

DIGITAL INDUSTRIES SOFTWARE

Solid Edge

Providing a portfolio of affordable, easy-to-use software solutions for product development

solidedge.siemens.com



Disruption in product design and manufacturing



Many companies are using yesterday's processes to develop tomorrow's products – products that continue to increase in complexity. To turn complexity into operational excellence, Siemens Digital Industries Software believes that customers should embrace a comprehensive digital twin strategy. For small and medium-sized businesses (SMBs) especially, digitalization can provide a tremendous competitive advantage.

SMBs have become synonymous with innovation and market disruption but can lack the infrastructure to consistently bring products to market quickly. Digitalization provides the ability to connect people, devices and businesses to lower or remove that barrier. Since SMBs have the advantage of being agile, they can more easily leverage digital transformation to leapfrog the big incumbents. Today's startups and SMBs can be tomorrow's large enterprises.

Siemens Digital Industries Software empowers SMBs with solutions that address their unique needs. Delivering value, flexibility and choice, the Solid Edge® software portfolio can help shape future designs, with market-leading product development tools for mechanical and electrical design, simulation, manufacturing, technical publications, data management, cloud collaboration and more.

“Ninety two percent of SMBs are allocating budget for digital transformation.”

IDC, Digital Transformation in Product Design and Development: The Opportunity for SMB Manufacturers, 2022

Digital transformation technology



Image courtesy of Radio Bro

Selecting a technology platform that enables transformation is an important decision, one by which a company can live or die. As a leading provider of manufacturing and engineering solutions for more than 170 years, Siemens is well positioned to deliver the next-generation technologies you need.

Digital transformation integrates all parts of a business, allowing you to turn data into added value at all stages of the product and production lifecycle.

Solid Edge is part of the Siemens Xcelerator portfolio, the comprehensive and integrated portfolio of software and services from Siemens Digital Industries Software. It speeds digital transformation and is the catalyst for developing a fully digital enterprise. The comprehensive digital twin is at the center of digital transformation. By enabling manufacturers to create a digital representation of their products, Solid Edge is a key part of the Siemens Xcelerator portfolio for SMBs.

“Forty-eight and three-tenths percent of SMB manufacturers believe their efforts around digital transformation will be essential to their company’s survival in the next three to five years.”

IDC, Thriving in the Digital Economy, 2020

Next-generation product development for today's engineers

Synchronous Technology

The cornerstone of the Solid Edge portfolio is its market-leading computer-aided design (CAD) application. Developed from the ground up to be an open and extensible tool, Solid Edge with synchronous technology provides you with the freedom to easily design naturally and iteratively, whether you are working on a new design or editing existing parts, assemblies or products. That's because synchronous technology contains built-in intelligence that interprets design intent regardless of where the design originated.

Solid Edge with synchronous technology also enables seamless collaboration. In today's open, highly connected digital design environment, interoperability is no longer just a nice feature to have – it is essential. Siemens synchronous technology provides the common language for the next generation of product design.

Additional components at the core of Solid Edge include technologies such as generative design, convergent modeling, subdivision modeling and reverse engineering. Deeply embedded in Solid Edge, these robust features are reshaping the way products are developed.



“The ability to problem solve without constraints is magical.”

Dr. Ryan Spoering, Founder,
Lab Machinist Solutions

Solid Edge with synchronous technology will reshape the way you think about product design.

