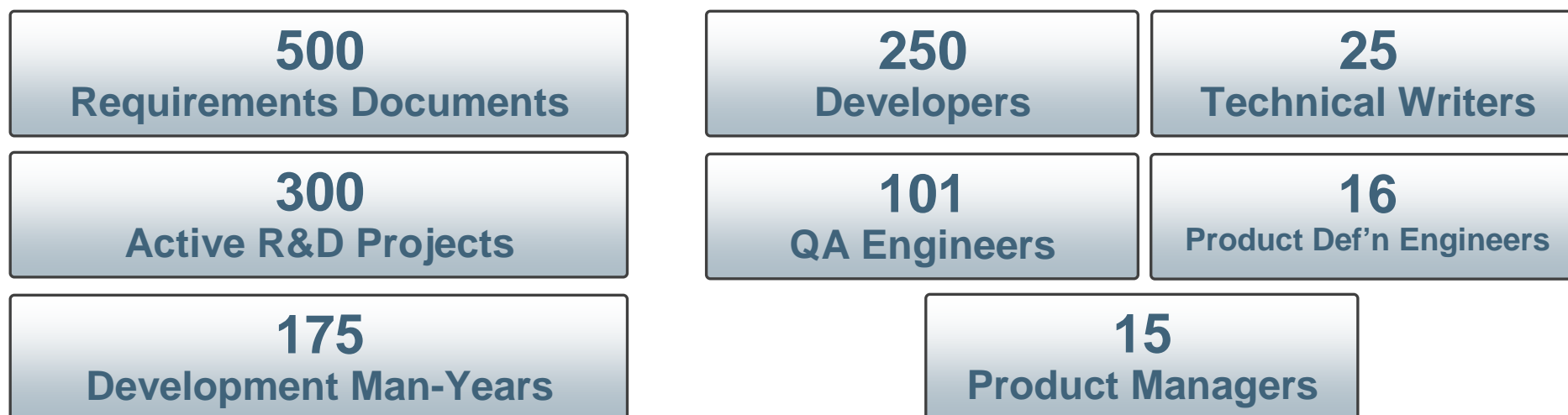




What's new in Pro/ENGINEER Wildfire 4.0

Introducing Pro/ENGINEER Wildfire 4.0



Statistics	Wildfire 3.0 Preproduction	Wildfire 4.0 Preproduction
Projects with Quality "Below Average"	15	0
Project Test Plan Completion	72%	99%
Functional Regression Tests Added	862	1,852
Bitmap Regression Tests Added	18	102
Objects Added to Compatibility Suite	652	1,756

Pro/ENGINEER Wildfire 4.0 Enhancements

Working with Assemblies

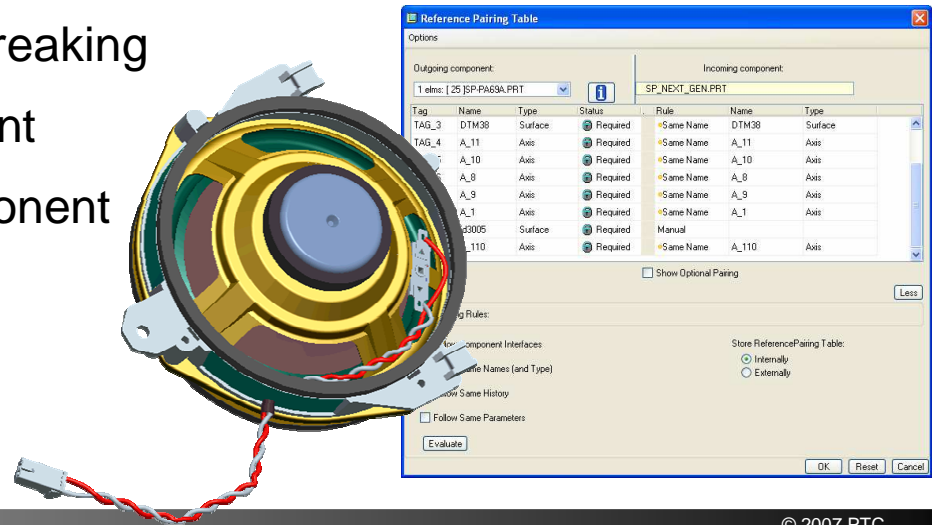
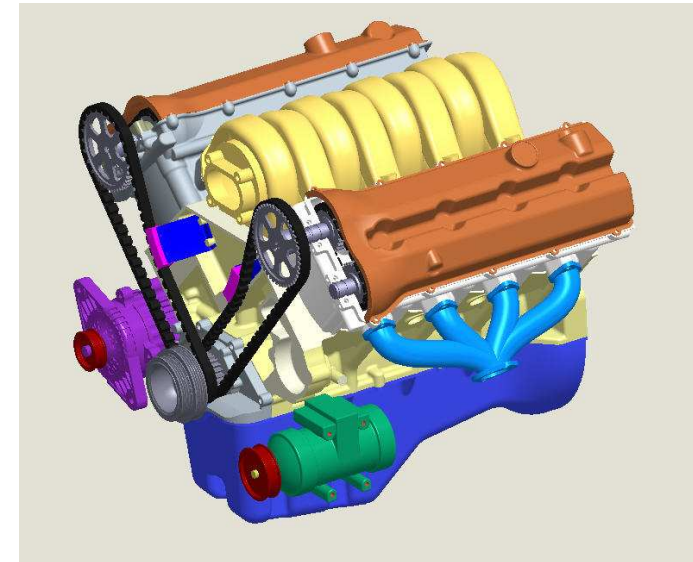
Automatic Memory Management while working with Large Assemblies

- Automatic, On-demand retrieval of the required levels of detail for assembly models
- Up to 40%* less memory consumed when working with large assemblies

