

# SOLIDWORKS SOLUTIONS

ENGINEERING AND DESIGN TOOLS  
TO DRIVE YOUR BUSINESS



**POWERFUL,  
YET SIMPLE  
SOLUTIONS TO  
HELP YOU GROW  
YOUR BUSINESS**

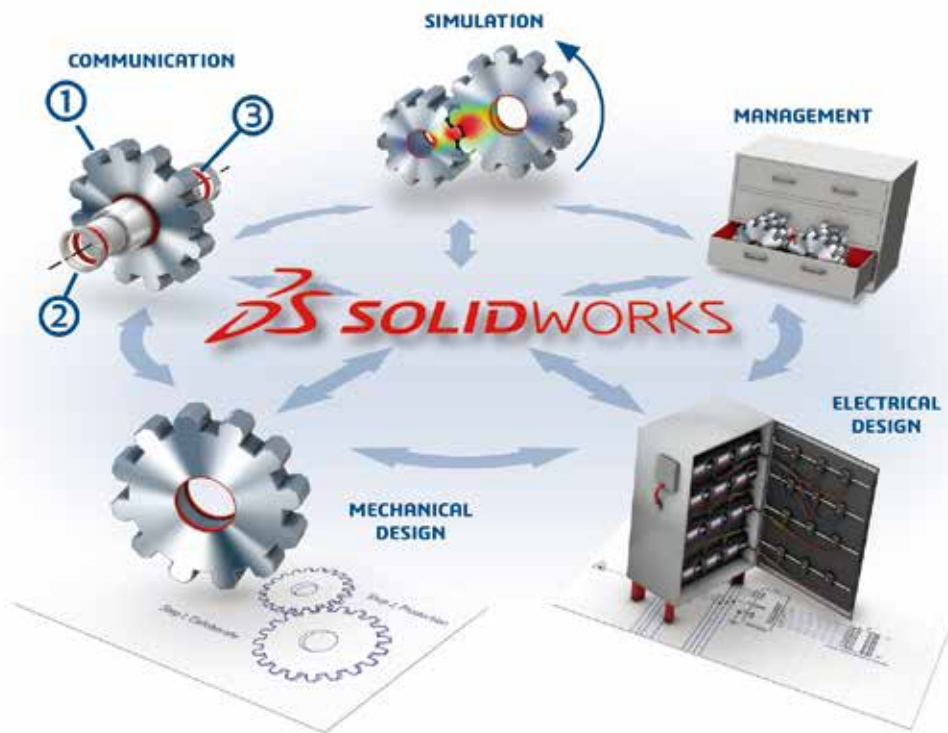
SOLIDWORKS® design solutions help designers, engineers, and manufacturers create and deliver great products. Our integrated, powerful yet easy-to-use solutions cover all aspects of your product development process with a seamless workflow that simplifies the development process for even the most complex designs. SOLIDWORKS helps you eliminate barriers to innovation so your team can work more efficiently, reduce development time and cost, and get the information you need at exactly the right time for making better design decisions.

## ENGINEERING AND DESIGN SOLUTIONS FOR ALL ASPECTS OF YOUR DEVELOPMENT PROCESS

SOLIDWORKS covers all aspects of your product development process from start to finish, with integrated design, simulation, technical communication, and data management. Product Engineers can perform multiple development tasks with ease, shortening their design cycle, increasing productivity, and delivering innovative products to market faster.

### The SOLIDWORKS suite of solutions covers:

- 3D mechanical design
- Embedded electrical schematic design and electromechanical design
- Simulation for analysis of structural, CFD, plastic injection molding, environmental, and motion parameters
- Data management for secure, efficient storage and search
- Technical communication applications and tools for creating dynamic graphical content, inspection documentation, and model-based 3D product and manufacturing information (PMI)

