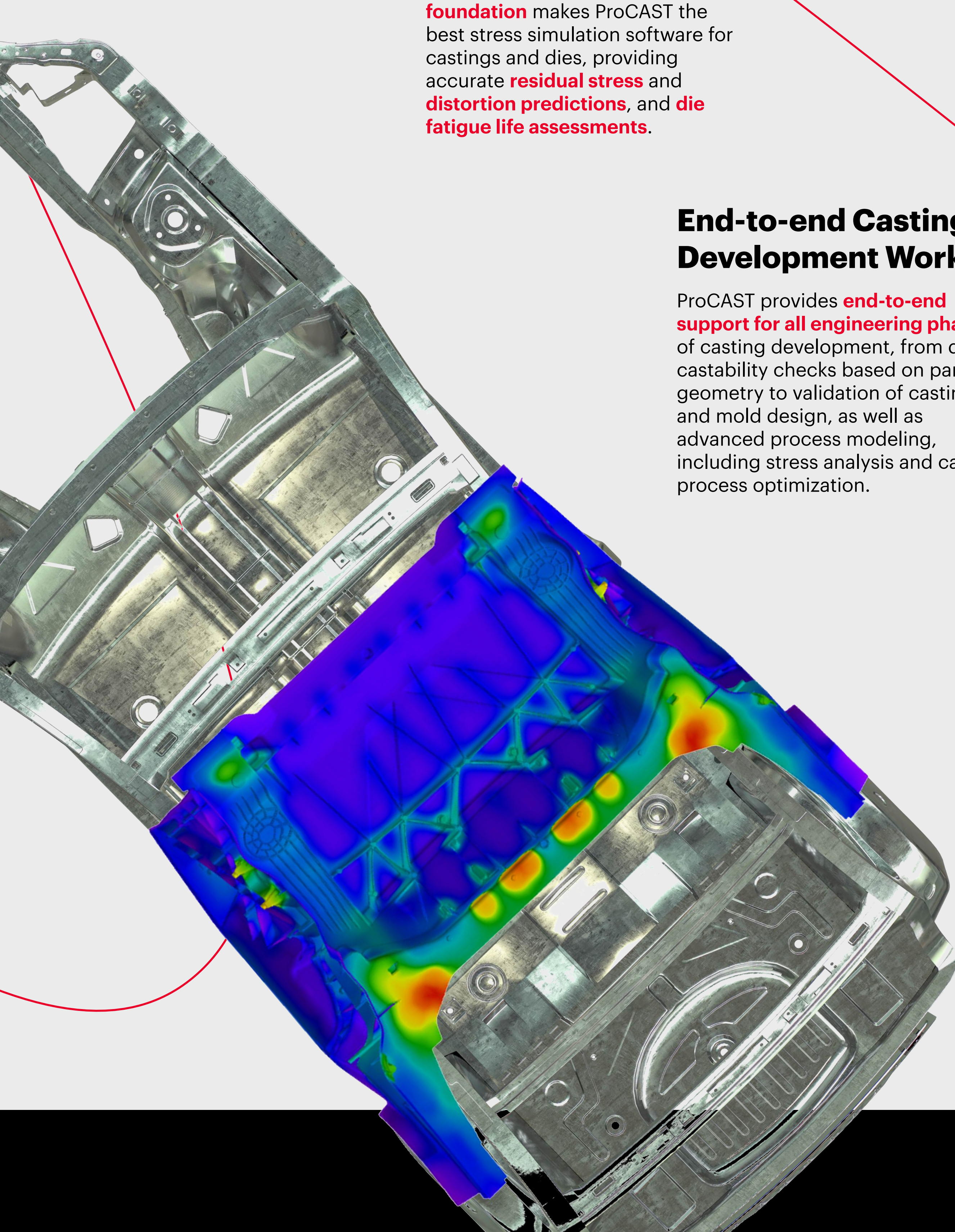
End-to-end Casting Development Workflow

ProCAST provides **end-to-end support for all engineering phases** of casting development, including **castability checks** based on part geometry to validation of casting and mold design, as well as advanced process modeling, including stress analysis and casting process optimization.

8

Seamless Chaining with Performance Simulation

ProCAST's **shared finite element foundation of the stress solver** with ESI's structural and crash simulation software VPS enables **seamless integration of casting effects into structural and crash simulations**, ensuring material property variations from the casting process are accurately reflected in further analyses.



Achieve the highest predictive confidence, minimize physical try out costs and time, while guaranteeing the required part quality from the very beginning.

