

FLUID DYNAMICS ENGINEER

Perform fluid flow and conjugate heat transfer simulations to accelerate smarter design decisions

Design. Simulate. Optimize. All in one environment.

With the Fluid Dynamics Engineer, designers and engineers can assess product behavior for every design iteration, improving performance, reducing development time, and minimizing cost. Using CAD-embedded CFD and an industry-standard RANS-based finite volume solver, users can explore hundreds of design variations while optimizing for:



Flow distribution

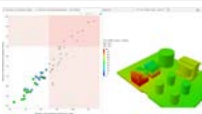


Thermal management



Pressure losses

Role key applications to simplify and accelerate flow simulation

	KEY APPLICATIONS	CHALLENGE	SOLUTION
	Geometry Idealization Essentials	Preparing complex CAD for simulation is time-consuming and error-prone	Quickly simplify geometry and extract flow volumes with powerful and easy-to-use commands
	Fluid Scenario Creation	Defining operating conditions and creating a high-quality mesh requires expertise	Benefit from automated meshing and a guided workflow to define material properties and boundary conditions
	Physics Results Explorer	Extracting meaningful insights from vast simulation data can be difficult	Intuitively visualize results, extract key performance indicators (KPIs), and generate reports
	Parametric Design Study	Manually evaluating multiple design alternatives is slow and resource-intensive	Seamlessly automate the evaluation of design variants to quickly identify the optimal solution that meets requirements

Role key capabilities for an end-to-end fluid simulation

INTEGRATION & AUTOMATION	FLOW PHYSICS	THERMAL MODELING & MORE	PERFORMANCE & SCALABILITY
Seamless connectivity with SOLIDWORKS and CATIA	Steady/transient	Conjugate heat transfer	Fast, scalable solver
Third-party CAD support	Laminar/turbulent	Solar & surface-to-surface radiation	Includes 16 cores for compute
Automatic updates with model changes	Incompressible and compressible flows	Porous media, rotating geometry	Access to 3DEXPERIENCE ® Cloud for more computing power
Design improvement studies	Internal and external flows	Multiphase (VOF), species, and particle tracking	Share ideas and insights in real-time

Don't let disconnected tools limit what integrated multiphysics can unlock. Choose a unified simulation strategy, bringing FEA, electromagnetics, and fluid dynamics together on the **3DEXPERIENCE**® platform for stronger governance, faster decisions, and true collaboration.

Getting Started with SIMULIA Fluid Dynamics Engineer



Run linear/nonlinear FEA, electromagnetics, and fluid simulation together on one **3DEXPERIENCE** platform.



Launch and scale fluid simulations instantly with elastic compute and secure cloud deployment.



Connect modeling and simulation in a single loop, no exports, real-time updates, faster decisions.



Use the SIMULIA token-based licensing ULM for scalable, simple, and cost-efficient access.

Unified physics. Unified tools. Unmatched results.

Learn how SIMULIA transforms your engineering workflows.

Dassault Systèmes is a catalyst for human progress. Since 1981, the company has pioneered virtual worlds to improve real life for consumers, patients and citizens.

With Dassault Systèmes' **3DEXPERIENCE** platform, 370,000 customers of all sizes, in all industries, can collaborate, imagine and create sustainable innovations that drive meaningful impact.

For more information, visit: www.3ds.com

**Virtual Worlds
for Real Life**

