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Siemens PLM Software

What's new in Solid Edge ST6?

Design better.

Benefits
- Open up new market opportunities with more realistic product designs
- Lower part costs without sacrificing product quality
- Get products to market faster with innovative visual management of complex design data
- Simplify migration of competitive data to speed adoption of a stable CAD platform while protecting intellectual property

Features
- Over 1300 customer requests satisfied
- Advances in assembly, stylized surfacing and sheet metal design expand the breadth of 3D models

Summary
Industry-leading Solid Edge® ST6 software satisfies over 1300 customer requests that help companies design better products and complete projects faster while minimizing costs. This release promotes design of a wider variety of products from stylized ergonomic parts to stamped sheet metal components; optimizes part fit and position using automated tools; facilitates visual understanding and management of complex design data and engineering changes; and advances bulk migration of existing intelligent models to Solid Edge.

Taking design to a new level
New design and collaboration tools offer better ways to create and document assemblies, stylized consumer parts and sheet metal components. Coupled with innovative synchronous technology, Solid Edge makes it easier to push designs to new levels.

Synchronous features – such as cuts, revolved cuts, holes, rounds and chamfers – and product manufacturing information (PMI) can be defined on a writable target part while working in an assembly. This simplifies the interaction between parts modeling and assembly design, speeding product development.

You can also realize increases in design efficiency by directly using assembly occurrences as synchronous Boolean tool bodies allowing you to create part clearances faster.

Enhancements to synchronous patterns greatly improve usability, behavioral quality and ability to place center patterns.

Solid Edge can be used to recognize a series of parallel hole features and redefine them as a single pattern, which improves a designer's ability to reuse imported data.

Solid Edge ST6 delivers several enhancements to improve the synchronous modeling experience. The steering wheel is sizable, and is easier to position and orient. The solution manager is more intuitive and predictable. Blends can be partially deleted, facilitating cleanup of imported models.

Stylized surface modeling
The new redefine surface command replaces multiple "dumb" faces with one

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Features *continued*

- Automated design optimization helps minimize material use and product weight while improving part fit and function

- Solid Edge for SharePoint provides advanced, visual design management tools implemented on existing IT infrastructure

- New bulk migration tool facilitates adoption of synchronous technology for existing competitive data

intelligent face, a huge step in the modification of imported surfaces. Designers can refine the shape of the replacement face by adding key point curves based on the original input faces and establish curvature continuous boundaries for creating ultra-smooth surfaces between existing faces.

Intuitive, in-place curvature edits can be performed using all-new 3D continuity control handles at curve and surface boundaries. Curvature or tangency continuity is specified using the tangency control handle while the magnitude of either curvature condition is interactively modified using the tangency magnitude handle.


Bounded surfaces now allow guide curves for added shape control while supporting curvature continuous boundary conditions for ensuring a smooth match to adjacent faces. The user experience is elevated by taking advantage of 3D control handles and surface visualization tools, such as UV curves and curvature combs.

The new ruled surface tool creates a controlled body taper by sweeping linear cross sections along a curve or edge. The resulting face can either be tangent or normal to an existing face.

The surfacing workhorse command, BlueSurf includes new visualization enhancements such as user-defined UV curve density as well as optional curvature combs with customizable magnitude. This gives the user real-time feedback when refining surface shapes.
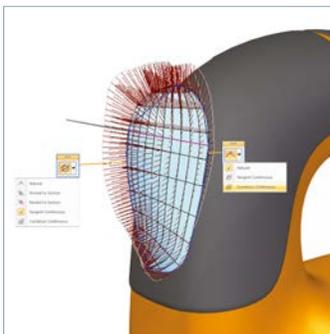
Surface inspection has been simplified with the introduction of the section curvature tool. This virtual contour gauge presents curvature combs along a common plane as it intersects many faces at once, amplifying any surface irregularities.
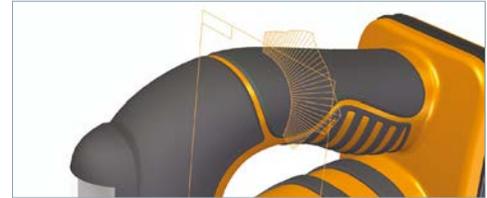

Imported model interrogation is enhanced with the curvature inspection tool. You can identify flaws in stylized parts by showing surface contours relative to the UV positions on multiple faces.

