# DS SOLIDWORKS

# DISCOVER SOLIDWORKS 2024

Create an Experience—Smarter, Faster, Together

**DASSAULT SYSTEMES**

# WHAT'S NEW IN SOLIDWORKS 2024

You create great designs, and these great designs get built into product experiences. To streamline and accelerate your product development process from concept through manufactured products, SOLIDWORKS® 2024 contains new, user-driven enhancements, focused on helping you work smarter, faster, and together with your teams and external partners.

Each release of SOLIDWORKS focuses on improving your workflow by making the tools you use most as fast and efficient as possible. Further, SOLIDWORKS 2024 expands your toolset with purpose-built solutions and the ability to easily connect your design data to the cloud-based **3D**EXPERIENCE® platform with Cloud Services.

Available with new purchases of SOLIDWORKS Desktop CAD licenses, Cloud Services allows you to share and mark up 3D designs with anyone, securely store and access designs, and formally manage design changes. Cloud Services removes the friction associated with traditional design sharing and collaboration tools, streamlining everyday tasks to help you focus on design.

With new possibilities for data management, sharing, and collaboration at your side, let's explore the new design enhancements now available with SOLIDWORKS 2024.

# WORK SMARTER

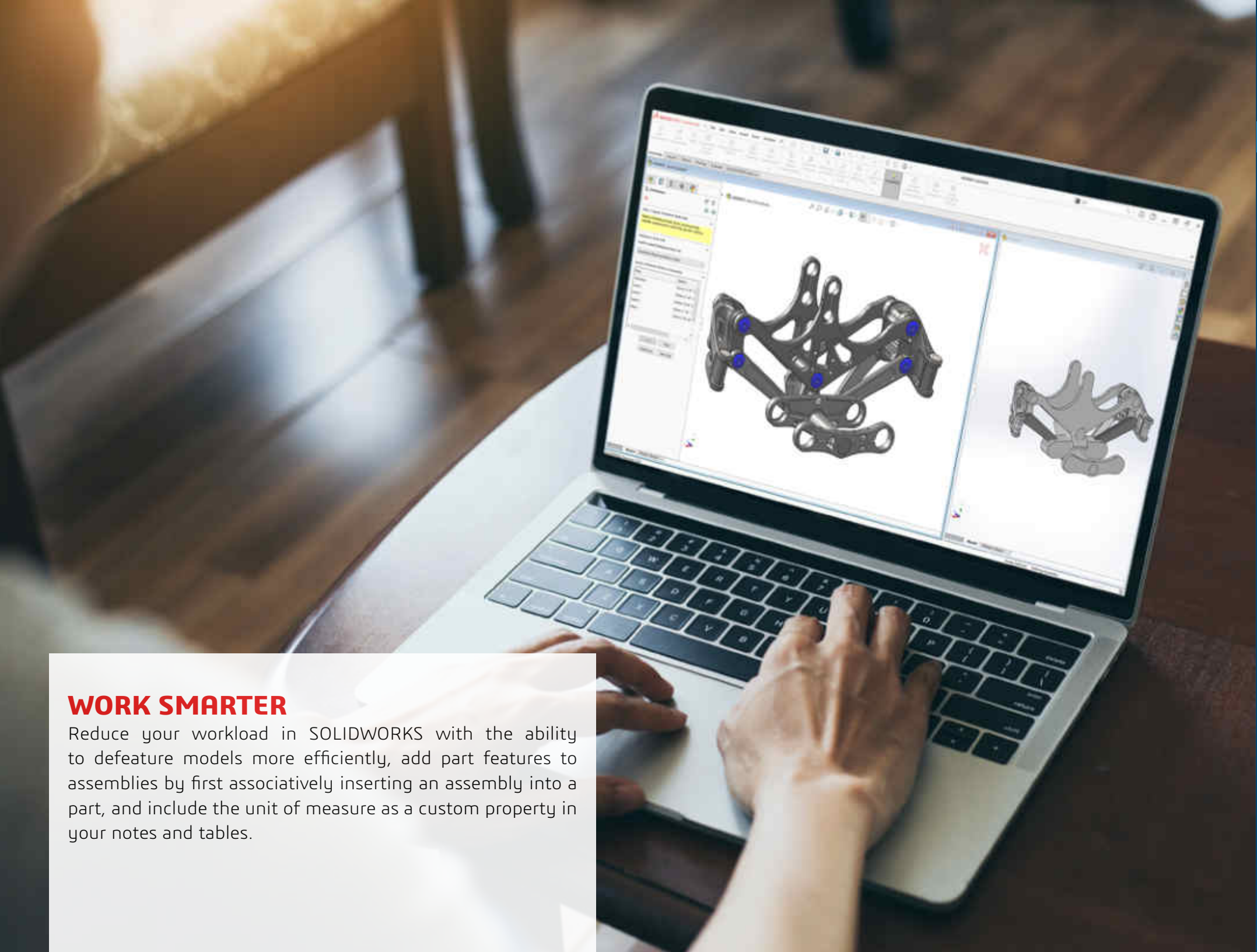Reduce your workload in SOLIDWORKS with the ability to defeature models more efficiently, add part features to assemblies by first associatively inserting an assembly into a part, and include the unit of measure as a custom property in your notes and tables.
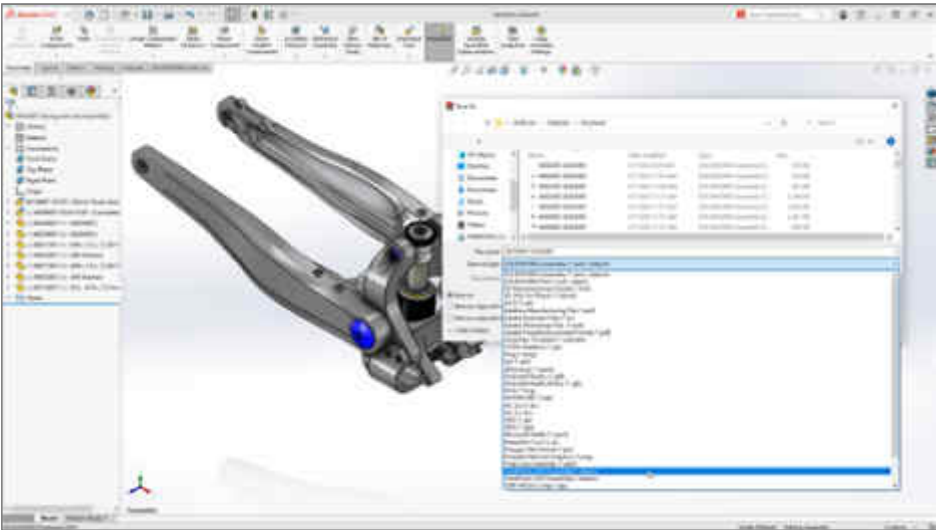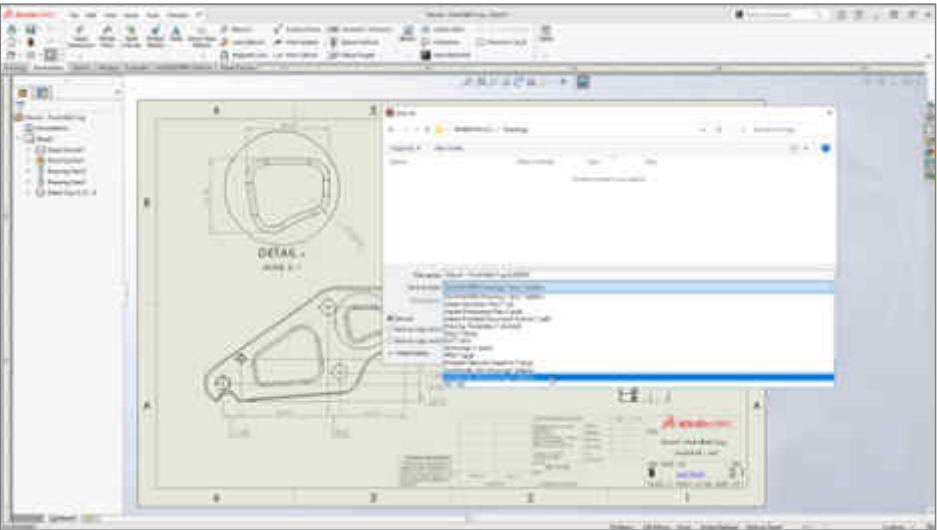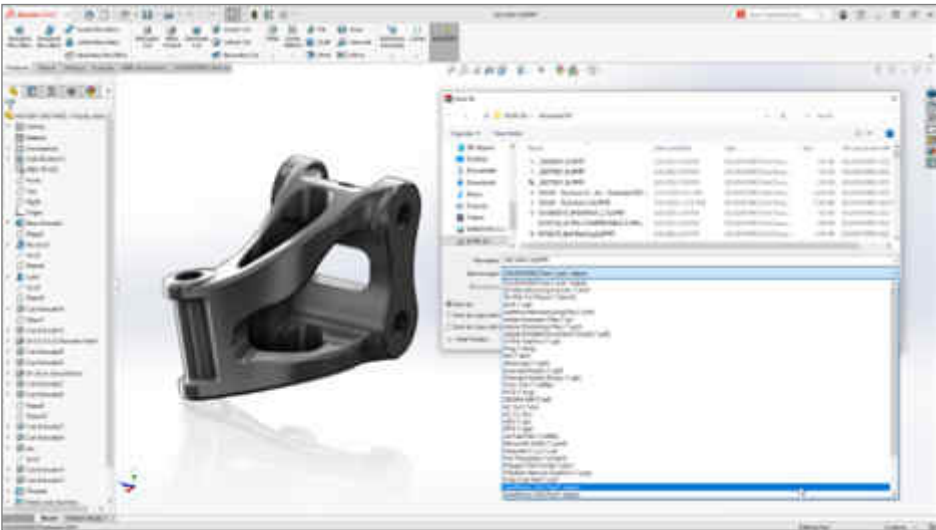
## USER EXPERIENCE

