OBJECTIVE
SOLIDWORKS® Flow Simulation is a powerful Computational Fluid Dynamics (CFD) solution fully embedded within SOLIDWORKS. It enables designers and engineers to quickly and easily simulate the effect of fluid flow, heat transfer and fluid forces that are critical to the success of their designs.

OVERVIEW
SOLIDWORKS Flow Simulation enables designers to simulate liquid and gas flow in real-world conditions, run “what if” scenarios and efficiently analyze the effects of fluid flow, heat transfer and related forces on or through components. Design variations can quickly be compared to make better decisions, resulting in products with superior performance.

SOLIDWORKS Flow Simulation offers two flow modules that encompass industry specific tools, practices and simulation methodologies—a Heating, Ventilation and Air Conditioning (HVAC) module and an Electronic Cooling module. These modules are add-ons to a SOLIDWORKS Flow Simulation license.

BENEFITS
- Evaluates product performance while changing multiple variables at a rapid pace.
- Reduces time-to-market by quickly determining optimal design solutions and reducing physical prototypes.
- Enables better cost control through reduced rework and higher quality.
- Delivers more accurate proposals.

CAPABILITIES
SOLIDWORKS Flow Simulation
SOLIDWORKS Flow Simulation is a general-purpose fluid flow and heat transfer simulation tool integrated with SOLIDWORKS 3D CAD. Capable of simulating both low-speed and supersonic flows, this powerful 3D design simulation tool enables true concurrent engineering and brings the critical impact of fluid flow analysis and heat transfer into the hands of every designer. In addition to SOLIDWORKS Flow Simulation, designers can simulate the effects of fans and rotating components on the fluid flow and well as component heating and cooling.

HVAC Module
This module offers dedicated simulation tools for HVAC designers and engineers who need to simulate advanced radiation phenomena. It enables engineers to tackle the tough challenges of designing efficient cooling systems, lighting systems or contaminant dispersion systems.

Electronic Cooling Module
This module includes dedicated simulation tools for thermal management studies. It is ideal for companies facing thermal challenges with their products and companies that require very accurate thermal analysis of their PCB and enclosure designs.

SOLIDWORKS Flow Simulation can be used to:
- Dimension air conditioning and heating ducts with confidence, taking into account materials, isolation and thermal comfort.
- Investigate and visualize airflow to optimize systems and air distribution.
- Test products in an environment that is as realistic as possible.
- Produce Predicted Mean Vote (PMV) and Predicted Percent Dissatisfied (PPD) HVAC results for supplying schools and government institutes.
- Design better incubators by keeping specific comfort levels for the infant and simulating where support equipment should be placed.
- Design better air conditioning installation kits for medical customers.
- Simulate electronic cooling for LED lighting.
- Validate and optimize designs using a multi-parametric Department of Energy (DOE) method.
Our 3DEXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes’ collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 220,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.