Simplified Rep Preview

Usability

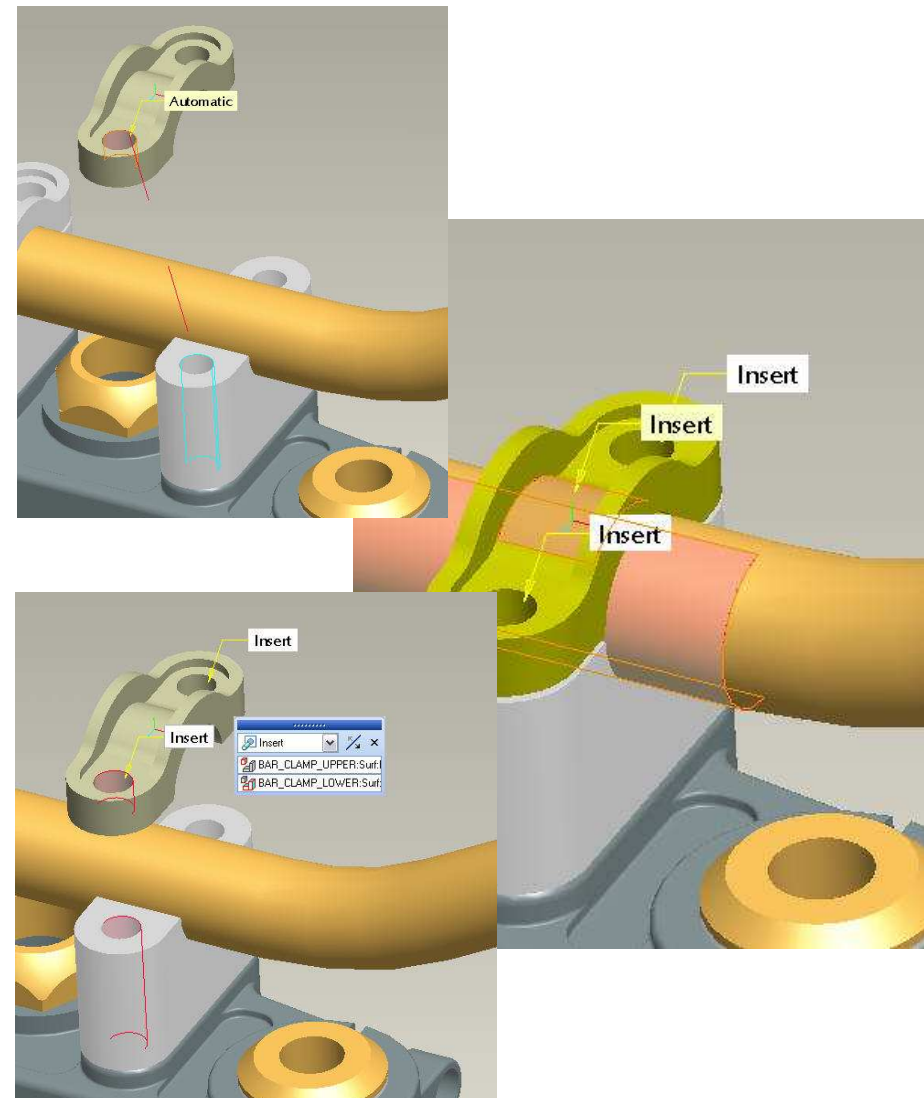
- All new Reference Viewer; reference breaking
- Clearer indication of “Active” Component
- Part/Assembly Replace with any component



Component Placement Enhancements

Improved constraint auto progression, expanded information, and new access points minimize the need to access the dash board slide up panel.

- The new value `move_then_place` for the configuration option `comp_assemble_start`. When set to `move_then_place`, the component being assembled attaches to the pointer. Move the component to the required location, click, and select references to place the component
- A preview color for a partially constrained model and a color for a fully constrained model.
- Reference handles indicating the need to choose a matching reference.
- Color coded constraint tags indicating the constraint status.
- Tooltips for constraint tags showing all references.
- Reversed reference display order. Model is displayed before entity.
- Improved constraint auto progression, minimizing the disruption of workflow.
- The Shortcut Placement panel. To open this panel, double-click the constraint tag or right-click the tag and choose Edit Reference.



Pro/ENGINEER Wildfire 4.0 Enhancements

Enhanced MCAD-ECAD Collaboration & Change Identification

New Module

Automatically identify changes between the MCAD and ECAD versions of a board design

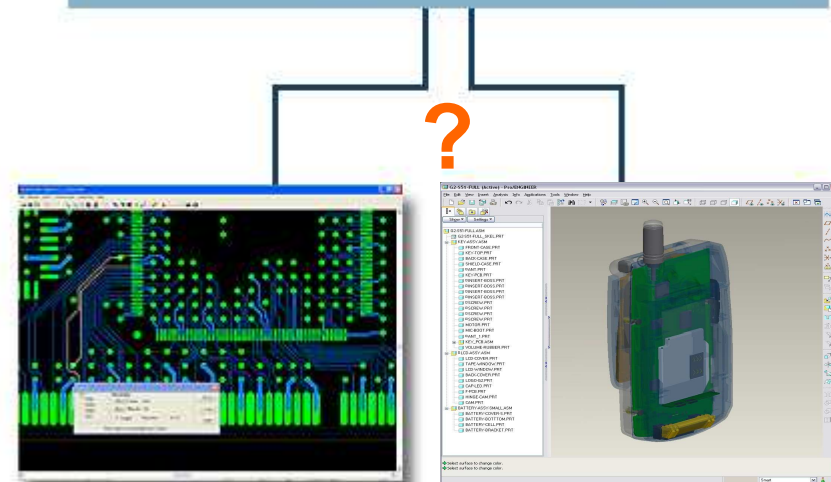
- Did ECAD move a mounting hole?
- Did MCAD change a height restriction?

Enable associative interface between MCAD and ECAD to resolve problems

- Collaborate in real-time
- Accept / decline changes in design tool

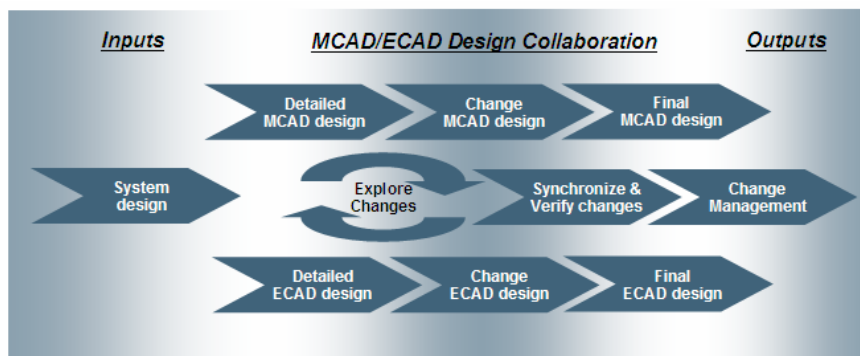
Leverages the following PTC technologies:

- Pro/ENGINEER
- InterComm / InterComm EDAcompare
- Windchill (optional)



InterComm
Or
ECAD Tool
(Mentor, Cadence, etc.)

