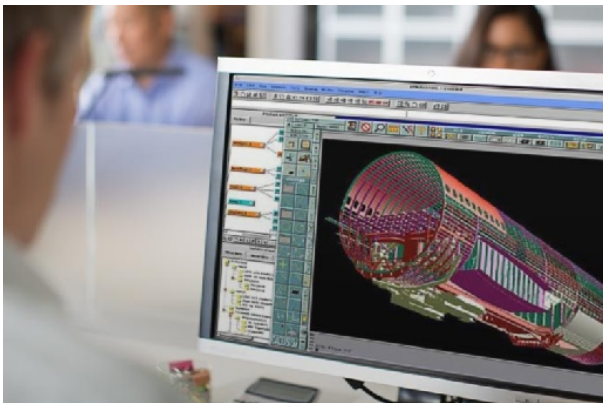
PTC CADDS 5 Modeling Foundation

Content rich, out-of-the-box functionality for 3D CAD design and drafting; acts as a baseline for any other PTC CADDS 5 modeling software option.



Solution overview

PTC CADDS Modeling Foundation is based on the adaptable, PTC CADDS 5 hybrid-modeling kernel, and includes a broad range of explicit and parametric 2D/3D, wireframe, surface and solid modeling tools, plus extensive associative dimensioning and drafting functions. The 3D modeling software environment benefits from a range of visualization representations, from fully shaded models, through hidden line to wire frame, all of which are integrated with full dynamic manipulation. Visibility and ease-of-use are further enhanced by the ability to clip views, allowing the user to view and work on a much-reduced dataset.

For CAD CAM assemblies, the package includes an adaptable, managed, single-user assembly design tool that enables the engineer to design or modify components, using any of the parametric or explicit geometry editing or creation tools within the context of the assembly. The user can switch dynamically between components, as the design evolves. Using either a top-down or bottom-up approach, the engineer can build moderately complex hierarchical assemblies. Users can modify existing assemblies, including imported parts or assemblies, such as those from Pro/ENGINEER, brought in with the unique Associative Topology Bus (ATB) from PTC.

To validate the 3D models, as well as ensure the 3D model meets design requirements, the package includes mass property calculation facilities. There are also a variety of interference detection capabilities, analytical one against one, facetted one against many, for rapid assessment of potential assembly and manufacturing problems for higher quality products.

To fully document a 3D design, the package includes a set of powerful, associative, automated detailing, sectioning and hidden line removal tools that can operate on AEC entities, surfaces or solid models. Bi-directional associativity between drawings and parametric models is also provided.

This package also includes the PTC CADDS 5 macro language, CVMAC, for automating many of the often-repeated tasks undertaken by engineers (e.g., automated drawing production routines, extracting BOM information). The automation of these tedious tasks can save significant time that can be used to work on other activities.

For engineers who do not need to change the model, but just document it, PTC CADDS 5 Drafting Foundation is also available.

Capabilities

This CAD software package includes the following PTC CADDS 5 capabilities:

- Hybrid Modeler
- Sketcher
- User-Defined Features
- Interference Checking
- Physical Properties
- Nodal Construction
- Dimensioning
- Solids Detailing
- View Part
- Parametric Multipart Design
- CVMAC Compiler
- Basic Shading
- View Model Space Clipping
- AEC Visualization
- Display Relationship
- Electronic CADDS Maintenance Tools

PTC CADDS 5 includes the following plotter support:

- CGM to CalComp
- HPGL1
- HPGL2
- PostScript
- Benson
- GPLOT
- Versatec
- HP-RTL

Hybrid Modeler

Provides production robust design modeling techniques for the creation and editing of parametric/explicit solid models, wireframe designs, sketches, profiles and basic surfacing.

Sketcher

Ability to napkin sketch the desired shape and then apply design constraints (parameters) appropriate to the way you want the model to be driven. Work in a robust action/object and object/action environment. Automatic trimming, 2-D Boolean and filleting are just some of the features of the sketcher that can be used in 2D or 3D model space.

User Defined Features

Supports feature-based modeling so that designers can describe designs using engineering or manufacturing terms such as holes, slots, and pockets. It eliminates the need to redefine commonly used design features. The user may select from a supplied library of STEP-format features or from their own user-defined features, which are easily created.

Interference Checking

Used for detecting and verifying interferences based on point-to-point measurement, minimum distance calculation, minimum clearance check, footprint of intersection, and solid of intersection.

Physical Properties

The following mass properties information can be calculated:

- Area, volume, mass, centroid, and surface area
- First moments, moments of inertia, products of inertia, polar moment of inertia, radius of gyration
- Principal axes, principal moments of inertia

Nodal Construction

Intelligent entities with the PTC CADDS 5 database that allow the creation of intelligent symbols and connections that can be used to produce network diagrams.

Dimensioning

Users can generate high-quality drawings that conform to DoD, MILSTD, ANSI, ISO, and JIS standards to meet the most demanding international specifications.

Point Entity

Suite of drawing production tools for fully detailing surface and solid models, providing hidden line removal and sectioning capabilities.

View Part

Provides instancing/viewing (multiple references) of other PTC CADDS 5 parts allowing them to be re-used within a current PTC CADDS 5 part.

Parametric Multipart Design

Bottom up or top-down, use a single user assembly design environment to build light weight hierarchical assemblies which minimize the use of system resources and duplication of PTC CADDS 5 parts.

CVMAC Compiler

Compile macro routines written using CVMAC.

Basic Shading

Provides simple view rendering capabilities:

- Create a 'snapshot' image rendering surface, solid and AEC models
- Toggle between fully shaded, hidden line or wire frame graphical representations to greatly improve visual understanding of the model data

Dynamically manipulate the view to see all aspect of the model data to check for surface conditions, interferences etc.

View Model Space Clipping

Create a Clip box within 3D model space of views to visualize only those items within, or crossing, the defined model space clip box.

AEC Visualization

- Enables users to produce detailed three dimensional, hidden-line-removed and shaded representations of PTC CADDS 5 nodal figures (AEC entities)
- Uses parameter-driven techniques to specify a set of instructions that define multiple versions of a component to represent its detailed image, its basic form, and its clearance volume
- Users can produce realistic images and reports that clearly identify interference and violations of user defined clearance boundaries

Display Relationship

Traces the relationships between intelligent entities within a part or drawing.

Electronic CADDS Maintenance Tools

Support the maintenance of legacy CADDS electrical and electronic part databases. These tools include the following plotter support: CGM to CalComp, HPGL1, HPGL2, PostScript, Benson, GPLOT, Versatec, and HP-RTL.

Platform Support

CONTACT US
For more information about PTC CADDS 5, visit
www.ptc.com/products/cadds-5