Reverse engineering

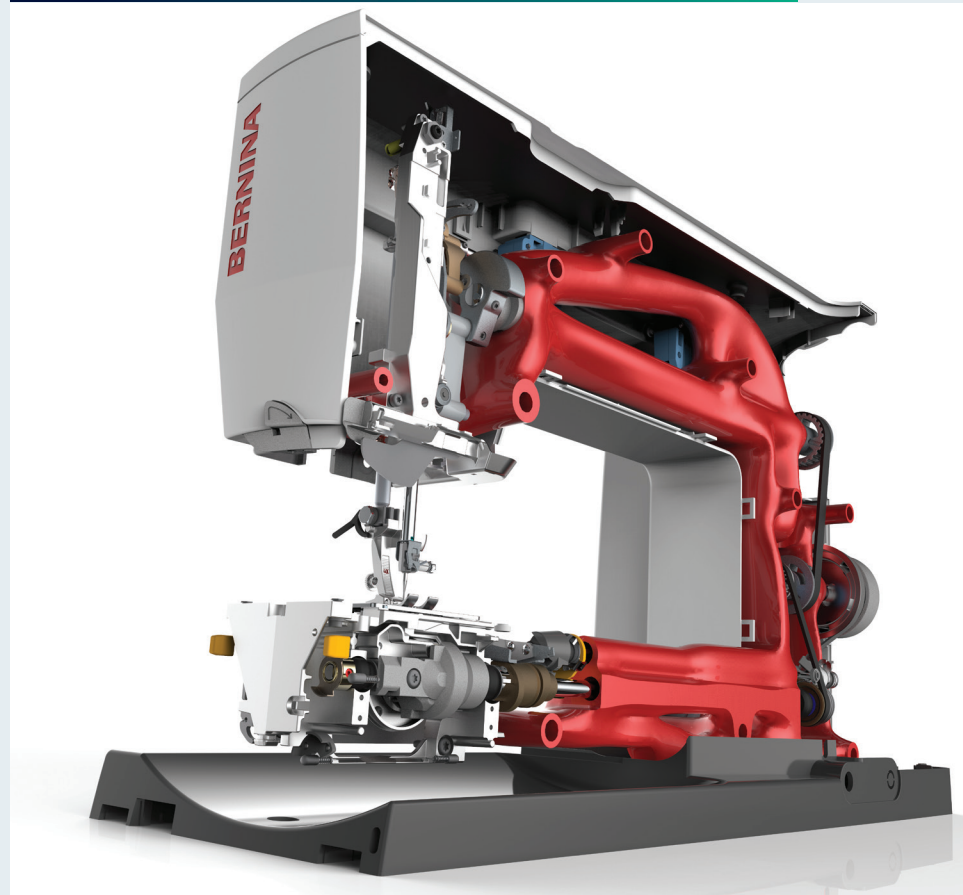
Regardless of where or how parts are created – imported from other systems, digitally scanned or as part of a generative design analysis – Solid Edge provides you with uniquely powerful tools to prepare faceted bodies for downstream modeling and/or manufacturing.

Generative design

Generative design is a powerful solution that enables quick creation of optimized, lightweight product designs. Generative design studies are sure to reshape both the way you think about designing a product and the product itself. Incorporating generative design capabilities early in the process will help you to create new innovative designs, reduce material costs and influence your downstream manufacturing process, whether you're leveraging new additive technologies or employing traditional manufacturing processes.

Subdivision modeling

Subdivision modeling allows you to develop distinctively unique products based on organic shapes without the need for expert knowledge. Using advanced capabilities for shape creation, manipulation and analysis allows anyone to quickly and easily develop high-quality advanced shapes based on complex geometry in a fraction of the time required with traditional products.



Convergent modeling

Convergent Modeling™ technology, which is part of the Solid Edge portfolio, allows you to incorporate mesh models into the design workflow to create real designs. You can also seamlessly combine traditional boundary representation (b-rep) solid models with triangular mesh models without time-consuming and error-prone conversions.

Parasolid software

The engine behind the Solid Edge portfolio is Parasolid® software, the industry's most widely used computer-aided geometric modeling kernel. Using Parasolid enables the creation and modification of digital 3D models and delivers complete 3D model compatibility between product development applications such as design, simulation and manufacturing.

The Solid Edge portfolio

Solid Edge is a portfolio of affordable, easy-to-use software tools that address all aspects of the product development process. Solid Edge is available in a range of options, from introductory to advanced capabilities via flexible licensing models to fit the requirements of designers and engineers working in start-ups, advanced manufacturing organizations and everything in between.

Solid Edge mechanical design

Accelerate design with powerful yet easy-to-use mechanical design applications, available in a range of packages.

Solid Edge electrical design

Integrate electrical and electronic components with industry-proven solutions that enable seamless electromechanical collaboration.

Solid Edge simulation

Investigate design options and refine functionality in a virtual environment to accelerate analysis, predict performance and reduce prototypes.

Solid Edge data management

Streamline collaboration, improve workflows and accelerate engineering changes.

Solid Edge technical publications

Quickly author accurate instructions for product manufacturing, installation and maintenance.

Solid Edge manufacturing

Minimize manufacturing costs and understand tolerances with advanced solutions for manufacturing, including computer numerical control (CNC) machining and additive manufacturing.

Cloud-based collaboration

Securely view, share and mark up designs online for ease of collaboration.



Solid Edge mechanical design

It's important the CAD software you choose is easy to use and accessible to both designers and occasional users, is a future-proof solution and is built on open standards. Using Solid Edge enables you to check all these boxes.

Solid Edge mechanical design solutions are distinguished by their ability to provide superior part modeling, fast assembly performance, flexible drafting, best-in-class sheet metal capabilities and industry-leading visualization. These attributes enable Solid Edge to deliver a fast and flexible design experience while easing the challenges inherent in product development.