### Previous Release Compatibility

Collaborate with anyone who is using an older version of SOLIDWORKS by saving your files as a previous release. Save parts, assemblies, and drawings as a SOLIDWORKS version that is up to two years prior to the latest release.
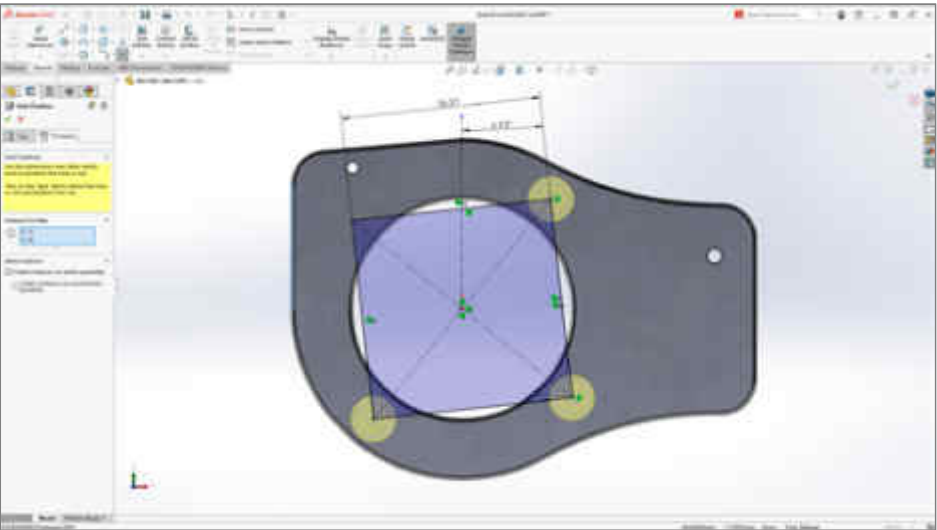
# PARTS AND FEATURES

## Hole Wizard

Accelerate the placement of Hole Wizard holes with the new option to select the end points of geometry where holes are placed automatically. You can also use geometric sketch entities like lines, squares, slots, and splines as guides to position the holes. Hover over the entities and click to position the holes on these sketch entities.