Pro/ENGINEER



Pro/ENGINEER Wildfire 4.0 Enhancements

3D Drawings Support

Creating Content

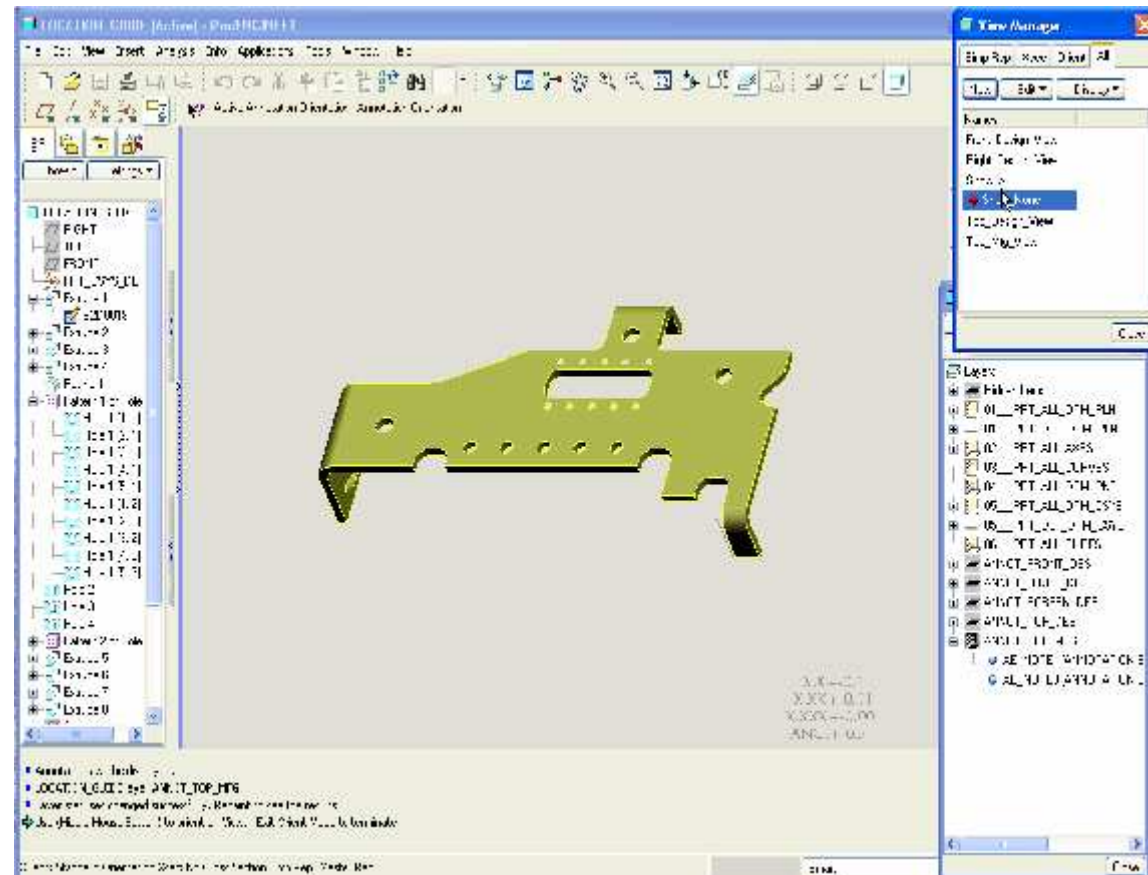
- Driving Dimension Annotations
- Annotations in design features
 - hole notes, weld symbols
- Flexible Annotation Planes
 - views, datums, screen plane

Organizing Content

- Layer status in View Manager
- Edit style of multiple annotation types
- Tables of restricted parameters

Using Content

- Associative Annotations from 3D to 2D
- View manager support in ProductView
- Local model propagation of annotations



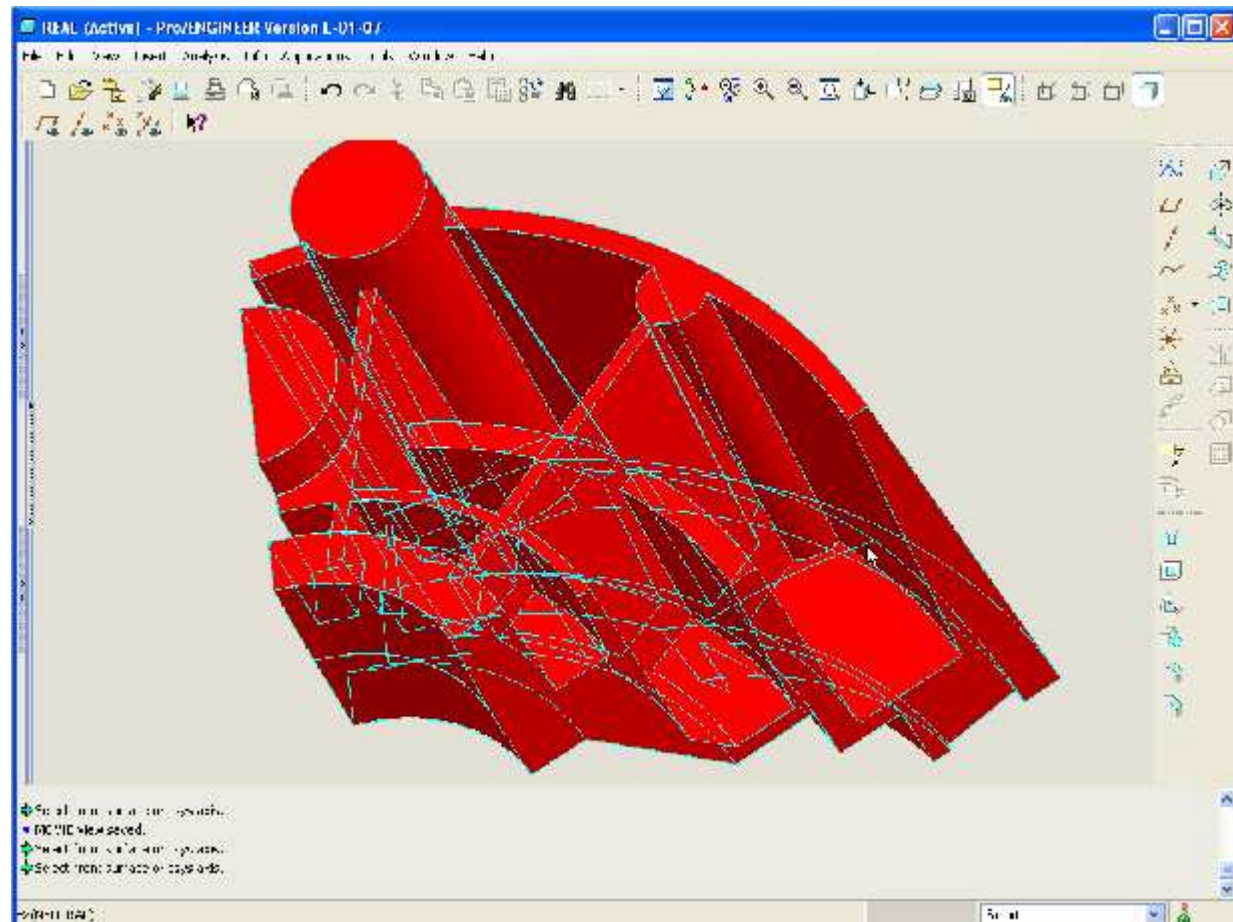
Pro/ENGINEER Wildfire 4.0 Enhancements

New Auto Round™ Feature

New User – Who Knows!?
Intermediate User – 90 minutes
Expert User – 20 minutes
Auto-Round – 40 seconds!