Discover ProCAST

9

Effective Single Model Approach

Thanks to the integrated FE flow and stress solver, ProCAST uses a single model approach to **model the entire high pressure die casting process in a single environment**, eliminating the need to use different solutions for the analysis of filling, solidification, ejection and distortion.

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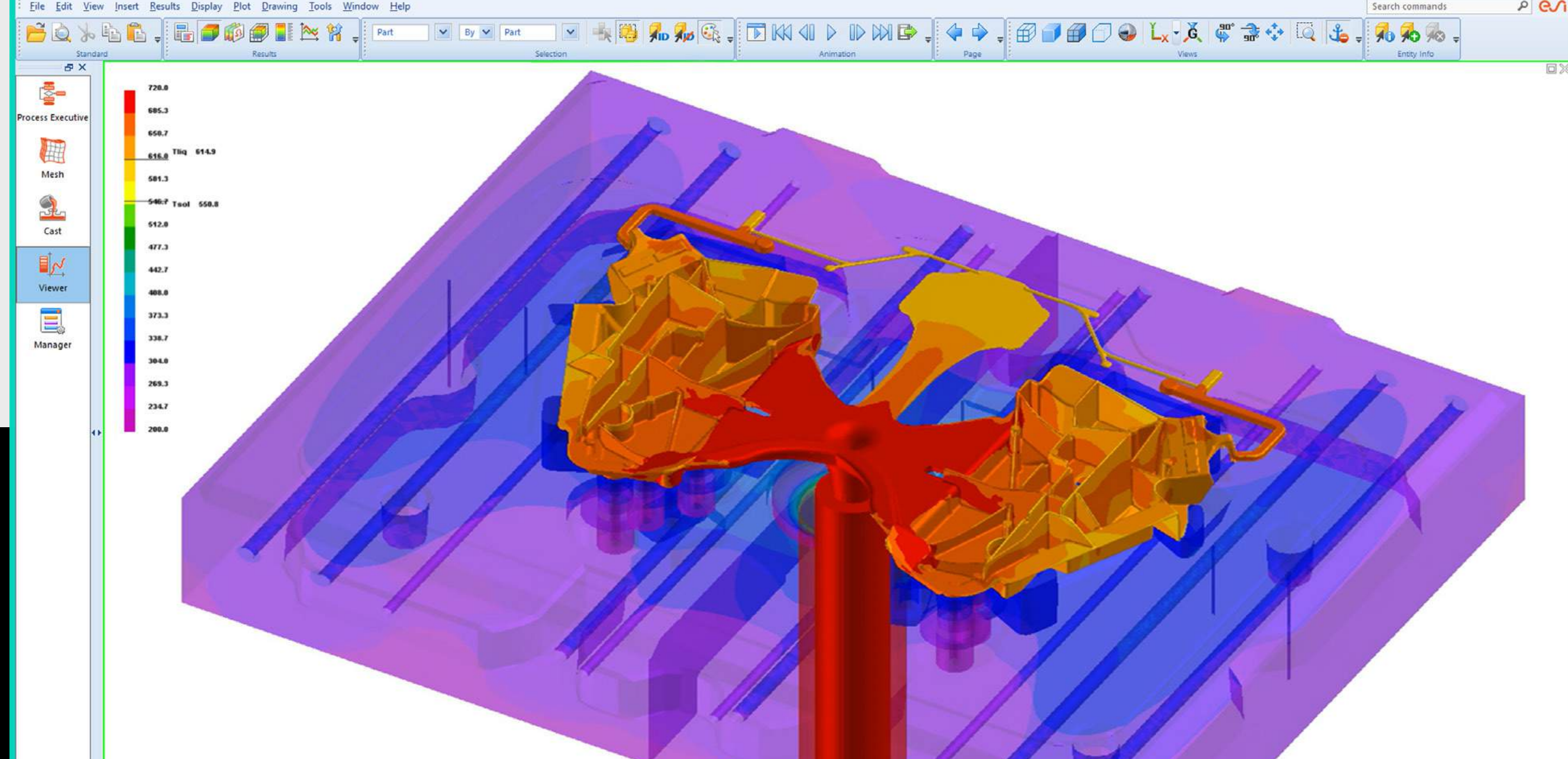
Extensive Material Database

ProCAST features a **comprehensive material database**, including aluminum and magnesium alloys, and integrates the **COMPUTHERM thermodynamic database** to automatically provide all required material data based on the alloy's chemical composition.

11

Real-Time Piston Control

The **integrated die casting machine database** allows easy linking of piston movement to machine characteristics, ensuring accurate filling patterns crucial for predicting filling defects and flow speeds.



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