UGS VELOCITY SERIES

Solid Edge version 20

Design collaboration, plant equipment design and engineering productivity for the entire value chain

fact sheet

Siemens PLM Software

www.siemens.com/solidedge

▶ **Summary**

Solid Edge® version 20 software continues to drive design collaboration across all points of the value chain in support of PLM. Improvements in cPDM integration promote collaboration across multiple sites. New massive assembly design features broaden Solid Edge's footprint in the plant equipment design market. And hundreds of user-suggested enhancements take engineering productivity to new levels. With version 20, Solid Edge builds on its reputation as the most cost-effective, complete and open solution for hybrid 2D/3D design and collaboration on the market today.

Benefits

Allows efficient access to a central database from remote sites

Shortens design cycles by creating new design variants in less time

Eases the transition to 3D

Adds parametric intelligence to imported data

Provides more collaboration options for OEMs and suppliers

Visualizes modifications to imported 3D data – in real time

Increases massive assembly performance

Opens massive assembly drawing in seconds

Keeps BOM and assembly structures organized

Solves 2D engineering scenarios in real time.

Streamlines re-use of common features

Creates a single drawing for an entire family of parts

All of which lead to lower costs, improved quality and a shorter time-to-market

Key messages

Design collaboration across all points of the value chain in support of PLM

Massive assemblies broaden the footprint in the plant equipment design market

Engineering productivity

Solid Edge version 20 is the latest release of Siemens' hybrid 2D/3D CAD software and the premier design-centric solution in the mid-range CAD industry. Version 20 continues to enhance collaboration throughout the value chain, addressing the needs of midsize companies to access information from remote sites. Version 20 extends massive assembly capabilities to the next step by making it even easier to lay out factory floors with actual machine geometry, as well as design large assemblies in industries like heavy industrial vehicles, large mechanical machinery and process and power. Also included are innovative, practical tools for real-time problem solving that help designers and engineers become more productive and shorten design cycles.

Design collaboration across all points of the value chain in support of PLM

As company infrastructure and supply chains spread across the globe, the need for design collaboration has never been greater. Building on previous design collaboration tools for Solid Edge, version 20 further eases collaboration throughout the value chain by integrating support for the new Teamcenter® Service Oriented Architecture (SOA) software, while adding new structure editing capabilities for the Solid Edge Embedded Client.

- Solid Edge is the first CAD application to support Teamcenter Service Oriented Architecture (SOA) providing robustness, performance and support for the new Teamcenter architecture and allowing access to a central database from remote sites via company wide area networks.

- A new Structure Editor provides a dedicated interface for re-using existing assemblies to create new projects in a managed Teamcenter environment. Included with the Solid Edge Embedded Client, Structure Editor allows you to

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quickly clone existing assemblies, revise, save-as or re-use portions of the assembly tree, and it provides the ability to quickly re-purpose data within a managed environment to leverage customer assets.

Features

Support for Teamcenter Service Oriented Architecture

Structure Editor for Solid Edge Embedded Client

Improved AutoCAD translation

Catia v5 add-on bi-directional translator

Ability to read Pro-E Wildfire 3 files

Ability to read STL files

Auto constrain of imported geometry

Dynamic preview in direct edit

Assembly zones

Component grouping

Drawing review mode

Reduced draft file size

More 64 bit

Goal seeking

Feature grouping

Tabulated drawings and more

In addition, enhancements to translation tools and new capabilities help companies transition from 2D to 3D, provide more collaboration opportunities to companies who don't have identical design applications and add more intelligence to imported data.

- To ease the transition from 2D to 3D, maintain existing AutoCAD drawings and aid collaboration with supply networks using AutoCAD, enhancements to Solid Edge's AutoCAD translation capabilities ensure drawings are displayed in Solid Edge as they are in AutoCAD and vice versa. With version 20, Solid Edge now imports multisheet drawings, more dimension types, XREF's, improved font formatting and color 7 background switching. Solid Edge now exports images and 'smart frame' objects such as blocks, embedded documents, Word, Excel etc.

- Adding to an impressive array of translation and migration tools, Solid Edge version 20 opens up more collaboration options with a new add-on bi-directional translator for Catia v5; also enhancements to the Pro-E translator allow Solid Edge to read Wildfire 3 files; and a new ability to directly read the stereolithography (STL) rapid prototyping file format. The STL capability enables companies to open these files in Solid Edge without the need for third-party translators or viewers, and share information without concern for which CAD system was used to create the data.