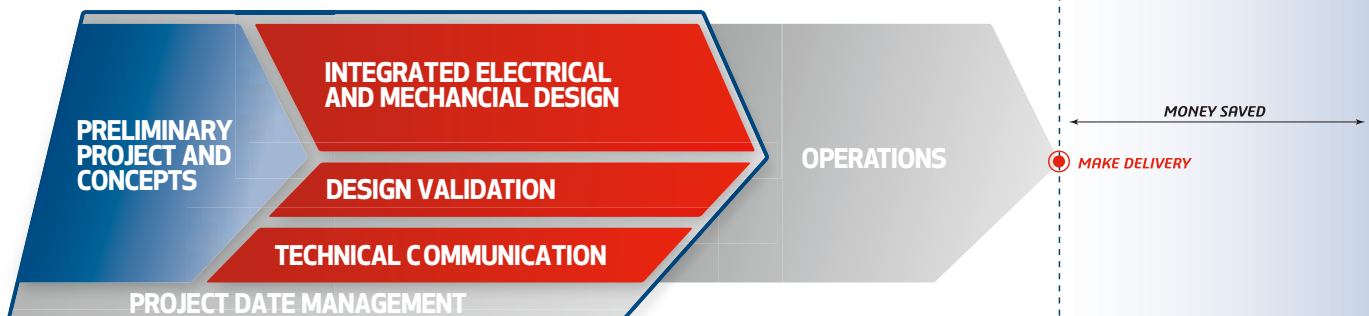


- Accelerate conceptual design and easily transition into design and production
- Verify product performance during design and reduce risk while you explore alternatives
- Manage and communicate design data efficiently with easy access to the latest data
- Close the gap between design and operations so Manufacturing builds it right the first time

### TYPICAL SERIAL PROCESS



### SOLIDWORKS PROPOSAL



**“SOLIDWORKS has allowed us to reduce design cycle times significantly, which saves time and money, while simultaneously improving quality.”**

— Mike Derus, Lead Engineer, THE OUTDOOR GROUP LLC



## DESIGN

### Inspiring innovation from concept through manufacturing

The SOLIDWORKS solution suite begins with design, from capturing and collaborating on concepts, to detailing parts and assemblies, through to manufacturing. Used by more than two million designers and engineers around the world, SOLIDWORKS helps drive smarter, faster product development. SOLIDWORKS conceptual design solutions help you capture and collaborate on mechanical and industrial concepts; with SOLIDWORKS mechanical design you can develop even the most complex designs more quickly; SOLIDWORKS assembly modeling enables you to represent and interact with any size assemblies in real time; while SOLIDWORKS 3D CAD gives you tools to create stylized, ergonomic products.

- Advance your ideas from concept to production using rich 3D models
- Part and assembly 3D modeling and 2D drawings
- Design reuse and automation
- Animations and photorealistic renderings
- Verify that your design can be produced before you go to manufacturing
- Design for manufacturability tools
- Manufacturing cost estimation
- Routed systems
- Share CAD data with others and easily collaborate on product designs
- Data exchange tools for both import and export of geometry to and from other systems
- Secure, private design communities to capture concept ideas, requirements, and feedback from colleagues, suppliers, and customers

## SIMULATION

### Advanced simulation that's powerful and easy to use for both engineers and specialists

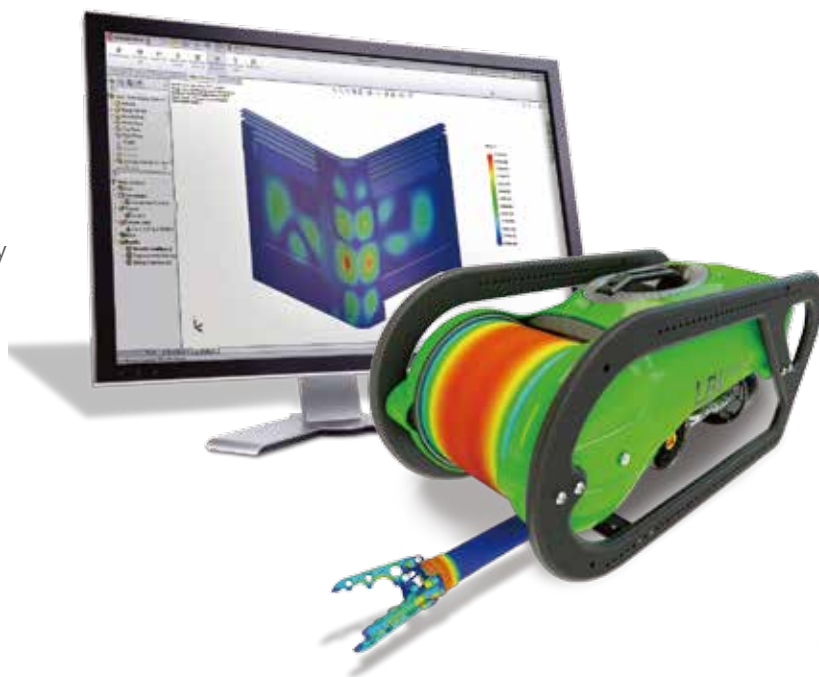
SOLIDWORKS Simulation helps product engineers ask—and answer—important and complex engineering questions throughout the design process. You can test your designs to ensure that product behavior will avoid failures, be reliable, and achieve design requirements, with analysis for:

- Structural – finite element analysis (FEA)
- Fluid flow and heat transfer – computational fluid dynamics (CFD)
- Plastics injection molding (PIM)
- Environmental impact
- Time-based motion

Powerful results visualization shows the structural forces affecting your design—displaying stresses, displacement, lifetime, and temperature. You can calculate measurements for any point, surface, or volume, and then graph and list results for all types of simulations.

