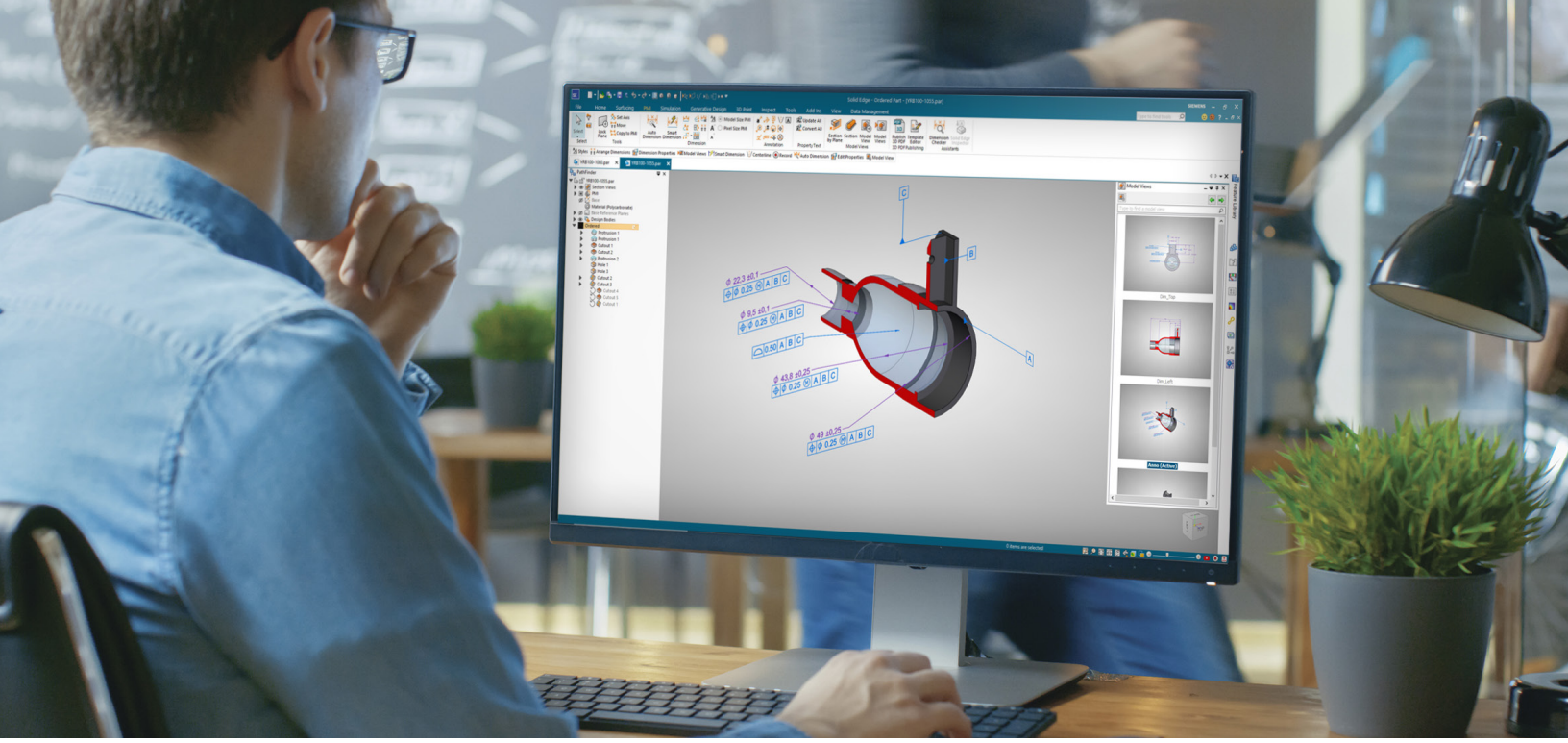

DIGITAL INDUSTRIES SOFTWARE

Solid Edge Model Based Definition

Enabling paperless 3D engineering communications

Benefits

- Realize significant gains in manufacturing productivity
- Reduce, or eliminate, traditional 2D drawings for the efficiencies of paperless design
- Provides easier-to-understand manufacturing documentation
- Manages engineering documentation with suppliers using a non-proprietary solution
- Improves supplier response time
- Reduces scrap and rework

Summary

The Siemens Solid Edge® Model Based Definition software module enables the production of a complete digital definition of parts and/or assemblies using 3D models, allowing you to spend less time on engineering documentation and drive downstream validation. This can result in a paperless design office that provides less amendment work, faster time to manufacturing, quicker documentation and clearer manufacturing communication.