## Making Multibody Parts From Assemblies

With the Make Multibody Part tool, you can convert an entire assembly into a separate, single multibody part that is linked to the parent assembly. The parent assembly will reflect all features that you create in the linked multibody part. Downstream platform applications also support these features, so you can perform post-assembly operations on the multibody part, such as material removal.
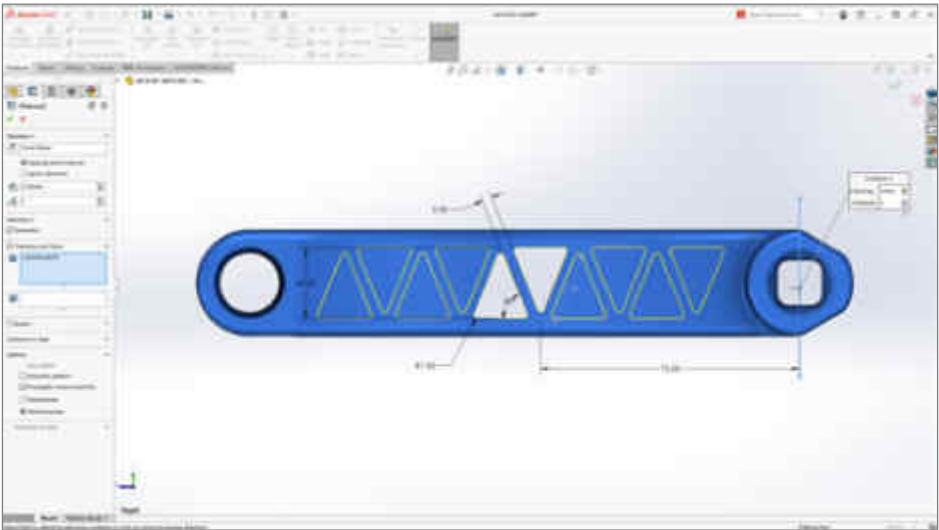
# PARTS AND FEATURES

## Bidirectional Linear Pattern

Create bidirectional linear patterns with a single click using the new Symmetric option. There is now more flexibility when creating a linear pattern with the ability to create a bidirectional linear pattern. This speeds the creation of a bidirectional linear pattern by eliminating the need to define the second direction to the linear pattern. It also guarantees both directions will be symmetric and have the same number of instances in the pattern.

## ASSEMBLIES

### Defeature Rule Sets

Simplify your design in fewer steps to improve performance and protect your intellectual property. Defeature your model with the Defeature Silhouette option, using rules that can be based on criteria such as custom property, mass property, and file name.
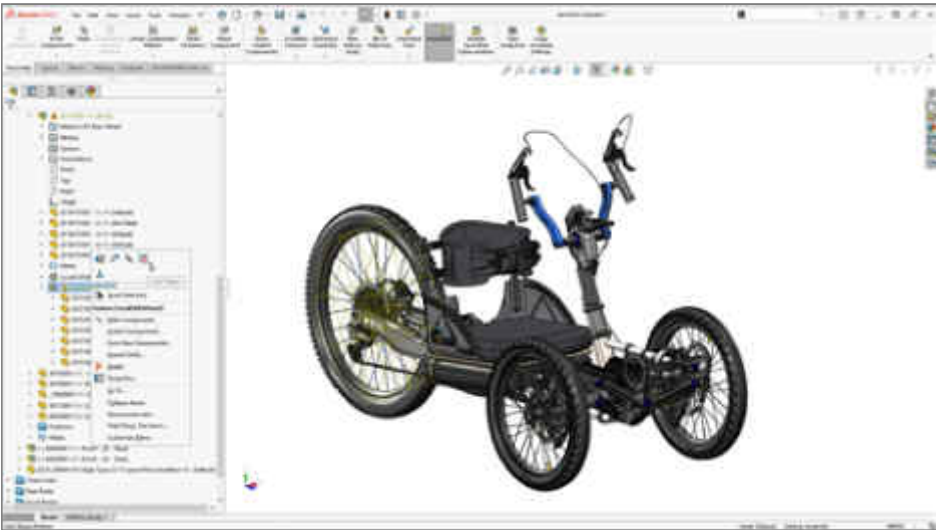
### Repairing Missing References in a Linear or Circular Pattern

Spend less time repairing missing references for linear and circular component patterns, as SOLIDWORKS can now automatically find an appropriate substitute reference, if available.

