Creo™ Package Overview for Small- and Medium-Sized Businesses

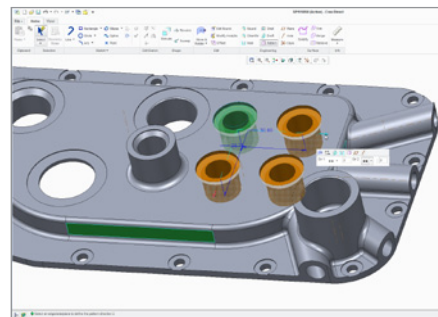## POWERFUL 3D CAD SOLUTIONS OPTIMIZED FOR YOUR ENGINEERING TASKS

PTC delivers the most scalable range of product development packages on the market today. Creo 3D CAD packages are optimized to meet the challenging demands of engineering teams in companies of all sizes, including small- and medium-sized businesses (SMBs). No matter which package you choose, you'll get the industry's fastest, flexible and most comprehensive tools. Creo apps are easy to use, competitively priced and always upgradeable — to meet the varied needs of your specific engineering design tasks and business requirements.

The right set of 3D CAD solutions — on a single, integrated platform

Product design firms and manufacturing companies are under constant pressure to develop more products in less time, without sacrificing innovation or quality. This is especially true for smaller- and medium-sized companies that rely on lean, efficient engineering teams to get products to market with fewer resources and at a lower cost.

Creo provides engineers the right tools needed to achieve the highest quality design in the fastest possible time. The unlimited flexibility and scalability of Creo also allow you to add new users and expand capabilities with new apps and extensions as your needs grow.

And since Creo is an integral part of PTC's Product Development System, your 3D CAD solution will seamlessly connect to PTC's other industry-leading solutions, including Windchill® for content and process management, Mathcad® for engineering calculations and Arbortext® for dynamic publishing.

Easily create and edit 3D geometry, including patterns, using Creo Direct.

Creo 3D CAD packages for SMBs

Creo provides a scalable set of apps and packages for design engineers that are optimized to meet a variety of specialized needs. Whether you require state-of-the-art 3D direct modeling, 3D parametric modeling, added design flexibility or advanced assembly design capabilities, you can select the right app or package to help you achieve your design goals.

Creo Direct

A fast, flexible 3D CAD solution that provides optimized capabilities for direct interaction with model geometry, Creo Direct allows you to easily create a new 3D design or leverage data from an existing design.

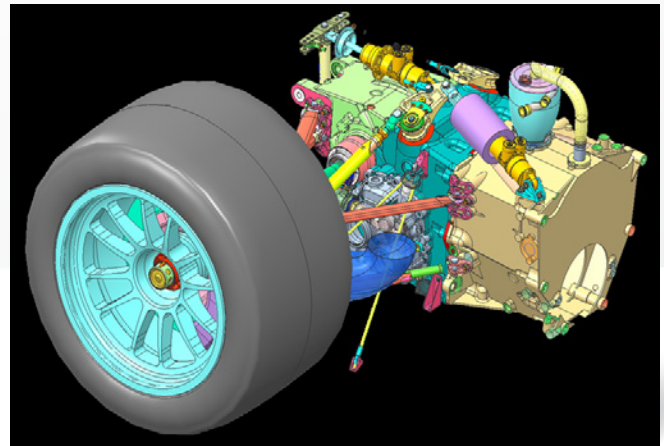Creo Direct helps you accelerate several product development processes by:

- Providing the speed and flexibility needed to streamline your concept design and bid proposal processes

- Allowing you to quickly edit 3D CAD data, thereby simplifying model geometry for downstream use in simulation

- Enabling a non-expert CAD user to create a 3D CAD design for tooling fixtures or capture design input from the field

	Creo Direct	Creo Parametric	Creo Essentials I*	Creo Essentials II*
Creo Apps				
Creo Direct	•			
Creo Parametric		•	•	•
Creo Extensions				
Creo Flexible Modeling Extension			•	•
Creo Advanced Assembly Extension				•

*Creo Essentials I and Creo Essentials II packages are available for PTC channel customers only.

Capabilities include:

- 3D Solid Modeling

  - Extrude, revolve and sweep geometry

  - Create drafts, chamfers, holes, shell and pattern geometry

- 3D Model Editing

  - Move and remove geometry

  - Modify rounds and other analytic geometry such as cylinders, cones and spheres

- 3D Surface Modeling

  - Create surfaces

  - Merge, trim and solidify

- 3D Assembly Modeling

  - Quickly move, add and delete components

- Interoperability. Import Data (Geometry, Annotations and other Metadata) from:

  - Neutral file formats (STEP, IGES, etc.)

  - Directly open files from other CAD systems, including SolidWorks® and Autodesk Inventor®

- Seamless Integration with Creo Parametric and other Creo Apps

  - Provides access to extended design and other capabilities

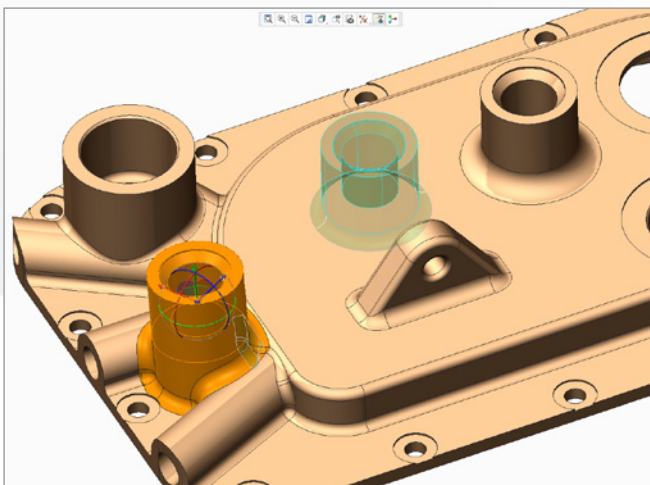 - Fully retains design intent when moving between applications and modeling modes

Creo Parametric helps you quickly create product designs of any size and complexity.