- A unique new auto constrain feature quickly adds intelligent assembly constraints to imported 3D assembly designs, providing an automated method of adding parametric relationships to non-constrained 3D part models within an assembly, irrespective of where they came from. OEM supply chains are able to assemble their designs in Solid Edge using both imported and Solid Edge native data and then perform advanced operations on the combined assembly such as full motion studies.

- A new dynamic preview mode for direct editing provides real-time visual feedback, while editing imported models without the need for their original history tree.
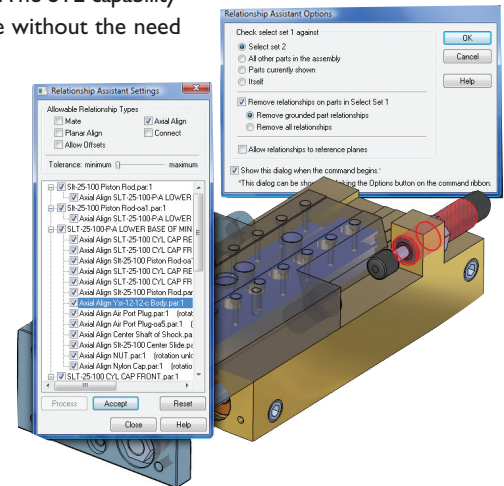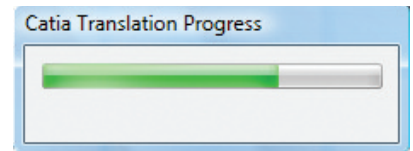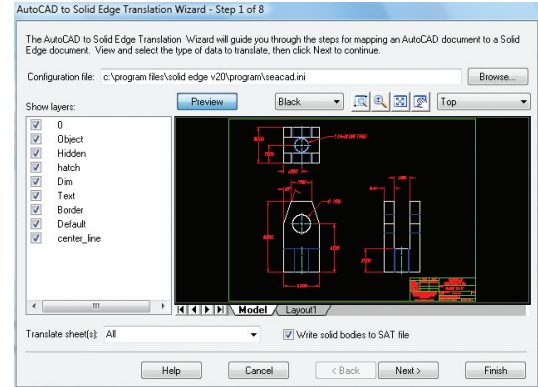
Massive assemblies broaden the footprint in the plant equipment design market

For some time now, advanced assembly design capabilities in Solid Edge have been used by many companies such as VAI, Anglo Platinum and Krones to lay out their factory floors and design equipment for their plants. Solid Edge, a leader in massive assembly design with many customers creating assemblies of over 100,000 parts, now takes the next step to making it even easier to lay out and document factory floors. With new capabilities to open and work with actual machine geometry in the context of large assemblies and their associated drawings, Solid Edge further addresses the needs of industries like heavy industrial vehicles, large mechanical machinery, process plant equipment and power.
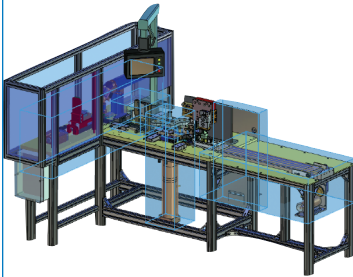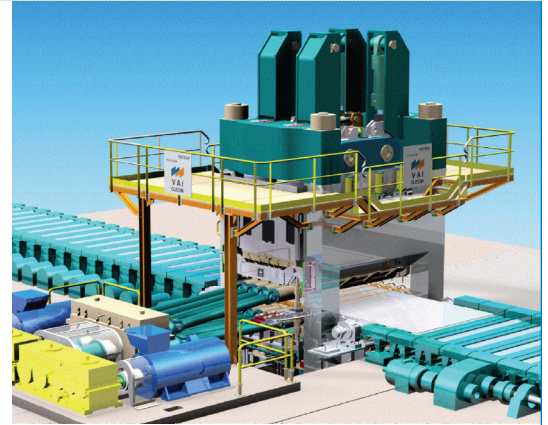

- Solid Edge is the first mid-range modeler to take advantage of zones. **Zones** make working with massive assemblies even more manageable and boost performance, allowing designers to define a permanent range box to isolate areas of large designs they are responsible for at a subsystem level. Intelligent caching allows retrieval of only the parts in the zone, without having to open component files to determine if they lie in the zone or not. This creates a significant performance boost when switching zones or opening a massive assembly.