Auto Round

- Reduce the time to place round features on the model
- Create complex rounds more easily
- Automatically round as many edges as possible from the entire model or selected set
- Creates set of “features” whose sequence and edge sets are defined according to **internal logic to maximize the number of rounded chains.**



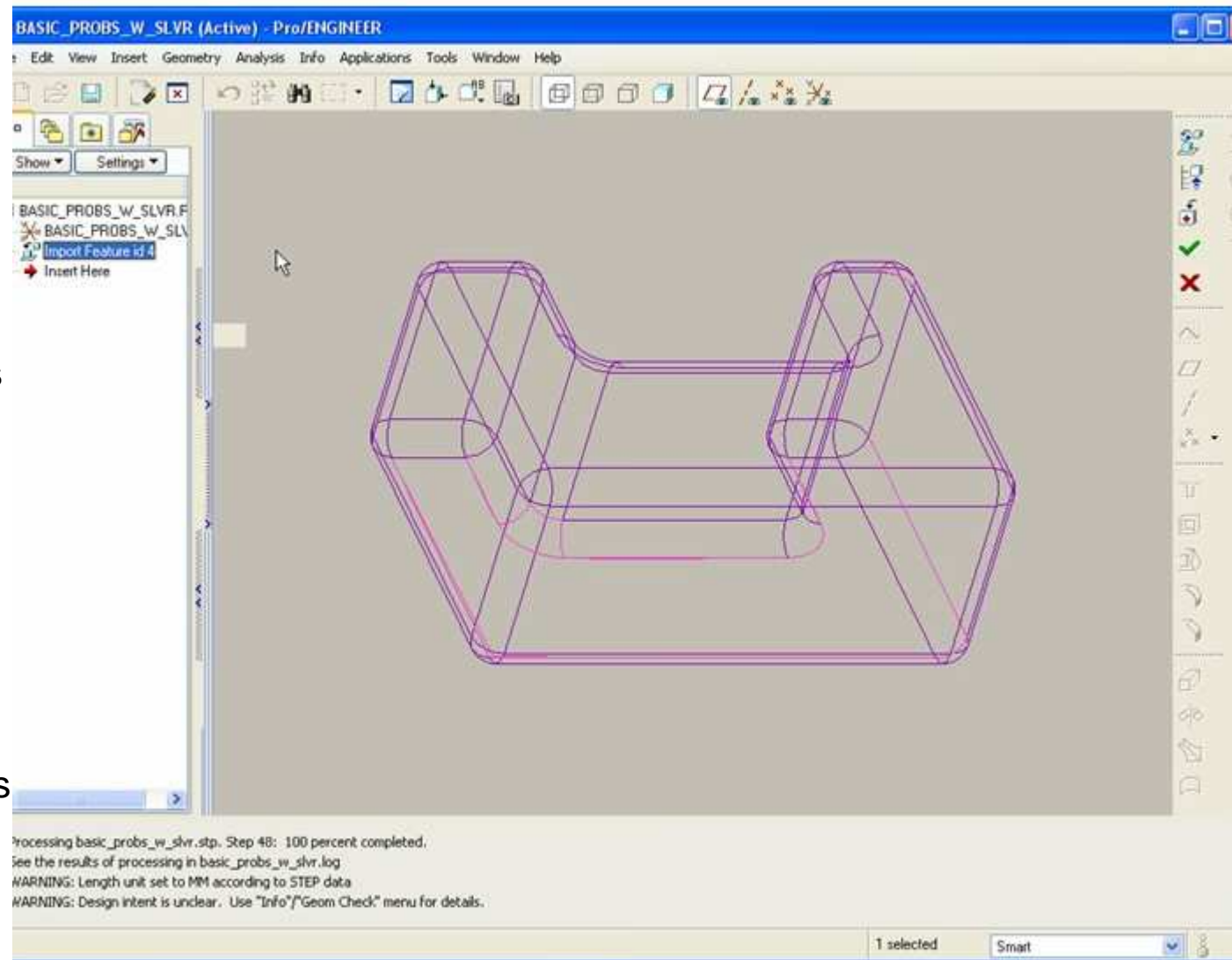
“The *new Auto Round feature was very impressive* & figured out & placed all the necessary rounds on one of our more complex fuel cell models in only a matter of minutes.”
~ *Pro/E Wildfire 4.0 Prequalification Testing Customer*

Pro/ENGINEER Wildfire 4.0 Enhancements

Working with Imported Data

New & Improved “Import Data Doctor”

- Modern, Consistent, Familiar UI
- Geometry/Topology Structure Tree
- Repair Mode removes gaps, slivers; Heals
- Modify Mode allows surface replacement, removal and manipulation
- “Psuedo-Feature” Mode allows conversion to explicit, Procedural geometries with modifiable properties