## ASSEMBLIES

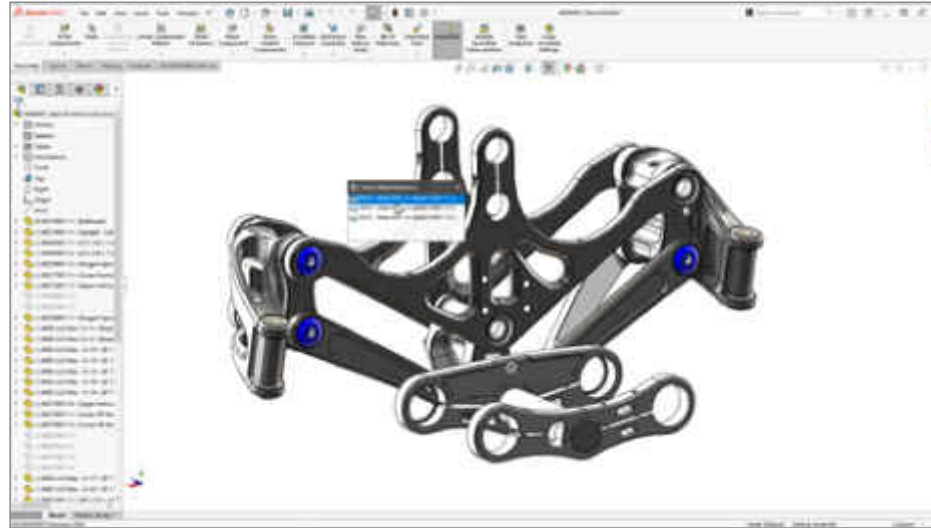### Mate References and Auto Repair of Mate References

Get component assembly right the first time. Be more precise when mating components with an existing mate reference by allowing the user to choose between possible mate reference solutions. Now when creating mate references, you can select "Create mates only" when names match, to create mate references only when the mate reference names are the same.

Improvements to the Auto Repair feature for concentric and parallel mates add more criteria for identifying replacement entities.

More abilities at your fingertips:

- Employ new modeling workflows with the ability to associatively insert an assembly into a part. Because the assembly is now a part, you can apply all part features to it. You can also display a single part in a bill of materials in place of an assembly.

- Create a custom property that lets you automatically display not only the value, but also the unit of measure, such as length, mass, angle, in your notes and tables.
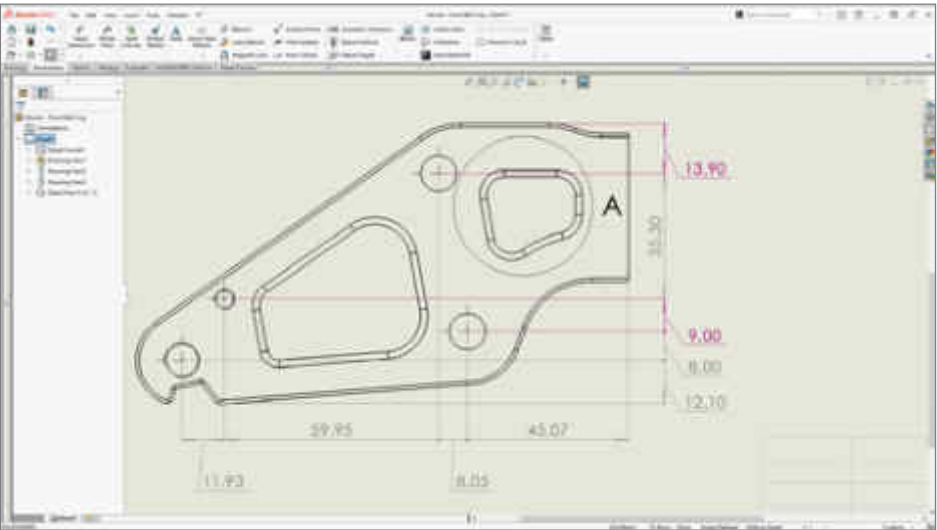
## WORK FASTER

Work more efficiently in SOLIDWORKS with intelligent, instant creation of sketch dimensions, improvements to collinear dimensioning for chain dimensions in drawings, and access to new components in Toolbox.

# DRAWING AND DETAILING

## Overridden Dimensions

Gain more insight about which dimensions on a drawing are overridden, by showing overridden dimensions in a different color of your choice.

## Keeping Chain Dimensions

Speed up detailing drawings by utilizing collinear dimensioning for chain dimensions, and avoid overcrowding of dimensions by following ISO/ANSI dimensioning standards behavior. Ensure that chain dimensions remain collinear, even with limited space. When dimension text and arrowheads overlap, you can select options for the best fit.

# DRAWING AND DETAILING
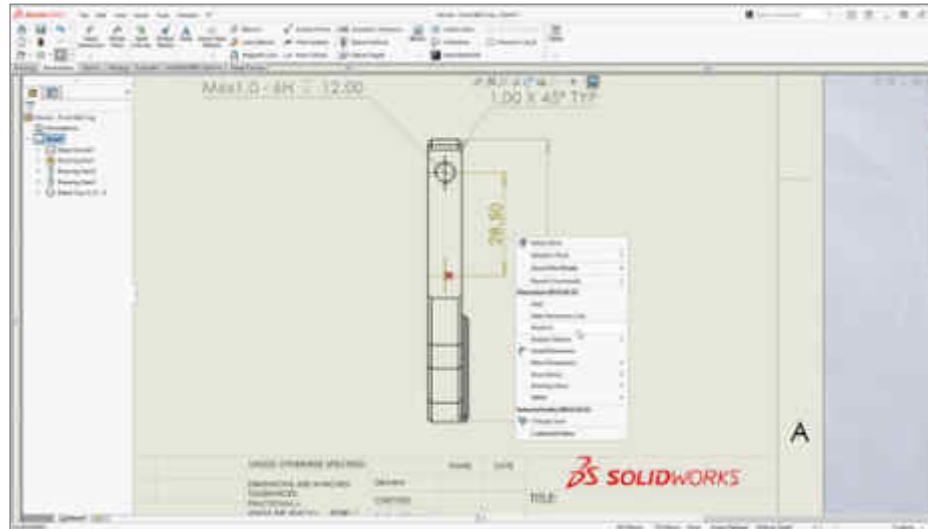
## Reattaching Dangling Dimensions
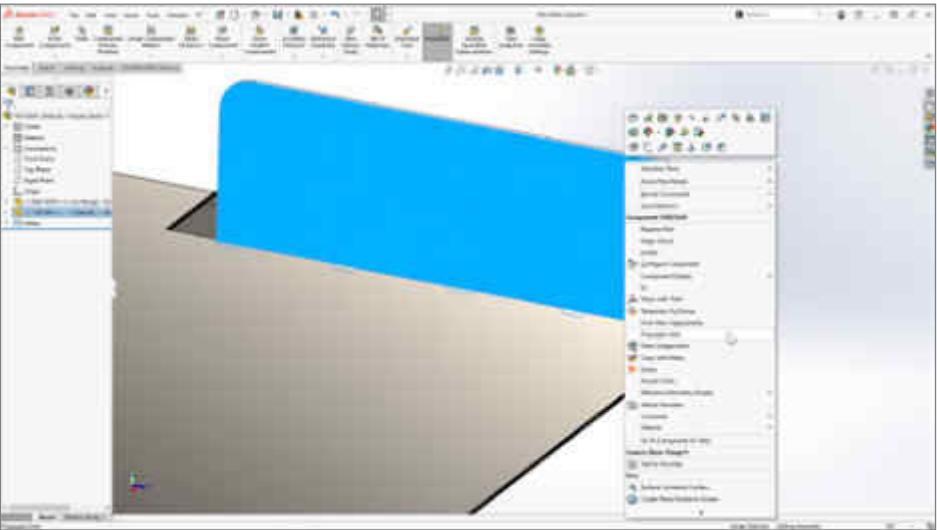
Speed detailing drawings with improvements to reattaching dangling dimensions. A new option called Reattach is available through RMB for all dimensions, including dangling dimensions. This provides a more precise workflow for reattachment.