- A new capability for **component grouping** provides even more design flexibility by allowing designers to efficiently collect Solid Edge parts and subassemblies into organized groups, while leaving BOM and assembly relationships intact. Teamed with zones, component grouping speeds up selection sets for animation, move part, fasteners and query selection among other tasks.

- To help designers lay out factory floors and/or machine designs, a new manual **component positioning** capability allows existing subassemblies to be quickly copied, moved, rotated or arrayed within an assembly. To remove any restrictions, assembly relationships to existing components are ignored, while those integral to the subassembly remain intact. Subassemblies can be simply dragged to a new location or precisely moved using coordinates, vectors or exiting components.

- Automatic part unloading manages valuable system resources with no user effort by sensing automatically which parts are in use and dynamically loading or unloading their geometry from memory to improve performance. This feature is especially helpful when working with massive assemblies.
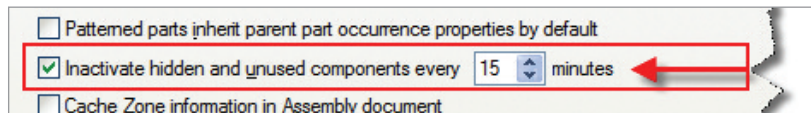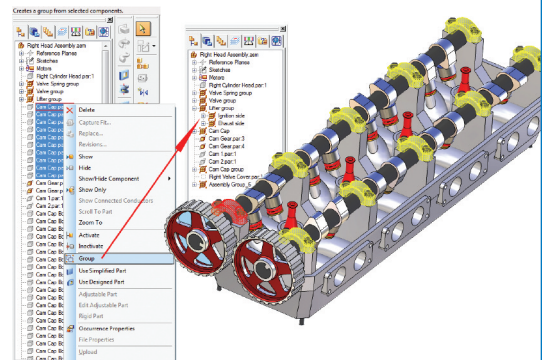
- Solid Edge's complete 2D drawing tools are augmented with a new '**drawing review mode**' that allows rapid opening of a drawing for reviewing, measuring or printing regardless of how big or detailed the drawing is. Continued reductions in draft file size means drawings take up less storage space and open more quickly.

- Continued support for Windows **64 bit OS** architecture allows designers creating massive assemblies and their associated drawings to benefit from increased available resources.

Engineering productivity

Solid Edge has always excelled at delivering process-specific tools and applications, like sheet metal and wire harness design that speed up design cycles. Some of these tools, like engineering reference which designs parts using engineering calculations, were designed specifically to address issues faced by engineers. Version 20 introduces a brand new "**goal seeking**" capability for engineers to solve engineering problems that are more easily expressed graphically in 2D and in real time.
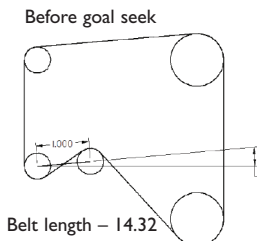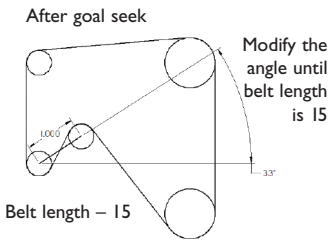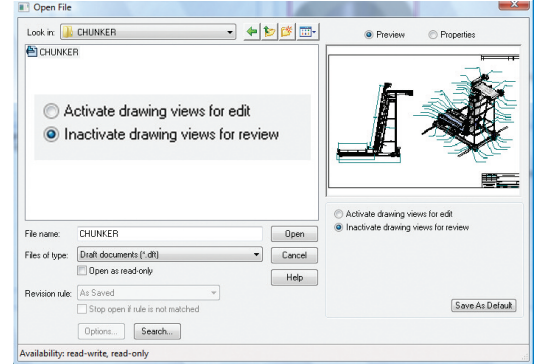
- Solid Edge Goal Seeking takes graphical engineering problem solving to a new level and avoids labor intensive iterative calculations by allowing design engineers to perform two-dimensional what-if engineering calculations, with a combination of 2D parametric geometry, mathematical formulas, variables and part properties. Knowing the target value of an engineering calculation, Goal Seeking allows users to set certain parameters, while the system varies other factors to achieve the desired result. Goal seeking concepts, familiar to many in Excel spreadsheets, have now been applied to engineering and design by allowing engineers to solve problems that are best expressed graphically. Results can be used to drive 3D geometry in a true hybrid 2D/3D design environment.