Using Solid Edge simplifies data migration of 3D models and 2D drawings from other industry software, with dedicated migrators for SolidWorks, Creo Elements Direct, Creo (previously Pro/Engineer) and Autodesk Inventor. These migrators maintain rich model information and associated drawings during migration.

Solid Edge design is available in four packages, ranging from basic design and drafting capabilities to a premium version.

Solid Edge electrical design

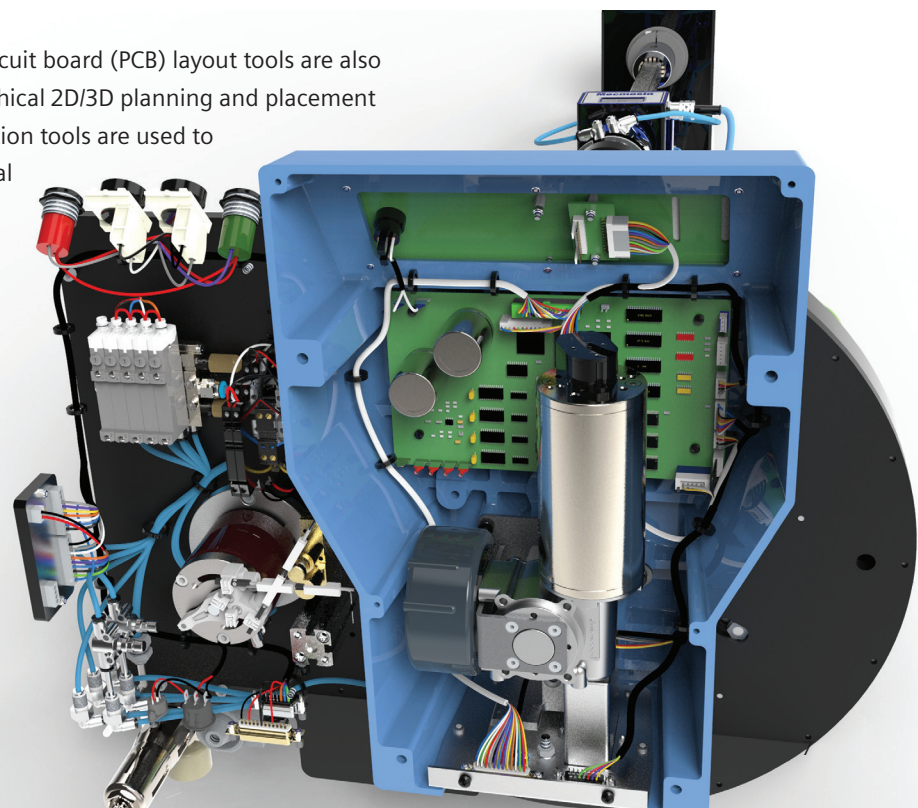
Products are increasingly smart and connected and are designed to improve our productivity and simplify our daily lives, regardless of the industry. Designing these products is anything but simple.

Electromechanical design is meant to be seamless and Solid Edge electrical design solutions provide just that. Industry-proven tools allow you to design electrical systems while simultaneously collaborating with the mechanical domain to optimize product design. Using included electrical simulation, your design will be completely functional. And by automating wire harness engineering, you can create designs that are completely manufacturable.

Best-in-class schematic capture and printed circuit board (PCB) layout tools are also available, including sketch routing and hierarchical 2D/3D planning and placement tools to simplify PCB design. Unique collaboration tools are used to exchange design aspects between the electrical and mechanical workflows with support for IDX 2.0 and 3.0 formats.

“Fifty-eight percent of companies require at least two additional design iterations to address electro-mechanical issues.”