Pro/ENGINEER Wildfire 4.0 Enhancements

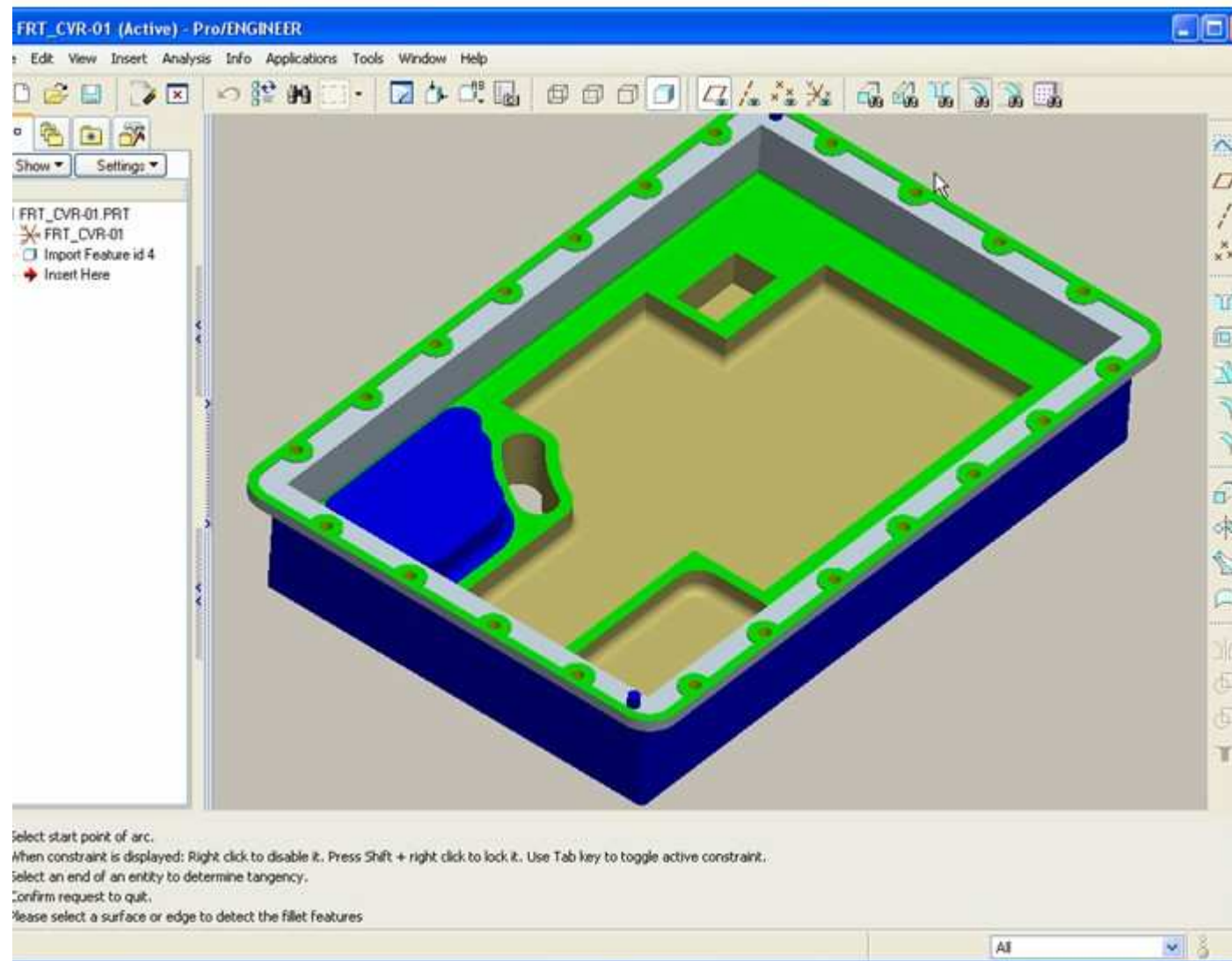
Working with Imported Data

New “Remove Surface” Feature

- Remove surface geometry from native or imported models
- Simplify geometry for analysis or manufacturing

New “Feature Recognition” Power Tool

- Remove imported geometry and replace with corresponding parametric features
- Visit www.ptc.com to download for use with Pro/E Wildfire 4.0



Pro/ENGINEER Wildfire 4.0 Enhancements

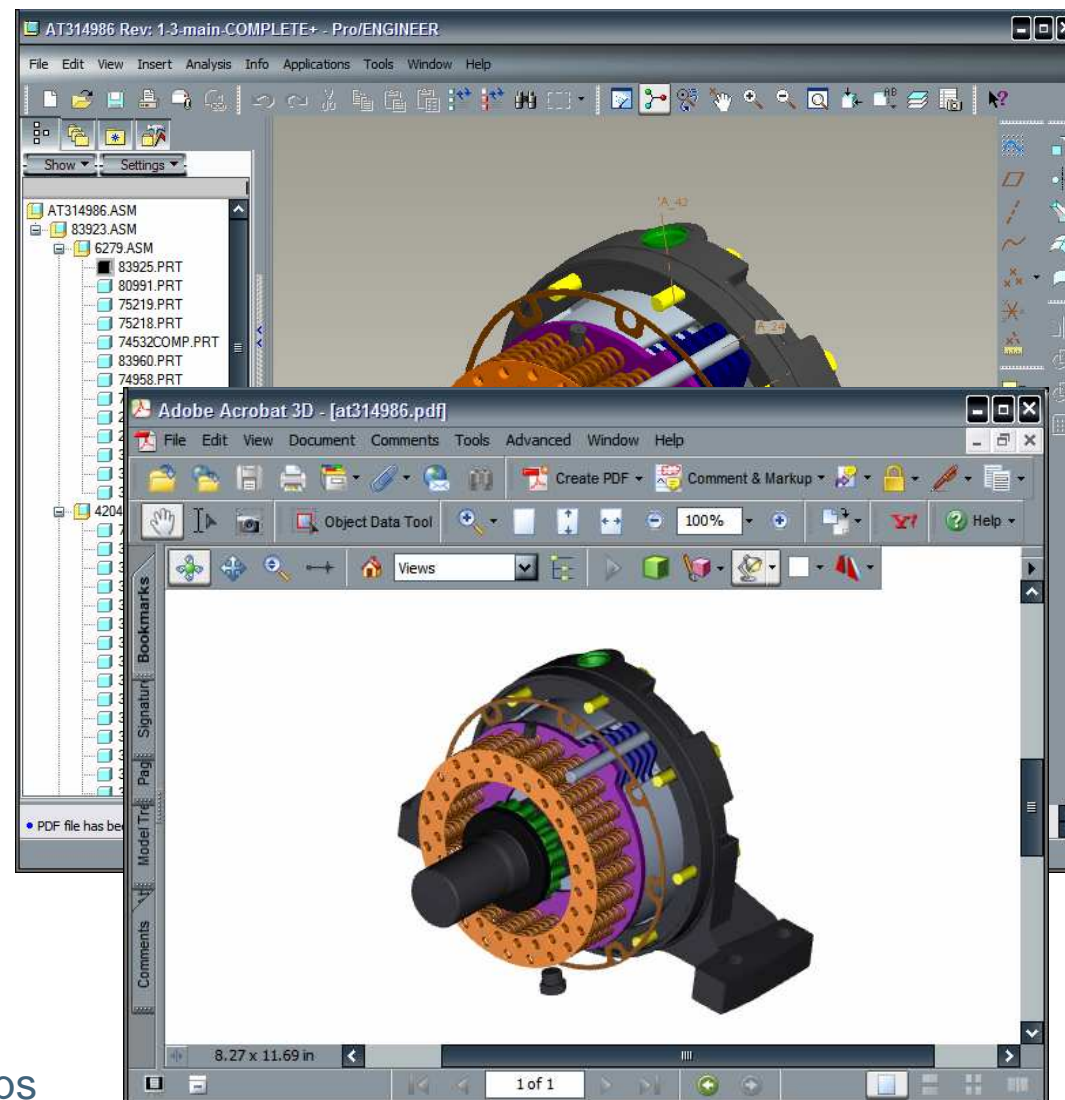
Expanded CAD Data Exchange Processors

Upgraded Processors

- Interface for UG
 - NX3 & NX4 support, layers
- Interface for AutoCAD
 - AutoCAD 2005/2006 support
- Interface for 3D PDF
 - U3D support, 3D model image support
- Interface for ProductView
 - Import of Exact Reps