# SHEET METAL

## Slot Propagation

Speed design of sheet metal parts that contain Tab and Slot features. Slots now propagate for all instances of a tab part in an assembly, regardless of how the other instances of the part are added into the assembly.
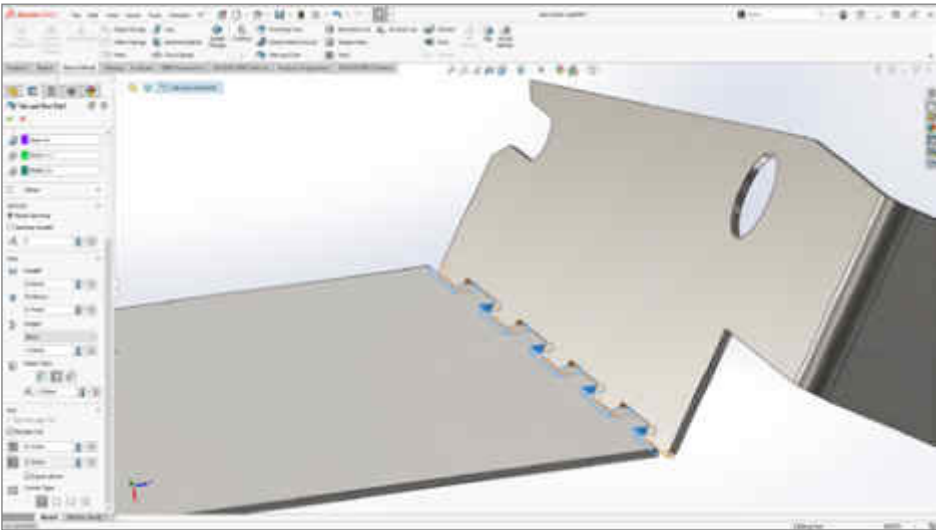
## Tab and Slot

A new option helps improve manufacturability of parts when using sheet metal Tab and Slot features. When a tab part is angled to the surface where the slot is to be located, you now have the option to select a Normal Cut to the surface. A Normal Cut can be more easily manufactured using standard sheet metal cutting processes, such as laser, waterjet, and punching.
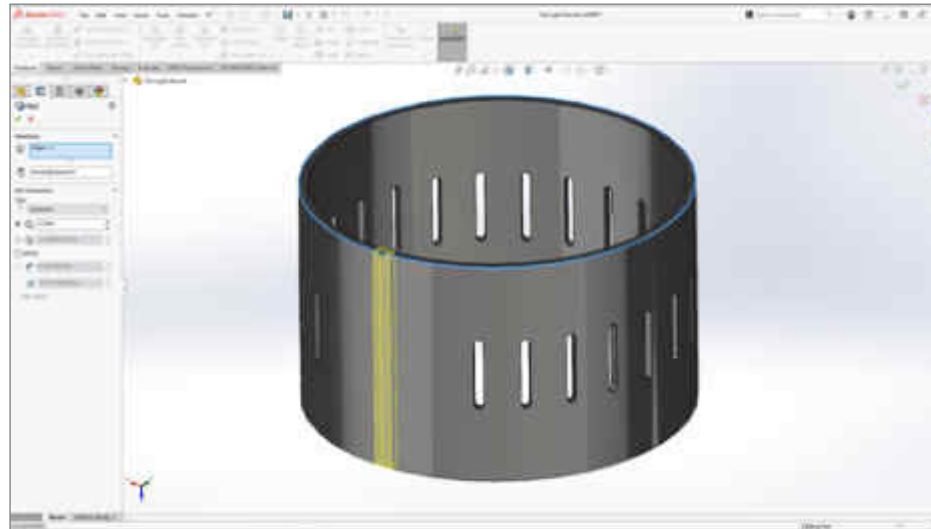
# SHEET METAL



## Rip Tool

Use the Rip Tool to convert thin-walled cylindrical and conical solid parts to sheet metal with less effort. Create a Rip/Gap sheet metal feature in thin-walled cylinders and cones, and then use the Insert Bends command to convert them into sheet metal parts that can be flattened for manufacturing.