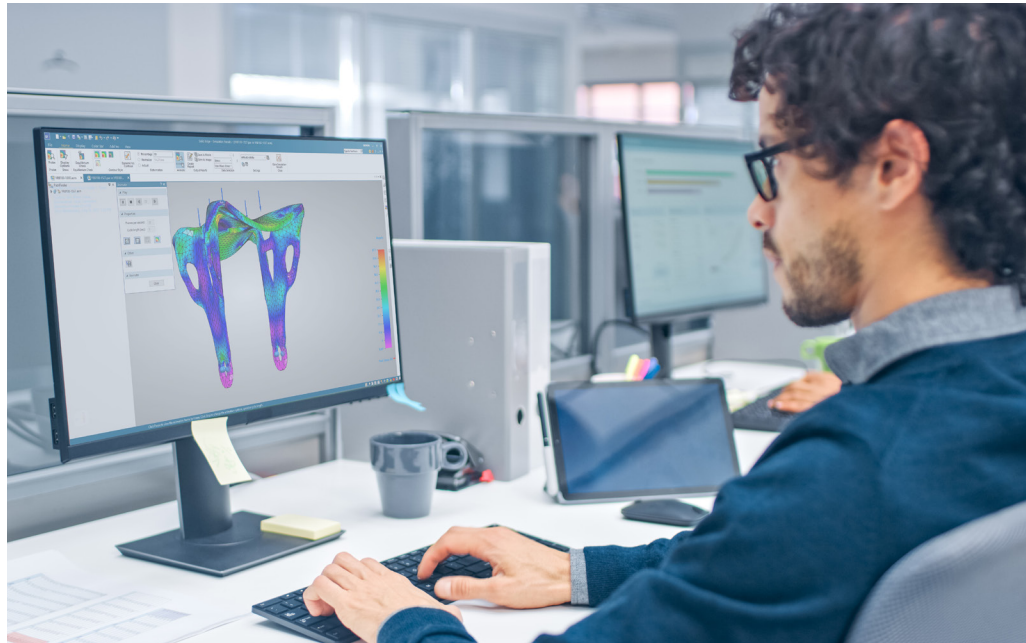
Aberdeen, PCB Excellence: On Time, On Budget, and Strategically On-Point, 2019



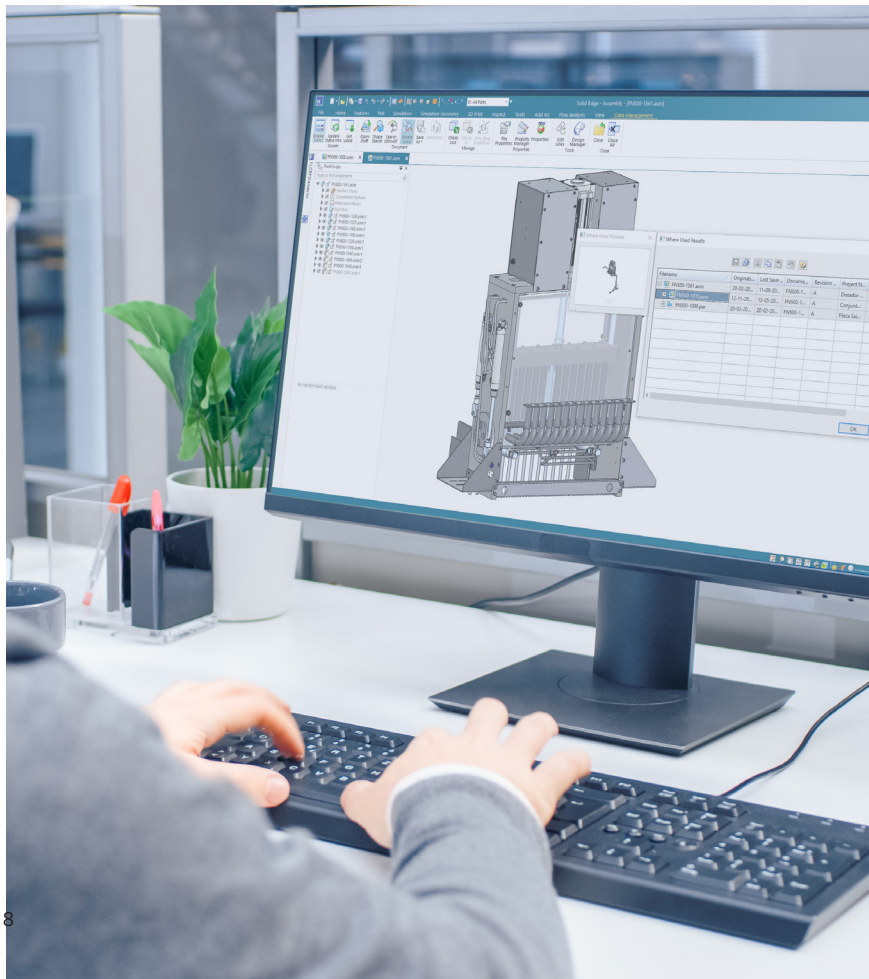
Solid Edge simulation

During the design phase of the product development lifecycle, users need fast, easy-to-use and accurate tools to help them understand the behavior of their designs early, eliminate the less attractive options and deliver optimized, best-in-class products. Solid Edge simulation solutions meet these needs by enabling analysis of virtual prototypes to be carried out by designers at an early stage in the design process.

From thermal or transient heat transfer analysis to finite element (FE) and computational fluid dynamics (CFD) analysis, Solid Edge has you covered with simulation tools for design validation and optimization.