A symmetrical reflection of a model can be used to inspect the form of a model without having to mirror the body, which is especially useful in assembly modeling.

Surface modification is faster and provides you with the ability to trim and extend multiple faces in one step. This innovation results in a shorter feature list, too.

The intuitive behavior of the control handle, coupled with visual differentiation between control and handle points, simplifies robust 2D curve edits.

Enhancements to keypoint curves support curvature continuous end conditions. Optional 3D control handles and real-time previews facilitate manipulation.
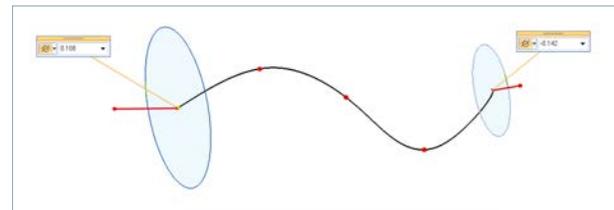
Round now supports curvature continuous conditions along boundaries.

Sheet metal modeling

Solid Edge can be used to advance stamped (or punched) component design. This latest release enhances the Solid Edge industry-leading role in design of straight-brake or roll-form sheet metal parts by including several innovative functions, which are especially useful in applications requiring complex packaging, sheet metal stamping, plastics manufacturing and heavy machinery design.
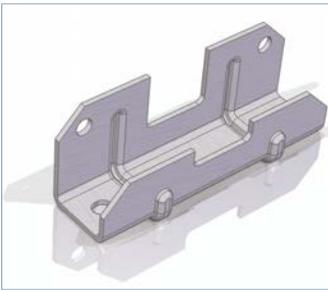
Deformed features – especially those that span bends – are common in stamped metal component design. Solid Edge ST6 facilitates creation of beads, dimples, drawn cutouts and louvers across bends.

In this latest release, sheet metal features can be placed on regular ordered parts of uniform thickness without having to transform the part to sheet metal, which provides an especially efficient method in stamped metal design.

Another enhancement in stamped metal design enables contour flanges to be defined on the edges of existing contour flanges.

Solid Edge ST6 supports the ability of one tool body to stamp or emboss a target body. This can be performed in both the part and sheet metal environments. Creation of stamped parts is faster, providing a head start on the tooling design.
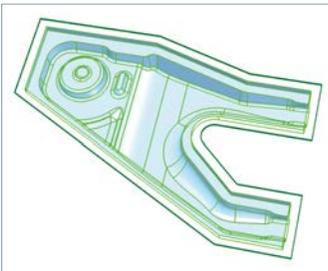
The flexibility of the Solid Edge sheet metal toolset has been extended as the flatten utility has been enhanced to preserve chamfers, blends and holes across bends.

Dimple and drawn cutout features support multiple closed profiles in a single feature.

The variable table contains sheet metal model cut-size variables. Variables can be linked to spreadsheets for downstream calculations.

Simplifying large assembly design

Several utilities have been added to this version of the Solid Edge premiere suite of assembly management tools to facilitate modeling within large-scale projects.

In the all-new simplify assembly environment, designers can further refine the representation of large assemblies. All ordered part modeling commands are available, as are several new tools. This functionality is especially valuable for original equipment manufacturers (OEMs) and suppliers who need to remove proprietary data from assemblies prior to sending the models to final product manufacturers.

With the Enclose Components command, designers can represent or replace selected components with simple geometric shapes. The resulting box or cylinder is associative to the selected components, and can be modified by ordered features to reveal only important external details.
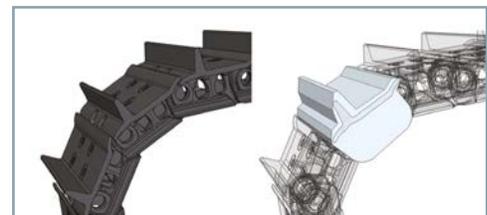
Duplicate Body allows designers to copy and pattern simplified solid bodies, consisting of single or multiple bodies, quickly representing a large-scale layout of common and proprietary components.