After goal seek

Modify the angle until belt length is 15

Belt length – 15

Before goal seek

Belt length – 14.32

Solid Edge has a long history of delivering leading edge tools that enhance productivity, including such innovations as Rapid Blue shape design, process-oriented design tools, systems design and direct editing. As always Solid Edge excels at adding practical, productive enhancements suggested by our users. For version 20, over 170 enhancements have been added to part design and drafting (some, for example Goal Seeking, are included in our Solid Edge Free 2D software) that will drive further productivity gains. Here are just a few:

- **Feature grouping** in Solid Edge allows design engineers to model with more efficiency and clarity, enabling them to be more productive and speed up change requests. Feature grouping is an efficient way to organize and understand part features used to describe Solid Edge part models that reduce the feature history and group multiple features used for a single detail to speed up feature library creation. Fast feature reordering with validation checking provides robust design integrity.
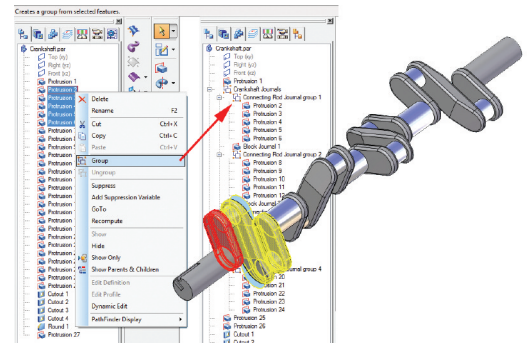
• **Design sensors** and variables have helped many Solid Edge customers make fast design changes, re-purpose existing designs and ensure products are designed right the first time. The latest improvements to Sensors provide enhanced notification graphics with detailed advice that identify design violations as they occur. New variable limits allow engineers to define limits for their Solid Edge variables or define that the variables must have a discrete list value. By notifying the user when variable inputs are out of limit or not on the specified list, greater engineering integrity is achieved.
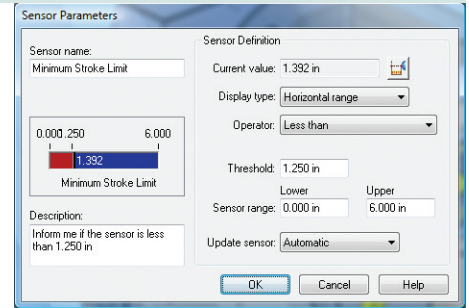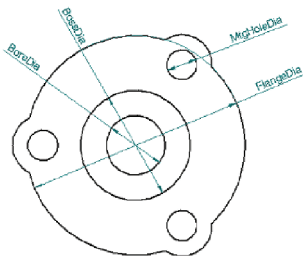
• **Tabulated drawings** eliminates the need for multiple drawings to describe each individual member of multiple part families. One drawing can now be used to describe them all, improving the opportunity for re-use and decreasing the need for redundant documentation.

• **Feature library tips** capture and provide advice on design intent when re-using knowledge capture during feature library creation.

In addition to all the above feature enhancements and staying consistent with its "native Microsoft" strategy, Solid Edge version 20 now supports Windows Vista, Internet Explorer 7 and Direct 3D graphics, allowing Solid Edge to take advantage of improved graphics performance and improved search facilities.
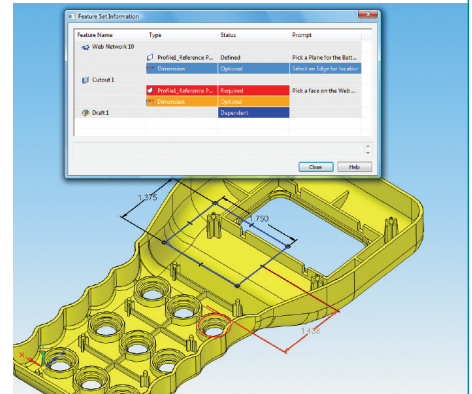
Solid Edge is the core design component of the UGS Velocity Series™ software portfolio of modular yet integrated, preconfigured and easy-to-deploy design, manufacturing and data management solutions that also include applications for cPDM, analysis and CAM.

For version 20, Solid Edge brings new focus to three key design areas benefiting both designers and engineers: driving design collaboration across all points of the value chain; enhancing plant equipment design; and lifting engineering productivity to new levels.

For more information, contact your local Solid Edge representative:

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