Creo Parametric

The foundational 3D parametric CAD app is powerful, easy to use, flexible and fully scalable. This stand-alone app features the industry's broadest range of 3D solid modeling and design capabilities for creating high-quality designs in less time. Creo Parametric helps you accelerate your concept design, detailed design and variant design and generation processes.

Capabilities include:

- Comprehensive 3D Parametric Solid Modeling

- Detailed Documentation: 2D and 3D Drawings

- Freestyle Design (Sub-divisional Modeling)

- Technical Surfacing

- Assembly Modeling

- Weld Modeling and Documentation

- Mechanism Design and Design Animation

- ModelCHECK™ Design Validation Tool

- Data Interoperability and Import Data Repair

- Integrated Web Capabilities

- Complete Library of Parts, Features, Tools and more

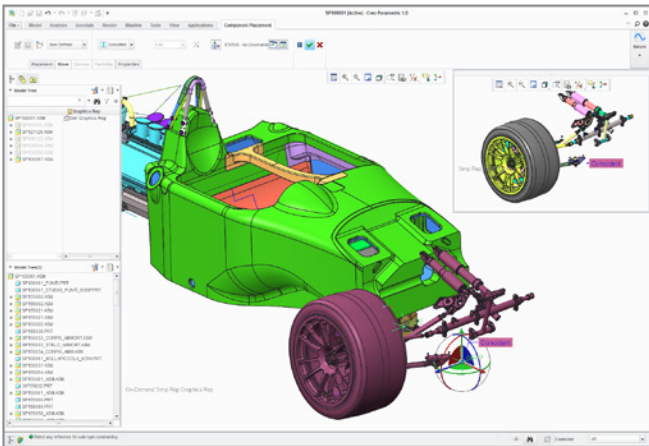Creo FMX helps you edit model data faster and more easily.

Creo Essentials I

The essential 3D CAD value package is powerful, easy to use, fast and flexible. This package features the industry's broadest range of 3D design capabilities and added flexibility to enable you to create 3D designs faster and accommodate late-stage changes more easily and efficiently.

The Creo Essentials I package helps you streamline your concept design, detailed design and variant design and generation processes.

The package includes:

- Creo Parametric

- Creo Flexible Modeling Extension (FMX), which provides the ultimate flexibility in editing 3D CAD geometry while fully retaining design intent

  - Geometry-based editing tools

    - Work directly with geometry

      - Fast, easy selection

      - Move geometry directly with the 3D CoPilot

      - Move parts by dimension or assembly constraints

      - Quickly attach parts

      - Edit rounds

      - Extend and split surfaces

      - Pattern and symmetry recognition

    - Preserves original feature definitions and accommodates references

    - Edit native Creo and geometry from other CAD systems

  - Ability to update your design edits (FlexMoves)

    - Geometry selection methods and edits are stored as parametric features

    - These features obey all standard parametric feature rules, including the ability to edit the definition

  - More efficient CAE and CAM workflows. Edit data faster for design optimization studies, downstream simulation or NC and tooling design tasks

Creo AAX helps you design and manage even the most complex assemblies with ease.

Creo Essentials II

This robust package is designed for engineers who need more advanced assembly design power. Creo Essentials II provides a broad range of 3D parametric modeling capabilities, unrivaled design agility with flexible modeling tools and the industry's leading large assembly modeling capabilities. Creo Essentials II helps you accelerate your concept design, detailed design and variant design and generation processes.

The package includes:

- All solutions in the Creo Essentials I package

- Creo Advanced Assembly Extension (AAX), which offers a host of specialized functions that make designing and managing even the most complex designs much easier

  - Top-down design tools

    - Create skeleton models

      - Plan assembly frameworks

      - Establish and enforce consistent design criteria

    - Create one-way associative models

    - Publish and control contact surfaces

  - Simplify large designs and improve performance with envelope parts

  - Reference viewer and reference control

  - Accurately define the assembly process

Creo solutions for other roles in product design

In addition to the products contained in the Creo 3D CAD packages for SMBs, PTC offers additional precision tools and packages that extend the power of Creo. You can leverage specialized capabilities for even more roles in product development, including industrial designers, analysts, manufacturing specialists and technical illustrators. Some examples include:

Electromechanical Design Engineers

Creo offers products optimized for 2D schematics and 3D cabling designs. You can also analyze the electromechanical performance of your design to ensure product safety. In addition, Creo provides industry-leading capabilities to help you visualize, compare and collaborate across MCAD and ECAD disciplines.

Analysts

Creo provides a range of simulation solutions to improve your verification and validation processes. In addition to advanced structural and thermal simulation capabilities, Creo provides the broadest set of virtual prototyping tools, including behavioral modeling, tolerance analysis, digital human modeling and electromechanical performance analysis.

Tooling Designers

Creo NC and tooling solutions offer powerful tools for machining, prismatic and multi-surface milling, tool design, moldbase design, NC sheetmetal, computer-aided verification of machined parts, plastic-filling process simulations, manufacturing work instructions and more.

To learn more

For more information on Creo products, please visit PTC.com/products/creo or contact your local sales representative.