Using a new display technique in Solid Edge ST6, assembly display performance during view pan, zoom and rotate has been increased up to 2x without view quality degradation.

Enhancing assembly modeling
Designers can now drive frame paths using edges of part components placed in an assembly.

Peer elements, such as edges and center points, can be located when sketching geometry within an assembly context. Boolean subtract modifies part geometry from the assembly.

Making world-class drafting even easier
Drawings are still king of the product development world, and powerful design documentation becomes even easier in Solid Edge ST6 Drafting.

Handling large numbers of 2D entities is much faster; hatch display as well as scroll, zoom and pan performance is greatly improved, making for more efficient drawing production. Also, you can undo supports in up to 500 transactions.

Documenting electrical and piping layouts is more efficient, as schematic blocks can be edited in place. All surrounding geometry is displayed for reference and can be added or removed from the block.

Solid Edge provides automatic generation of schematic block tables (or parts lists) in drawings. Select all of the blocks on a drawing sheet within a drawing view, or select them manually, including fence select. Information such as block names, properties and labels can be displayed, and balloons can be created automatically.

Table customization has been advanced by allowing direct, in-place modification of text font and justification. Also, individual cells can be overridden within the table. This flexibility enhances the creation of company standard parts and materials lists.

The improved drawing view alignment in this release greatly enhances the drawing

appearance. Any two views can be aligned using associative key points or drawing view centers.

Working in extended views has never been easier now that derived break lines in broken views are associative to the source. Any changes made to the source will automatically update the broken view lines.

Another significant advancement in detailing provides automatic arrangement of dimensions, either individually or by using one of two bulk selection methods: fence select, or identify a drawing view and grab all dimensions in that view. Options provide designer flexibility in arrangement behavior.

Drawing cleanup is a snap as designers can associate aligned linear dimensions and move them concurrently. A combination of chain and stacked groups can be aligned. This behavior is also available for PMI and sketch dimensions.

Automated centerlines, center marks and callouts can be retrieved for slots, saving valuable time.

Bolt hole circles are easier to identify, define and modify in this latest release. Circles can be located using arcs, hidden lines or even hidden holes. They can be created by two diameter points and can be trimmed to form a partial hole circle.

Parts list balloon positioning has been greatly enhanced. Designers can specify balloon location as well as clockwise or counter-clockwise item numbering sequence, and Solid Edge will automatically generate the sequence.

The alignment shape command introduces another improvement in model detailing. You can align balloons and geometric dimensioning and tolerancing (GD&T) symbols to linear, rectangular or irregular shapes. Reposition the annotations by dragging or modifying the alignment shape.
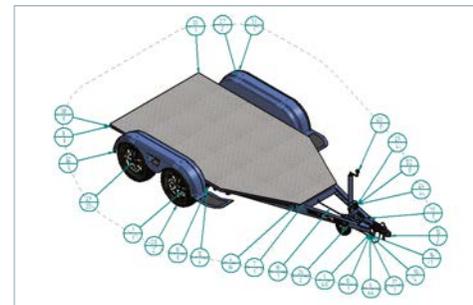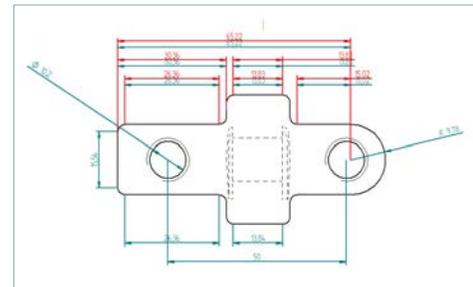
The drawing view wizard has never been easier to use, with an intuitive command ribbon, dynamic drawing view preview and the ability to save view common placement settings for re-use. An enhanced shortcut menu speeds drawing sheet and sheet tab creation and manipulation. Specify a unique color scheme for various sheet types. Embedded documents, such as spreadsheets, presentations and word processing files, can be edited in the native user interfaces without exiting the drawing.