# STRUCTURE SYSTEM AND WELDMENTS
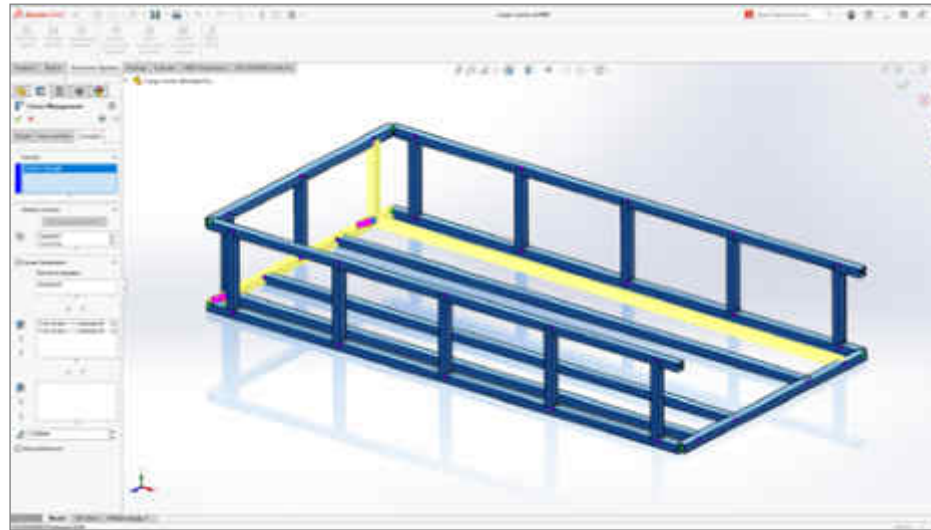
## Corner Treatments

Create weldments in structure systems faster and with fewer modifications with the new industry-standard default corner treatments. The default corner treatments are now more typical of standard corner treatments used in the industry.

In addition to the above:

- Spend less time creating standard fasteners with the addition of more than 70 new ANSI Inch/Metric fastener types and variants to Toolbox.

- Experience dramatic performance improvements when working with large models due to significantly reduced pause when you release the mouse while rotating models, and a more intelligent method of identifying when a model rebuild is needed, specifically when opening files and making small edits.

- Model electrical harness routes in 3D as single segments or as groups of discrete wires to provide greater detail.

# WORK TOGETHER

SOLIDWORKS is better together with your friends! Empower others across product development disciplines with enhancements to SOLIDWORKS products available at an additional cost, including PDM, Simulation, Electrical, Visualize, MBD, Composer, and more. Best yet, SOLIDWORKS now includes access to the **3D**EXPERIENCE platform with Cloud Services.

# WORK TOGETHER

Some highlights of what's new in these solutions:
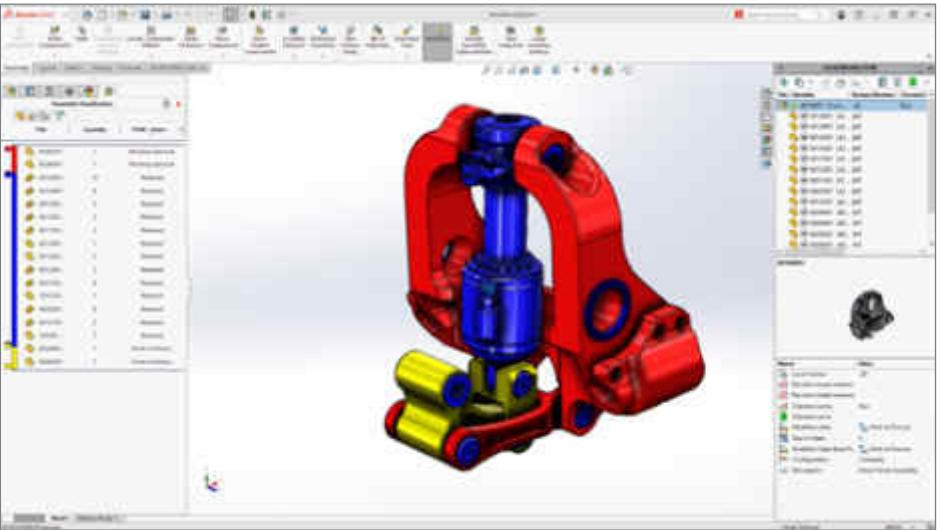
## SOLIDWORKS PDM

Graphically view the workflow state, as well as other PDM data, of SOLIDWORKS assemblies using assembly visualization in SOLIDWORKS PDM. Improve data protection and tracking by ensuring that reference information is hidden for users who don't have access to the referenced file, and by enabling users to check out and undo checkout in the file history. Experience shorter response times when performing common operations such as adding files, checking in, changing state, and using Copy Tree.
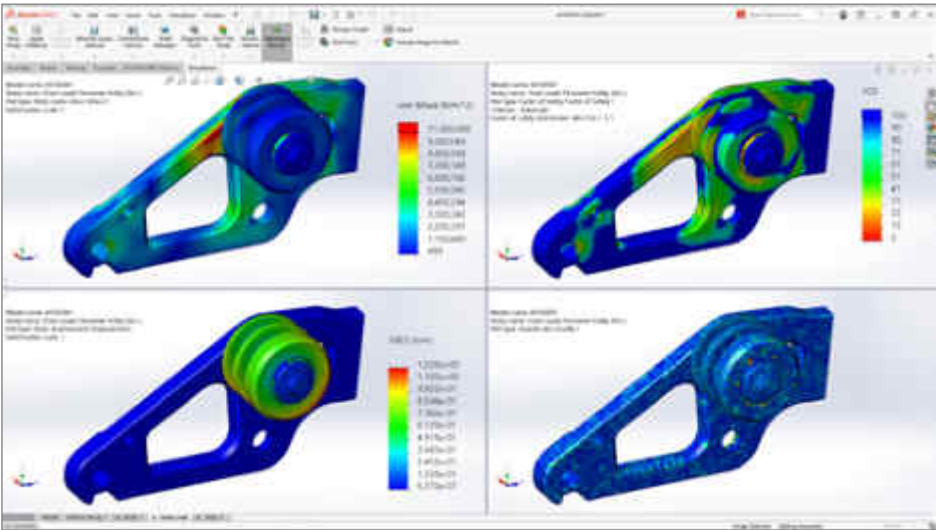
## SOLIDWORKS Simulation

Detect regions that run into contact convergence issues using the new Convergence Check Plot in SOLIDWORKS Simulation. Model bearing connectors with higher accuracy, using the new options for distributed coupling and tilt stiffness, and the ability to define torsional stiffness to stabilize shaft rotation. Utilize streamlined workflows to specify the hot and cold runner systems and launch multi-runs with the new Plastics Batch Manager in SOLIDWORKS Plastics.