New Processor

- Interface for JT
 - Import / Export of Parts and Assemblies
 - Lightweight Reps or Exact Reps

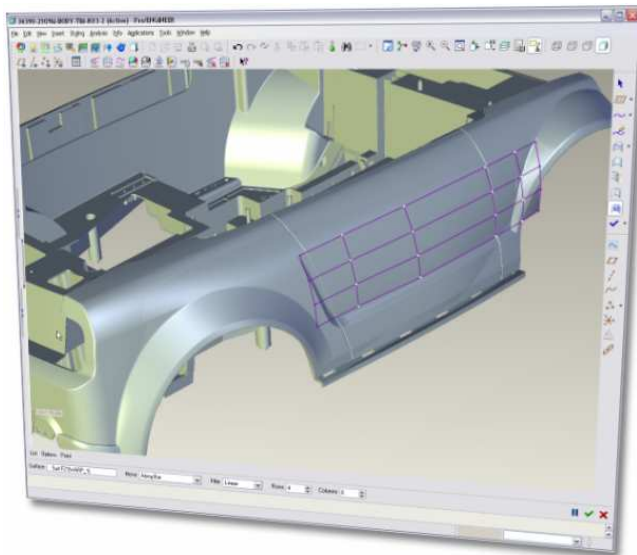


Pro/ENGINEER Wildfire 4.0 Enhancements

Direct Surface Editing

Surface control point editing with history

- Multi resolution editing – allows lightweight editing on dense surfaces
- Surface smoothing & variable connection transition
- Surface edits preserved after subsequent boundary edits



Pro/ENGINEER Wildfire 4.0 Enhancements

Photorealistic Rendering

Room Snapping

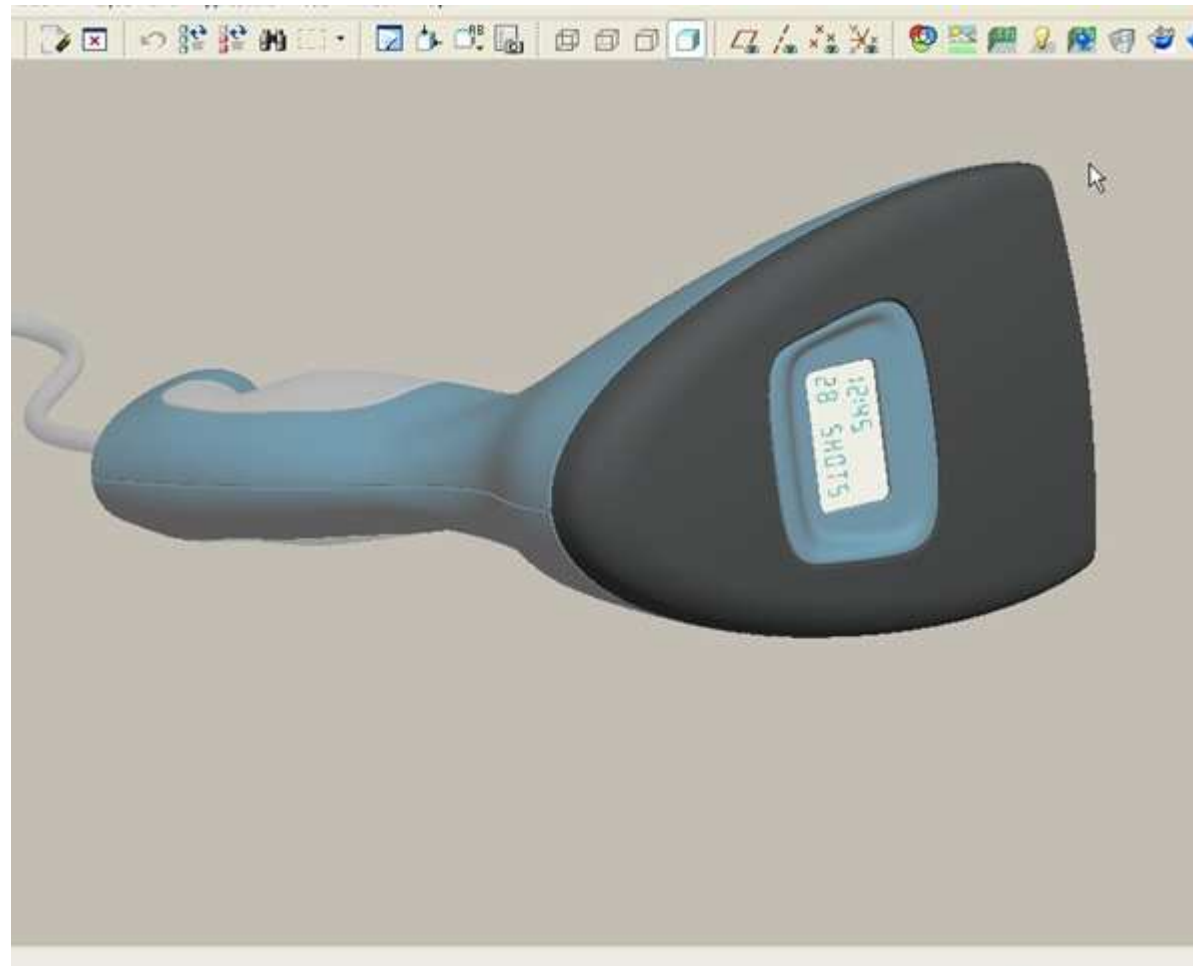
Dynamic texture placement

Region Rendering

Skylight Lighting

Environmental Lighting

- HDRI (High Dynamic Range Imaging) support for lighting, reflections and background
- Easy setup, stunning results