Model-based definition reduces the need for traditional 2D drawings because the information required for manufacturing is included in the 3D model. Instead of relying on the traditional method of supplying a 3D model with a 2D drawing that must be interpreted, model-based definition conveys geometric information and annotations in a single, unambiguous source of truth – the 3D model.

Model-based definition also provides more effective communication between engineering and manufacturing. Annotated 3D models are much easier to understand than complex 2D drawings and can reduce errors and time spent on

Features

- Complete digital characterization of parts and assemblies
- Template-based 3D PDF creation
- Leverages existing model views and PMI
- PMI support for STEP AP242
- Compliance with industry standards

engineering documentation. 3D models also drive improved validation and manufacturing efforts.

With Solid Edge Model Based Definition, manufacturers and their suppliers can manage engineering documentation efforts digitally using the most cost-effective, nonproprietary solution for their business needs. The software enables the exchange of product and manufacturing information (PMI) between manufacturer and supplier (or engineering and manufacturing departments) without requiring them to use the same computer-aided design (CAD) software.

Reducing the need for traditional 2D drawings

Digital communication accelerates design-to-manufacturing processes. With Solid Edge Model Based Definition, 3D models that include PMI and associated metadata are communicated via the universal 3D PDF, allowing interactive viewing of manufacturing data. The PMI information used to enhance the 3D model is the same information leveraged to create the 3D PDF file, precluding the need to create additional PMI documentation. When required for certification or compliance, paper documentation can be easily produced in the 3D PDF format and password protected for additional security.

3D PDF files can be published directly from the drafting environment. Templates define the layout of the published PDF with the number of pages in the template corresponding to the number of pages in the PDF file. Logos and other common information may be added to the background sheet. Editable fields enable users to add notes and thumbnail previews of the model views to the document.

Solid Edge Model Based Definition uses a configurable template with interactive 3D output. Information that can be converted to 3D PDF for transfer includes parts, parts in assembly (both active and inactive) and inside/outside model views. Drawing annotations can be published directly with the 3D model using the universal PDF format and can refer to multiple geometries. Referenced geometry can exist with annotation terminator elements and can be selected and edited. Geometry is highlighted when a PMI annotation is selected for modification. These 3D CAD drawing enhancements along with simplified creation of section views greatly reduce the time required for documentation.

The software imports and exports PMI using the international standard for the exchange of product model data (STEP AP242), which has a side benefit of supporting long term data archival and retrieval (LOTAR) requirements. This common data communication protocol allows manufacturers to send data to downstream suppliers without sending entire proprietary CAD files or forcing suppliers to maintain matching CAD software to read files. This exchange assists

in providing a continuous digital thread throughout the entire model-based process. The product also supports the open, CAD-independent JT™ data, a lightweight 3D model format that is widely used for product visualization, collaboration and data sharing.

Solid Edge Model Based Definition enables compliance with industry standards such as military standard (MIL-STD-31000B), American Society of Mechanical Engineers (ASME) Y 14.41, International Organization for Standardization (ISO) 16792, ISO 1101 and ISO 1405, German Institute of Standardization (DIN) ISO 16792, and Chinese national standards (GB/T) 24734. Support for these standards can give users a competitive advantage, as many industries require adherence to standards requirements for digital data-based processes.

Extending value

Model Based Definition, an add-on product for Solid Edge 3D Design software, communicates directly with Solid Edge CAM Pro and additive manufacturing applications.

Solid Edge is a portfolio of affordable, easy-to-deploy, maintain and use software tools that advance all aspects of the product development process – mechanical and electrical design, simulation, manufacturing, technical documentation, data management and cloud-based collaboration.

Minimum system configuration

- Windows 10 Enterprise or Professional (64-bit only) version 1809 or later
- 16 GB random access memory (RAM)
- 65K colors
- Screen resolution: 1920 x 1080
- 8.5 GB of disk space required for installation

Siemens Digital Industries Software

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