Viewing and collaborating

Solid Edge ST6 introduces several exciting new ways to visually collaborate with colleagues.

Create and share how-to videos using direct access from the Solid Edge YouTube docking pane. Designers can record a modeling session, upload it to YouTube and even search YouTube for other Solid Edge videos.

The Solid Edge Mobile Viewer supports Android tablet devices of varying sizes. In addition, the Mobile Viewer is now available on the iPad Mini. Extending visual collaboration, multiple-sheet drawings can be viewed on all supported tablets (available in Solid Edge MP 1).
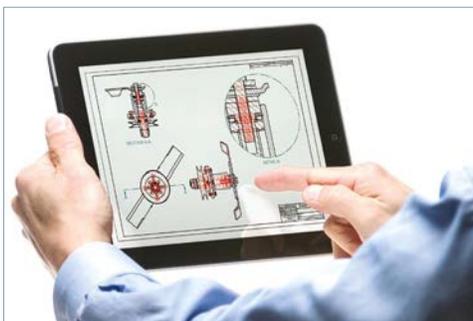
Providing simulation design optimization and validation

Minimizing material costs is a crucial factor in product development. Designers strive to deliver safe and reliable products that meet all specified customer requirements while using the least amount of material. Improving the fit and function of parts is an important step in this process, and Solid Edge ST6 delivers two automated methods for model validation, using either one or multiple variables.

Optimal design often depends on the ability to iterate a single independent variable in order to reach a predefined physical property target value (such as mass, volume or surface area). The Goal Seek functionality is now available in 3D and can be used to leverage physical properties in the variable table, which are available to participate in an iterative solve, both in synchronous and ordered modes.

The optimization functionality within Solid Edge Simulation provides designers with what-if scenarios predicting how a part will react to specified loading conditions while one or more independent variables are iterated over a range of values.
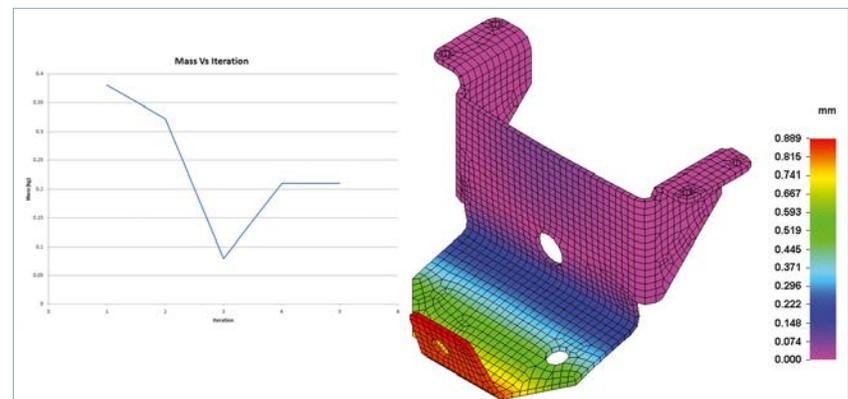
Display of a mesh is shown outside of the mesh command, which facilitates visualization of parts under analysis within an assembly.

The new Re-mesh command permits meshing of individual parts instead of an entire assembly.

The mesh quality status indicator now applies to each part in an assembly.