Pro/ENGINEER Wildfire 4.0 Enhancements Simulation ~ User Experience Improvements

Assembly Connectivity Management

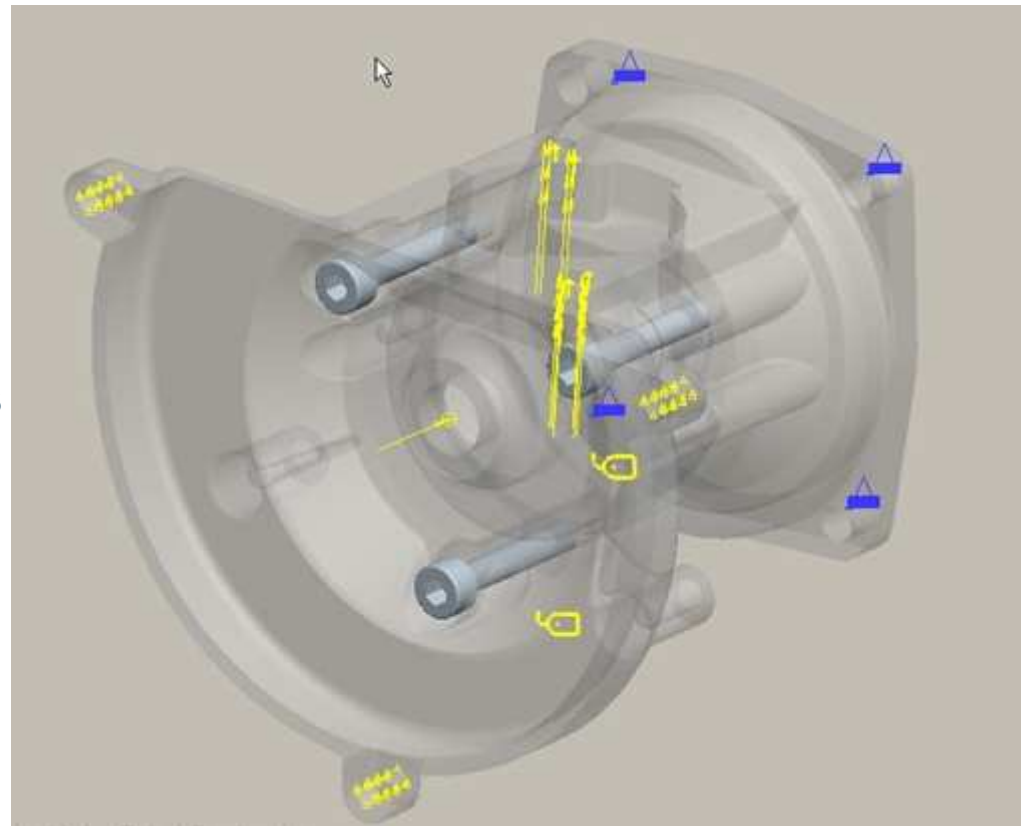
- Simplifying the process of going from geometry to simulation
- Users can easily see where the model will be bonded, in contact, etc...

New Error Logging and Diagnostics

- Errors, warnings logged to common UI
- Model interaction during error review
- Not just “what” is wrong, but “why”...

Enhancements to Mechanical Results

- Exploded views in results
- Legend Customization
- Location display added to dynamic query
- Dynamic query support on capping and cutting surfaces
- Improved Results Geometry Selection



Unified Installer - 40% reduction in the number of steps to install Mechanical

Pro/ENGINEER Wildfire 4.0 Enhancements Simulation ~ Greater Solution Capability and Breadth

Improved Support for Nonlinear materials

- Support for nonlinear elasticity, addressing plastic part design, elastomers, etc...
- Industry leading materials definition UI brings complex nonlinear solution capabilities to non-specialist users

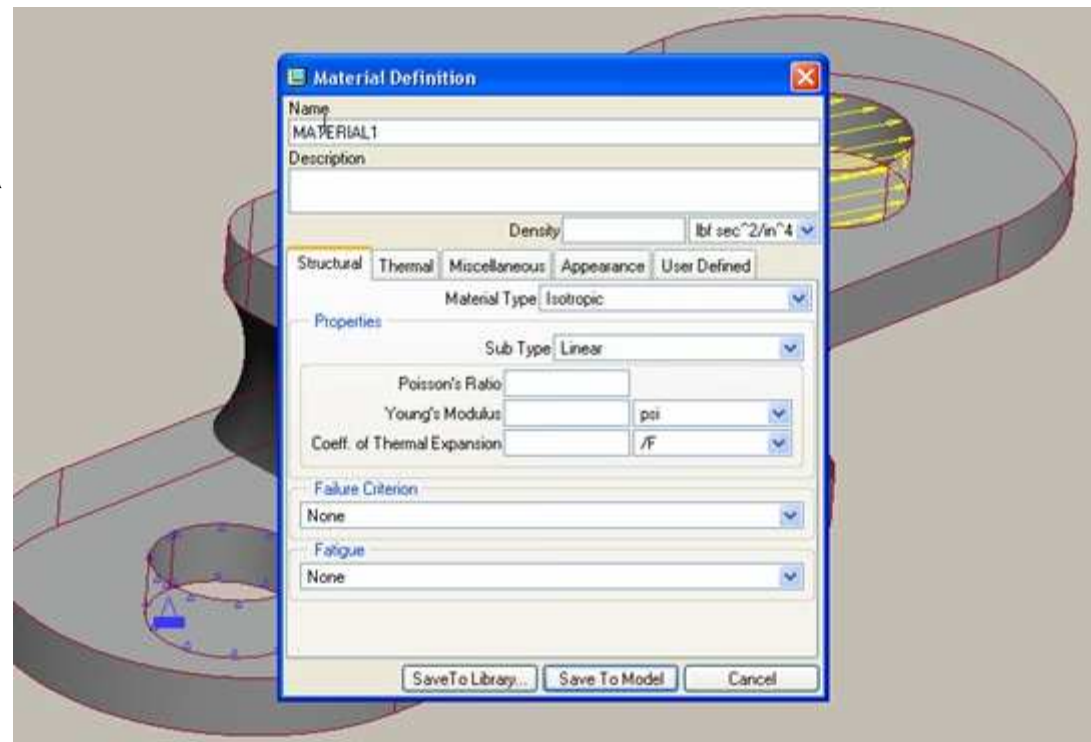
Pressure load importing

- Import pressure load fields and apply them easily to Mechanical models from CFD packages

