

FloEFD for Aerospace Systems Design

MECHANICAL ANALYSIS
Engineering Fluid Dynamics



FloEFD (Engineering Fluid Dynamics) is a different breed of Computational Fluid Dynamics (CFD) software that is fully embedded within your mechanical design software enabling you to simulate fluid flow and heat transfer using 3D CAD models directly, with no need for data translations or copies.

FloEFD is used by many aerospace industry suppliers worldwide to understand and optimize fluid flow, pressure drop and heat transfer in applications such as:

- Engine intake, bypass and exhaust systems
- Air ducts, manifolds, filters, valves, nozzles and pumps
- Hydraulic systems of all kinds
- Fuel systems and tanks (including cryogenic cooling, fuel storage and fuel cells)
- Cooling systems for electronics
- Heat exchangers and heat sinks
- Fuel and air filtration systems
- Cabin/cockpit ventilation and thermal management for passenger comfort
- Environmental control systems
- Anti-icing systems

- Emission control and noise-reduction systems

- Aerodynamics and heat transfer in and around missiles and rockets
- Film cooling and kinetic heating effects
- Braking and thrust-reversal systems
- Aerodynamics of whole aircraft or components such as wing/fuselage pods, engine nacelles and thrust chambers, external antennas and windshield wipers
- Subsonic and supersonic flows

From CAD to Analysis Effortlessly

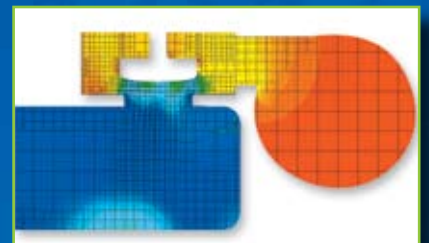
Unlike other CFD tools, FloEFD was developed for engineers by engineers, so it works the way you do. Combined with your preferred MCAD software, FloEFD puts a powerful simulation tool on your desk. Now you can create a new concept design with CAD and use the same geometry immediately to:

- Understand and improve product performance and reliability
- Test without building a physical prototype
- Fix potential problems before they become actual problems

Customer Testimonial

"We had complete confidence in the simulation results because FloEFD had provided such an accurate simulation of the original design. Without CFD, this knowledge would have been hard won."

R. Preble, Project Engineer
Shaw Aero Devices



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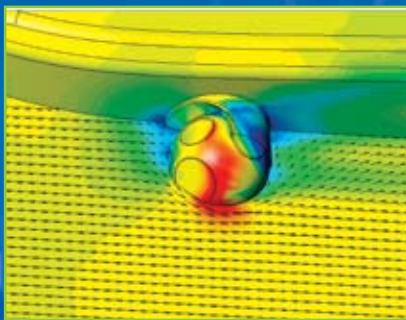
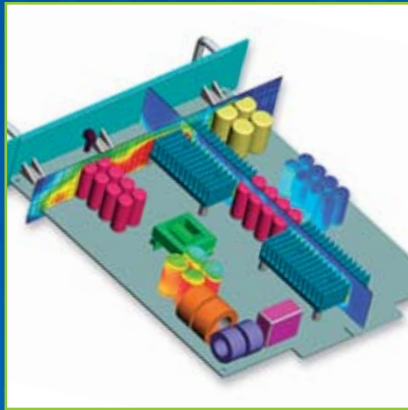
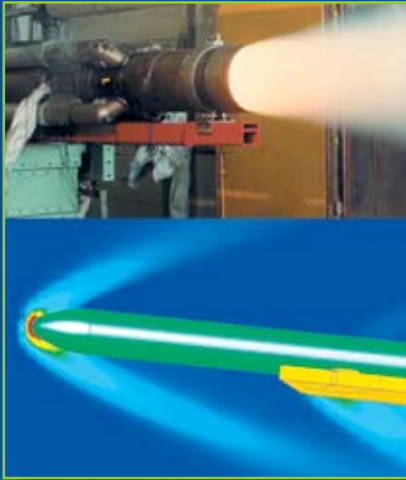
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“What-if?” Testing Made Easy

One of the most powerful features of FloEFD is the ease with which you can conduct “what-if?” analyses. FloEFD makes it simple to clone/modify your models and analyze design variations.

The process is very simple. Create your base model and analyze it. Then create multiple variations of your design by modifying the solid model without having to reapply boundary conditions, material properties etc. When the analysis is complete, FloEFD makes it easy to compare the results among the many options to choose your best possible design.

When you are satisfied with your design, publish your report at a touch of a button. You can even publish a fully interactive 3D dynamic plot and share it with colleagues or customers.

In short, FloEFD solves your aerospace design problems and reduces your prototyping costs without requiring you to become an analysis specialist.

Aerospace Manufacturers and Suppliers Around the World Depend on Mentor Graphics’ Mechanical Analysis Division for Design Optimization

Accurate Automation Corporation
ACS Defense
Aerocomp Aerospace Ltd.
American Champion Aircraft Corp.
American Science & Engineering
Ametek Aerospace Products
Aerospace Structural Research Corp
ATK Missile Systems Company LLC
Bayern-Chemie
Bell Helicopter Textron
CR Flight Systems
Dassault Falcon Jet Corp.
Denel Optronics
ECE Zodiac Group
Fachhochschule Trier
Fuji Heavy Industries
Hamilton Sundstrand
KGS Electronics

Lockheed Martin Corporation
Lufthansa Technik AG
NASA Ames Research Center
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