Some highlights of what's new in these solutions:
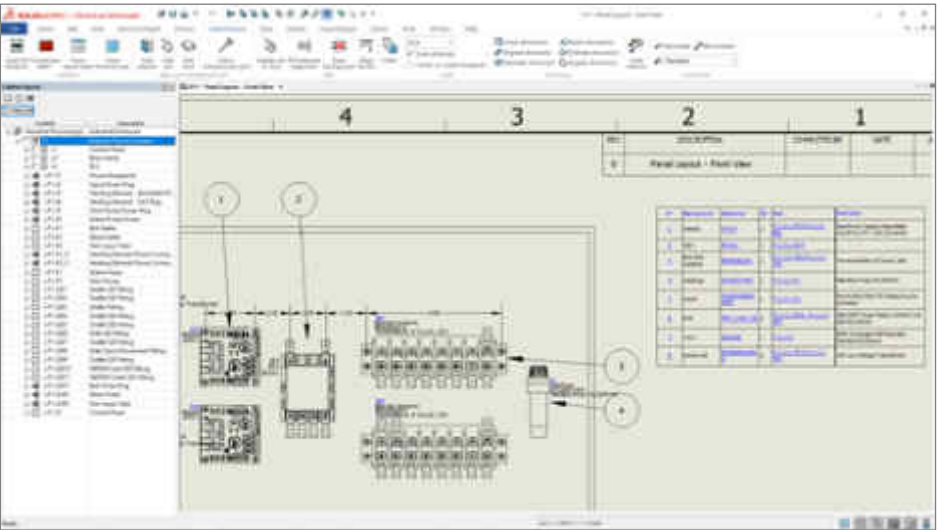
## SOLIDWORKS Electrical

Improve documentation by auto-ballooning components in 2D electrical cabinet layout drawings as in SOLIDWORKS, and showing three or more consecutive component marks as a range. Improve 3D performance by creating or updating only the current electrical route, rather than all routes in all assemblies.

## SOLIDWORKS Visualize

Deliver more-realistic renderings and enhance the visual consistency with the **3D**EXPERIENCE platform and other applications by adopting Physically Based Rendering (DSPBR) materials in SOLIDWORKS Visualize and SOLIDWORKS Visualize Connected.

# WORK TOGETHER

Some highlights of what's new in these solutions:

## SOLIDWORKS COMPOSER™

View PMI (product manufacturing information) exported to a SOLIDWORKS Composer (SMG) file in 3DPlay.

## GET CONNECTED

You have several options for conveniently connecting your SOLIDWORKS data to the **3D**EXPERIENCE platform to increase your team's productivity so you can leverage its built-in data management and collaboration capabilities. If you want to continue using your existing SOLIDWORKS Desktop installation, you can use Collaborative Designer for SOLIDWORKS, which connects your data to the **3D**EXPERIENC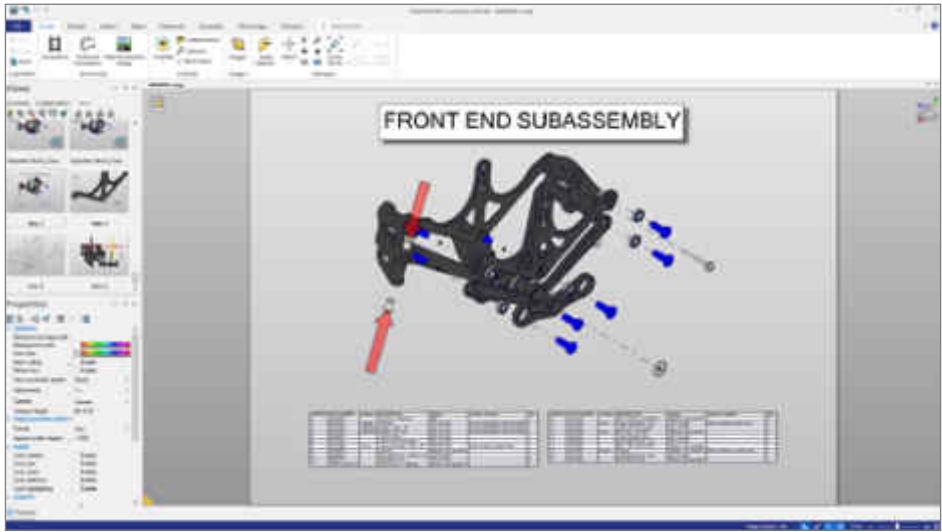E platform. Or if you are looking for a new SOLIDWORKS installation that is cloud-connected, you can use **3D**EXPERIENCE SOLIDWORKS, which is natively connected to the platform. Both include all your favorite SOLIDWORKS features and install locally. **3D**EXPERIENCE SOLIDWORKS offers a new offline mode, so you can work without an internet connection.

Collaborative Designer for SOLIDWORKS is part of the new Cloud Services, available to new SOLIDWORKS Desktop CAD licenses purchased as of July 1, 2023.