Solid Edge SP

With the release of Solid Edge ST6, the Solid Edge SP visual approach to managing design data has been further developed and delivers on the promise of speeding completion of design projects. Originally released as Solid Edge Insight™ XT with ST5, this solution has been renamed Solid Edge SP to emphasize that it is based on Microsoft SharePoint and delivers outstanding collaboration capabilities within design departments, across different departments and with external suppliers and customers.
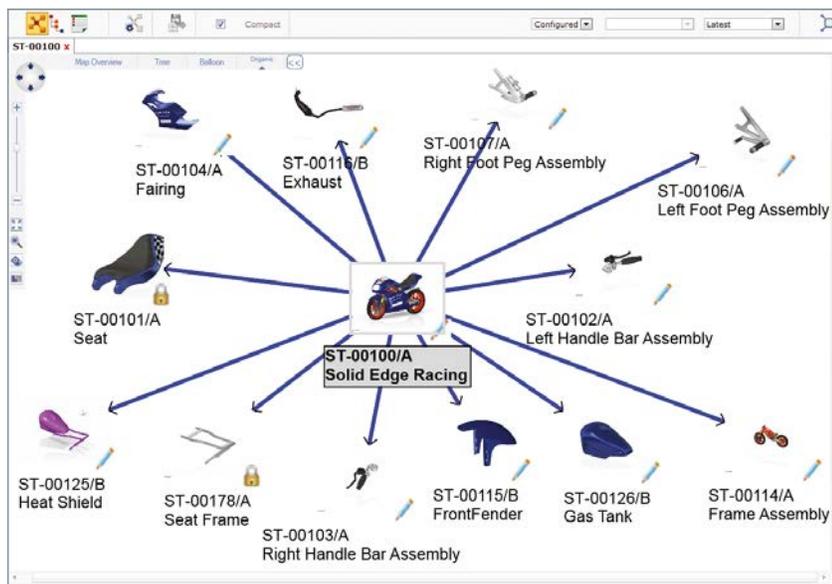
Significant improvements in the Relation Browser include an expanded preview window that displays all the documents, revisions and properties data that are associated with the selected part; and supports fast task completion by means of right-click command execution on these documents and revisions. In addition, thumbnail images can now be used in place of standard icons to show the Solid Edge part and assembly models that are referenced in the hierarchical, balloon and organic product structure displays.

Reporting on engineering change requests (ECRs), engineering change orders (ECOs) and projects has been expanded so that managers can quickly see the status of these critical engineering tasks and identify potential delays at an early stage. Out-of-the-box workflows for change management have also been improved and integrated more effectively with Microsoft Outlook for faster completion of these everyday engineering tasks.

Speeding adoption of Solid Edge

Design firms often face the possibility of replacing their computer-aided design (CAD) system. You may need to adopt a new tool design solution for any number of reasons: management realignment, new sourcing requirements, the need to evolve from outdated tools, or uncertainties in the direction of a current CAD vendor. However, the process of transitioning data between competitive CAD systems can hurt your bottom line. Data migration often introduces design delays due to loss of original model intelligence. Product development workflows are hindered by unfamiliar interfaces, command names and modeling methods. Solid Edge greatly eases the transition from other CAD systems.

For years, Solid Edge has provided bulk data migrators for Autodesk Inventor software, Pro/E and Siemens NX™ I-deas™ software. The latest release of Solid Edge migrates SolidWorks assemblies, parts and drawings as well. This user-friendly, simplified utility for transferring parts, assemblies and drawings retains key intelligence, such as assembly constraints, hole features, pattern recognition, part materials, alternate positions and more, promoting increased re-use of existing data.

Command finder has been updated to coincide with the latest competitive command lists, giving designers more flexibility in establishing familiar workflows within Solid Edge.

Customizable themes allow designers to tailor the Solid Edge interface to mimic the

layouts of select 2D and 3D systems. Therefore, the user interface experience, including command bar orientation, docking pane location, PathFinder configuration and sketch/profile environment behaviors, are more familiar.

Solid Edge incorporates magnet lines, automatic dimension alignment, in-place editing of tables and other familiar functionality to shorten the transition from other CAD systems.

Design better – Solid Edge ST6
Solid Edge ST6 satisfies over 1,300 customer requests, confirming its position as the industry-leading design solution. This new release includes expanded tools for

stylized surfacing, efficient assembly modeling, stamped metal part design, faster design optimization and world-class drafting. Solid Edge SP provides advanced visual tools for understanding and managing complex engineering data. Increasing numbers of designers and engineers are discovering the value of Solid Edge. It provides a seamless transition from competitive systems by promoting re-use of much of the inherent intelligent model data. With Solid Edge ST6, you can reduce costs, maximize production efficiencies and take product development to a new level.