Intuitive CFD simulation takes advantage of CAD integration, advanced geometry meshing, solution convergence, and automatic flow regime determination without sacrificing ease of use or accuracy. Product mechanical Engineers and CFD experts alike can predict flow fields, mixing processes, and heat transfer, and directly determine pressure drop, comfort parameters, fluid forces, and fluid structure interaction during design.

Now, every designer can answer the most complex “what if” questions, reduce the number of prototypes, ensure greater product accuracy, and get to market faster. Sophisticated and easy to use, SOLIDWORKS Simulation works seamlessly with SOLIDWORKS 3D CAD, so you can use it throughout the product design process.

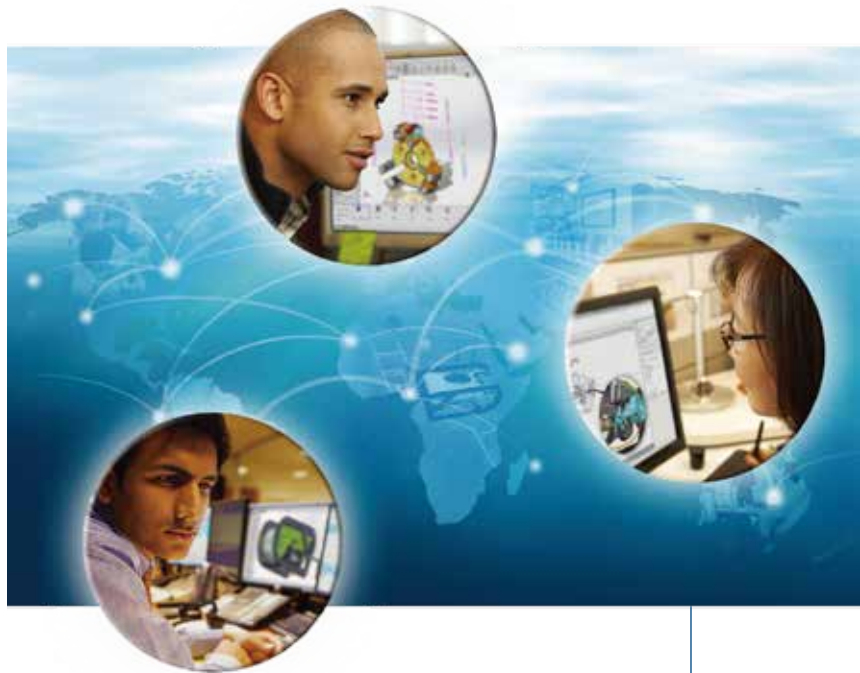


## DATA MANAGEMENT

### Take control of your data to enhance collaboration and innovation

SOLIDWORKS Enterprise Product Data Management (EPDM) enables designers and engineers across your organization to quickly and efficiently find, share, and reuse data, helping improve quality and collaboration. Enterprise-wide version control and integrated workflows help automate your design processes. Easy to implement, SOLIDWORKS EPDM can scale from small and mid-sized installations to hundreds of designers and engineers in distributed offices around the world.

- **Rapidly find and use data** – Ensure your team always has the right version, avoiding costly mistakes
- **Collaborate without boundaries** – Give your teams and partners quick access, even across continents and time zones, while maintaining version control
- **Access with mobile connectivity** – Browse folders, view file information and thumbnails, search, and change files from any device
- **Be productive fast** – Experience a fast learning curve and ease of use with an intuitive Windows® Explorer interface, personalized menus, and quick-access features that remove desktop clutter
- **Streamline processes** – Simplify administrative steps like approvals and sign-offs, and minimize administrative work, while maintaining accuracy and accountability



Communicate with co-workers, manufacturing, customers and your entire supply chain knowing your data is safe, secure and at the right revision level regardless of your location.

## TECHNICAL COMMUNICATION

### Add a new dimension to all the technical communication deliverables you need to produce

SOLIDWORKS Technical Communication applications help you improve the creation of customer technical documentation, sales materials and presentations, and documentation for inspection and manufacturing. You use your existing design data to produce your materials, helping you work faster and more efficiently.

For inspection tasks, SOLIDWORKS can automatically create inspection documents by leveraging existing 2D legacy data. Quality departments often require drawings with balloon callouts, reports for inspection, or additional deliverables for the inspection process. Designers, engineers, and quality inspectors are typically tasked with manually creating these documents. Now with SOLIDWORKS, this process is automated, improving productivity and accuracy.