Solid Edge data management



Solid Edge offers a scalable set of data management solutions to meet the varying needs of manufacturing organizations. This enables you to rapidly implement data management practices to improve workflows and provide measurable results, such as improved revision control, faster engineering changes and reduced errors.

Solid Edge also provides a path to help when you're ready to grow to a more robust data management solution. The Teamcenter® software Rapid Start configuration integrates Solid Edge with Teamcenter, enabling you to manage, capture and share all your product development data and ensuring your participation in an advanced digital product development ecosystem.

Solid Edge technical publications

Use Solid Edge technical publications to deliver satisfactory in-field product performance and make your business a success. Easy-to-use, fully integrated authoring applications enable you to clearly communicate detailed and accurate instructions for product manufacturing, installation and maintenance. Whether you want to create state-of-the-art illustrations or interactive 3D technical documents, Solid Edge technical publications can be used to automatically retrieve content from CAD models so you don't have to manually recreate that data.



Image courtesy of Thermoplan

“Digitalization has also made it possible to better track and manage the materials used in production and Thermoplan’s quality assurance processes. The company can now also offer customer service remotely over the internet; for example, by providing instructions for replacing the water filter.”

Adrian Steiner
Chief Executive Officer and Co-owner
Thermoplan

Solid Edge manufacturing



Solid Edge provides advanced tools needed to manufacture today's complex products, from CNC machining to 3D printing.

Machine tool programming that addresses all types of CNC manufacturing, from simple NC programming to high-speed and multi-axis machining, is available in Solid Edge CAM Pro, a comprehensive, highly flexible system that uses the latest machining technology to efficiently program your CNC machine tools.

Additionally, Solid Edge enables you to automate print preparation and color printing options for additive manufacturing (AM). Whether you are doing additive manufacturing in-house or 3D printing with a service bureau, Solid Edge allows you to compare price and delivery options to make your ideas a reality.

Cloud collaboration

With Solid Edge and Teamcenter Share, your team can collaborate efficiently, securely share data with customers and suppliers from anywhere on any device. Teamcenter Share is a cloud-based solution specifically designed to help customers collaborate with colleagues, partners and customers in a secure environment. With Teamcenter Share you get 3D and 2D CAD viewing and markup capabilities, augmented reality (AR) and virtual prototyping, secure project-based sharing and more.



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Demanding customers, rapidly morphing products, new business models and product development workflows provide valuable opportunity for innovation. And the opportunity to innovate across any or all of these axes is not a distant vision, it is very much a present-day possibility, but it will require a digital technology platform; one that enables more than the sum of its constituent parts.”

Digital innovation value: The whole being greater than the sum of its parts, Allan Behrens, Taxal Consulting, 2018

Solid Edge community



Network with other Solid Edge users and improve your productivity.

The growing and vibrant Solid Edge community includes professionals, students, teachers, mentors, makers, start-ups and co-creation communities, offering comradery and ongoing support.

The Solid Edge user forum provides tutorials, blogs, podcasts and tips and tricks to improve your productivity. Regional user meetings and learning events provide opportunities to network with peers and improve your Solid Edge proficiency.

You can even become certified in Solid Edge from the comfort of your desk. The Solid Edge certification materials and exam are designed to evaluate skills and recognize Solid Edge Certified Professionals for their expertise.

Maximize the value of your investment

Solid Edge is sold as modules with progressive functionality, ranging from 2D/3D design and automated drawing production to advanced functionality such as assembly design, sheet metal, simulation and engineering libraries – all for a reasonable monthly fee – including maintenance and support.

An experienced network of value-added resellers around the globe provides technical support and training for your entire design team to ensure your success. Achieve continuous value and maximize your return on investment in Solid Edge by harnessing the power of maintenance, enhancements and support (ME&S).

The Solid Edge portfolio delivers easy-to-use, affordable, industry-leading solutions and much more. Combined with outstanding customer support, a robust and engaged community and Siemens technology know-how, Solid Edge provides an advantage that can help you to design and deliver tomorrow's innovations.

For detailed information about the individual products in the Solid Edge portfolio, visit solidedge.siemens.com

**Get started easily
with a free trial,
monthly subscription
or perpetual license**

Siemens Digital Industries Software helps organizations of all sizes digitally transform using software, hardware and services from the Siemens Xcelerator business platform. Siemens' software and the comprehensive digital twin enable companies to optimize their design, engineering and manufacturing processes to turn today's ideas into the sustainable products of the future. From chips to entire systems, from product to process, across all industries, [Siemens Digital Industries Software](#) – Accelerating transformation.

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