Helping you make great products
Autodesk Solution for Digital Prototyping
“Autodesk supports a comprehensive set of offerings and a broad strategy in simulation that indeed meets the needs of companies seeking to embrace digital product development.”

Breaking Down the Barriers to Simulation: Autodesk Broadens Simulation Offerings, CIMdata, March 2012
Autodesk Simulation Portfolio
Investment in Simulation

$400M Simulation Investment

Today

2005

Note: Graphic reflects both technology and company acquisitions, ownership of parent company is not implied
Simulation early and often
Right tool, right time, right user
Challenges in plastics

- Complex manufacturing process
- Time to market is critical
- Part defects discovered in manufacturing cost time and money
- Production and shipping delays affect future innovation
- Thousands of material candidates—which one is right?
- Geographically distributed development teams
Autodesk Simulation Moldflow Adviser

- Intuitive, wizard-based plastic injection molding simulation tools for use on digital prototypes
- Validate part designs
- Optimize mold designs
- Guided results to improve manufacturability
- Reduce cycle times
- Communicate potential manufacturing defects
- Includes Autodesk Simulation DFM
Autodesk Simulation Moldflow Insight

- Complete set of plastic injection molding simulation tools for use on digital prototypes
- Predict and correct part defects
- Simulates the most advanced molding processes
- Provides the highest degree of confidence in simulation results, for even the most complex geometry
- World’s largest material database for plastics simulation
Focus on a design’s manufacturability to drive optimization of part and mold designs
Ensure that molds “work right the first time”
Spend less time troubleshooting and more time innovating
Create fewer physical prototypes
Get to market faster
Multi-CAD and multi-CAE with data management

CAD in
- Autodesk®
- Siemens®
- CATIA®
- PTC®
- DS SolidWorks®

CAE out
- Autodesk Simulation Mechanical
- DS Simulia®
- MSC Software®
- Altair®
Part design validation

- Evaluate design
  - Thickness uniformity
  - Draft angles
  - Undercuts
- Assess manufacturability
  - Fill confidence
  - Resin selection
- Address visual defects
  - Weld lines
  - Air traps
  - Sink marks
Simulation technology

Analyze virtually any part geometry imaginable and get the best combination of simulation accuracy and solution time.

Features
- True 3D mesh and solver technology
- Patented Dual Domain™ technology
- Midplane
Plastic flow simulation

Simulate the flow of melted plastic to help optimize part and mold designs, reduce potential part defects, and improve the molding process.

Features
- Filling and packing analysis
- Molding window analysis
- Design of experiments
- Insert overmolding
- Two-shot sequential overmolding
Mold heating and cooling simulation

Improve cooling system efficiency, minimize part warpage, achieve smooth surfaces, and reduce cycle times

Features
- Cooling component modeling
- Cooling system analysis
- Rapid heat cycle molding
- Conformal cooling
Shrinkage and warpage simulation

Predict and control post-molding shrinkage and warpage and evaluate the structural integrity of the molded part

Features
- Shrinkage analysis
- Warpage analysis
- Core shift control
- Fiber orientation
Thermoset flow simulation

Evaluate the most commonly used thermoset molding processes

Features

- Reactive injection molding
- Microchip encapsulation
- Underfill encapsulation
- Wire sweep and paddle shift
Specialized molding processes

Simulate a wide range of plastic molding processes and state-of-the-art process applications

Features
- Gas-assisted injection molding
- Co-injection molding
- Injection-compression molding
- Birefringence
CAE data exchange

Use mechanical properties determined during simulations to enhance the accuracy of structural analyses

Features

- Autodesk® Moldflow® Structural Alliance
- Available with Autodesk® Simulation®, ANSYS®, and Abaqus®
Material database and environmental impact

Evaluate all your material options while considering environmental impact

Features
- Over 9,200 grades plastics
- Energy usage indicators
- Recyclability indicators
- Material quality indicators
Results interpretation and presentation

Easily share valuable simulation results with other members of the extended design team, helping to make critical design decisions

Features

- Automatic reporting tools
- Microsoft® Office
- Autodesk Moldflow Communicator
Defect visualization

See part defects and then correct by modifying the design, changing the manufacturing process, or applying surface finishes to the part.

Features
- Photorealistic visualization of defects powered by Autodesk® Showcase®
- Sink marks and warpage
Design advice

Find a quick path from problem to solution with results-specific design advice

Features
- Comprehensive help
- Results adviser
Cost estimation

- Estimate product costs
- Evaluate how changes to both materials and part and mold designs influence overall costs
Automation and customization

Streamline frequently used procedures and automate specialized workflows

Features
- Application programming interface
Autodesk Simulation Moldflow Adviser

Part of the Autodesk solution for Digital Prototyping

- Quickly and easily study plastic part designs for manufacturability
- Optimize injection mold designs
- Predict critical manufacturing parameters
- Reduce the number of physical prototypes
- Get more time for new product innovation
Autodesk Simulation Moldflow Insight

Part of the Autodesk solution for Digital Prototyping

- Optimize your part and mold designs, reduce the number of physical prototypes, and leave more time for new product innovation
- Predict and correct part defects
- Simulate the most advanced injection molding processes
- Analyze complex geometry with great accuracy
The SIM SQUAD is a team of world-class simulation experts at Autodesk whose mission is to share their wealth of simulation knowledge.

- Ask the SIM SQUAD your simulation questions
- Invite SIM SQUAD members to present at your events

http://simhub.autodesk.com/pages/simsquad
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