SOLIDWORKS can communicate PMI directly in 3D, including 3D model data in industry-standard file formats (such as SOLIDWORKS files, eDrawings®, and 3D PDF). This information guides the manufacturing process, helping to streamline production, cut cycle time, reduce errors, and comply with industry standards. By removing time-consuming 2D processes, companies using model-based operation have reduced development costs by up to 50 percent, especially saving on rework, scrap, tooling, and fabrication.



SOLIDWORKS software offers the tools to start creating product communication—such as high-quality graphics, illustrations, and interactive 3D animations—early in the design process, keep it updated, and deliver it on time. The easy-to-use software enables companies, including nontechnical users, to leverage existing 3D CAD data to create dynamic product images and animations to help clearly present even the most complex data and designs.

**“SOLIDWORKS Electrical makes us more accurate and efficient in all facets of development — from design to collaboration to production.”**

— Ryan Helminen, Project Engineer, GLSV, Inc.

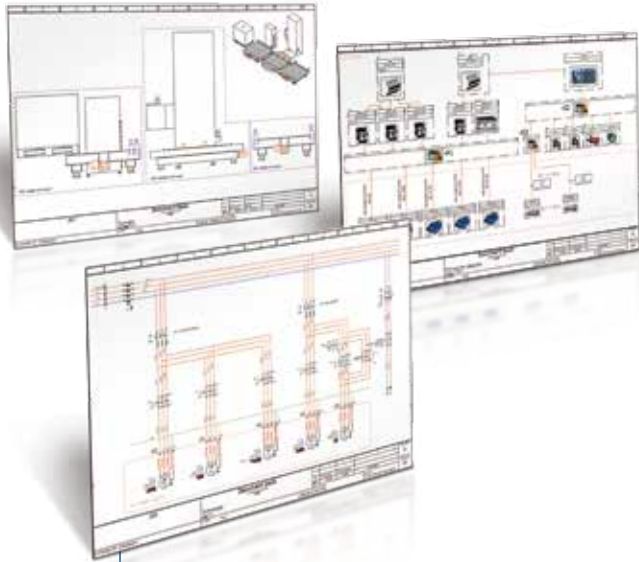
## **ELECTRICAL DESIGN**

### **Simplify electrical schematic creation and integrated electrical system design**

In electromechanical design, creating design elements and defining the electrical interconnect of wires, cables, and harnesses is often a laborious and error-prone process. SOLIDWORKS offers a range of intuitive electrical schematic and 3D design functionality to meet the needs of electrical engineers and help simplify your electrical schematic creation.

Bidirectional integration in real time between electrical and mechanical designs helps improve collaboration and productivity for fewer product delays, more consistent and standardized designs, lower costs, and faster time-to-market. Powerful, easy-to-use schematic design tools help drive rapid development, with built-in libraries of symbols, manufacturer part information, and 3D component models providing common, reusable materials that help optimize design reuse.

You can use advanced SOLIDWORKS routing technology to automatically interconnect electrical design elements within the 3D model. Then, determine optimal lengths for wires, cables, and harnesses, all while maintaining design and BOM synchronization between electrical and mechanical designs.



Create electromechanical projects quickly with powerful yet easy to use Electrical Schematic design tools.



Enhance your electromechanical design by integrating the electrical design into the 3D environment for complete and accurate Bill of Materials (BOM) including wires, cables, harnesses and electrical components.

## SOLIDWORKS ADVANTAGE

SOLIDWORKS products are easy to learn, easy to use, and work together to help you design products better, faster, and more cost-effectively. SOLIDWORKS Solutions help you maximize productivity and develop products through an integrated, concurrent workflow process to help simplify even the most complex project development, shorten your design time, and get to market faster.

## SOLIDWORKS COMMUNITY

The SOLIDWORKS Community is active, large, and growing, comprising more than two million users, over 180,000 organizations, more than 300 solution partners, and hundreds of value-added resellers worldwide. This community has an important voice in shaping SOLIDWORKS solutions, with their feedback driving our product enhancements and innovations, year after year.

Available tools like SOLIDWORKS eDrawings and DraftSight® simplify and expand your ability to share and collaborate on designs with colleagues and clients. MySolidWorks is your place for all things SOLIDWORKS to help support your success. You can log in to My.SolidWorks.com for a central technical reference resource, including access to 100+ hours of training materials, certification prep courses and tests, VAR technical content, and online file exchange.

## LEARN MORE

To learn more about SOLIDWORKS solutions, visit [www.solidworks.com](http://www.solidworks.com).



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