What capabilities are included with Cloud Services that you can take advantage of today?

**Share and Markup:** Ability to share your 3D designs with ANYONE—directly from SOLIDWORKS.

**Store and Revise:** An online storage hub that's purpose-built with CAD relationships and collaboration in mind.

**Manage and Control:** Full access to a suite of tools to help manage data, work through formal change actions and approvals, and keep project tasks in check.

**Click here** to explore Cloud Services benefits and use cases.
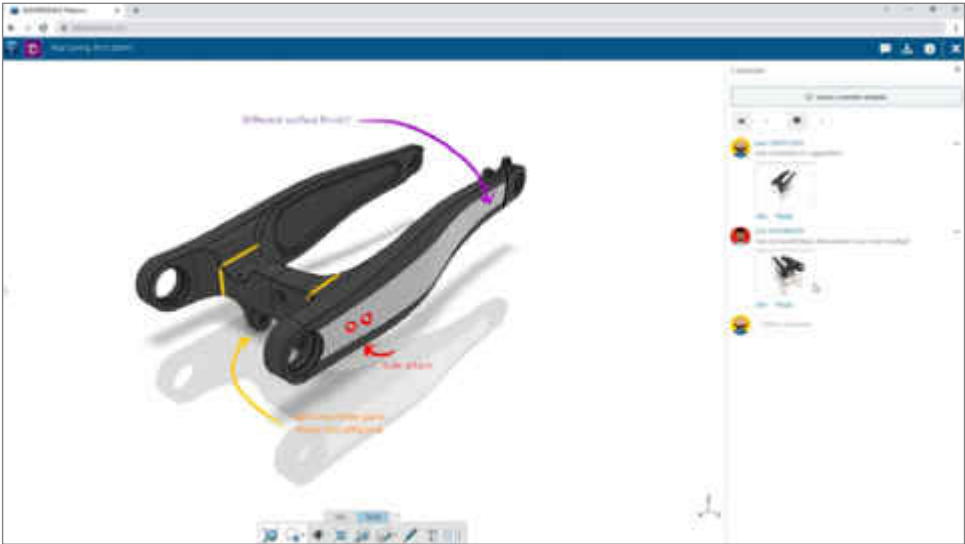


Some of the latest features you can look forward to by connecting your SOLIDWORKS data to the **3D**EXPERIENCE platform:

- Collaborate with everyone, whether internally on your team or externally with stakeholders without leaving SOLIDWORKS.
- Customize the rules that guide how SOLIDWORKS configurations are interpreted on the **3D**EXPERIENCE platform.
- Get to know your way around the platform fast with the Welcome app, offering short video tutorials and access to more in-depth resources and the SOLIDWORKS user communities.
- Use data management for alignment with company revision schema.
- Sync SOLIDWORKS revisions with platform revisions.
- Save large assembly data as you continue to design, with Asynchronous Save.

## DISCOVER 3DEXPERIENCE WORKS

Expand your horizons as your company grows with access to best-in-class tools on the **3D**EXPERIENCE platform across the entire product development life cycle, including next-generation design, advanced simulation, manufacturing, and more.

The SOLIDWORKS browser-based design roles, such as 3D Creator, 3D Sculptor, and Manufacturing Definition Creator, work with parametric design, free-form modeling, structure design, sheet metal, molds, and more.

With automatic updates in the browser-based design roles, you always have access to the latest updates, now including the ability to find and access your favorite tools with the new command search, and compatibility with CATIA® Eco-Design Engineer, so you can design more eco-friendly products from anywhere on any device.

With **3D**EXPERIENCE Works simulation, you can perform even more what-if scenarios to deliver better, more sustainable products on time and on budget with access to more powerful structural, plastics, fluids, and electromagnetics tools. Overcome product development challenges and gain a competitive advantage by upgrading your engineering abilities and connecting the teams on the **3D**EXPERIENCE platform.



No matter the size of your shop, you're always seeking to improve efficiency. **3D**EXPERIENCE Works manufacturing solutions include machining, robot programming, workflow simulation, and more. Data and digital threads are critical to making fast and accurate decisions, and with **3D**EXPERIENCE platform, you'll have access to purpose-built solutions, and you will also connect your teams.

The **3D**EXPERIENCE platform brings everything and everyone together under one secure roof. Additional benefits:
- Real-time collaboration
- Out-of-the-box cloud data management
- Low IT overhead with no server to set up and no software upgrades
- Ability to expand your capabilities with additional industry-leading tools for design, simulation, data management, and manufacturing

## ARE YOU READY TO START WORKING SMARTER, FASTER, TOGETHER?

SOLIDWORKS believes, to stay competitive, to stand out, you have to create not only the best product possible, but an experience. "When you deliver an experience, you become unique," according to SOLIDWORKS CEO Manish Kumar.

The top enhancements for SOLIDWORKS 2024 provide improvements to existing products and innovative new functionality that enable you to work smarter, faster, together, and ultimately create an experience.

SOLIDWORKS 2024 is available today. **Contact your reseller** for a hands-on demo, and see how you can access Cloud Services.

View SOLIDWORKS 2024 demo videos and use cases **here** .

**Click here** to explore new capabilities enabling you to focus on design with Cloud Services.

Our **3D**EXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE Company, is a catalyst for human progress. We provide business and people with collaborative virtual environments to imagine sustainable innovations. By creating virtual twin experiences of the real world with our 3DEXPERIENCE platform and applications, our customers can redefine the creation, production and life-cycle-management processes of their offer and thus have a meaningful impact to make the world more sustainable. The beauty of the Experience Economy is that it is a human-centered economy for the benefit of all –consumers, patients and citizens.

Dassault Systèmes brings value to more than 300,000 customers of all sizes, in all industries, in more than 150 countries. For more information, visit www.3ds.com.

**3D**EXPERIENCE®

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