Contact thermal resistance

Contact with Infinite Friction in Mechanics

- More high-end solution capability brought down to engineer level capability



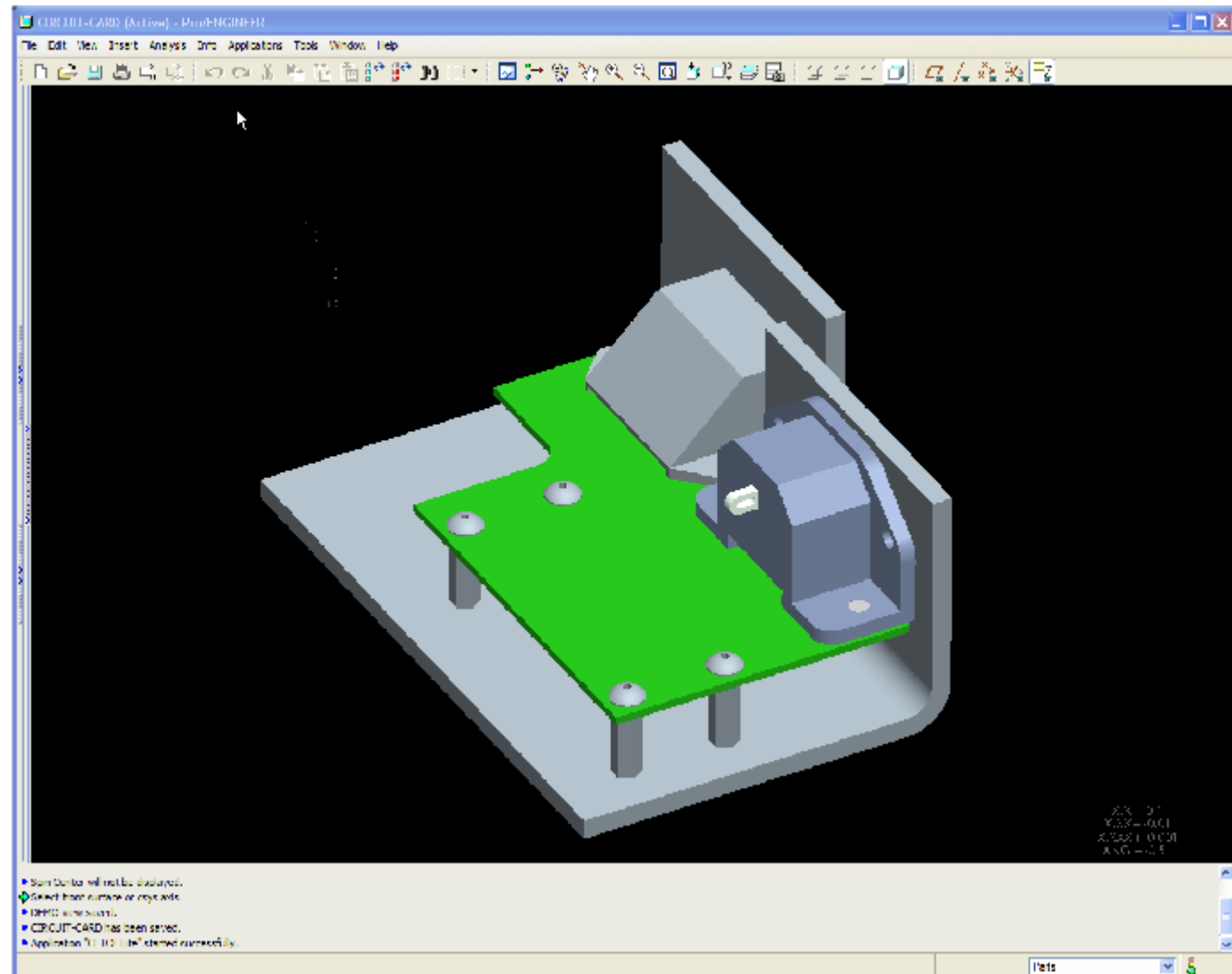
Lightweight Tolerance Analysis Solution

**Support for simple,
1-D Tolerance
Stack-up and
Analysis**

**Automatic
identification of
contributing parts
and dimensions**

**Creation of Pin-
Hole Connections**

**Statistical analysis
of variance**



Pro/ENGINEER Wildfire 4.0 Enhancements Manufacturing ~ User Experience Improvements

Manufacturing model definition overhaul

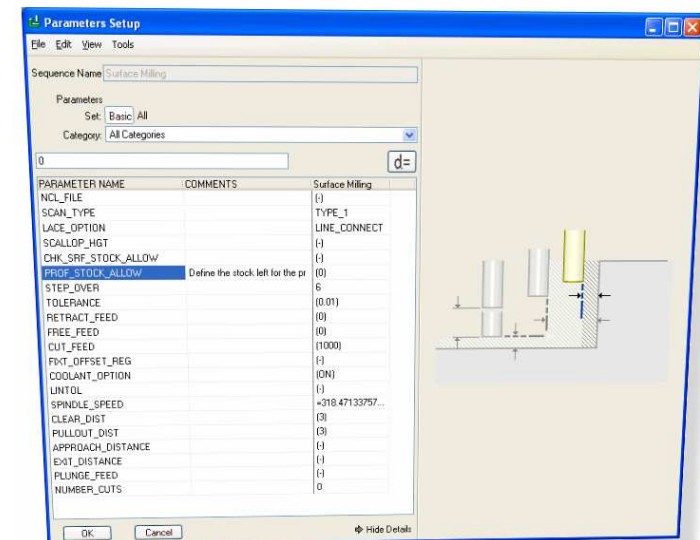
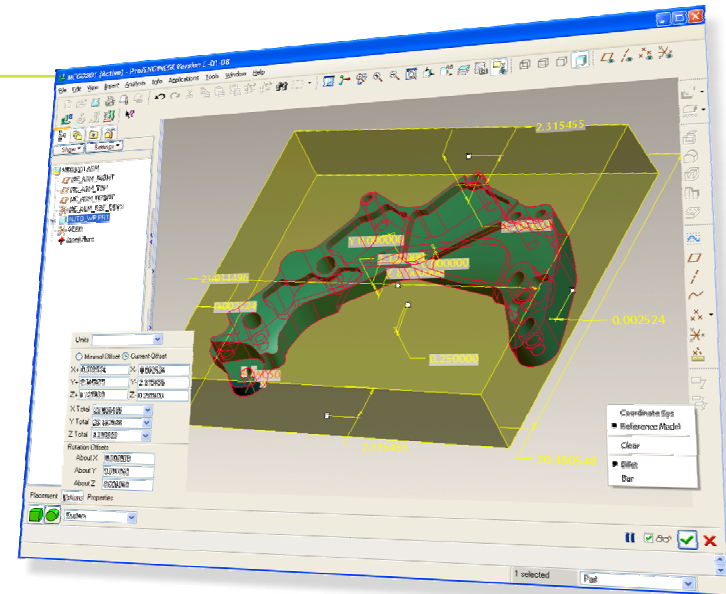
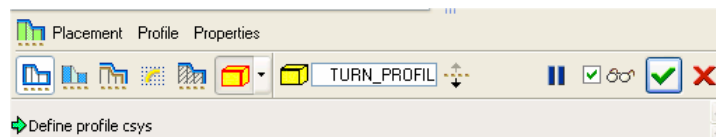
- Automatic workpiece definition by envelope
- Inherited model created “on the fly”
- Modern workflow



NC Parameter dialog overhaul

- Modern Graphic User Interface
- Graphics to illustrate most important parameters
- Additional functionality from enhancement DB
 - PPRINT output, parameter names and comments

Turn profile definition with dashboard



Pro/ENGINEER Wildfire 4.0 Enhancements

Manufacturing ~ Greater Solution Capability and Breadth

Automatic assignment of color for split surfaces

Surface finish quality improvements

Corner machining toolpath

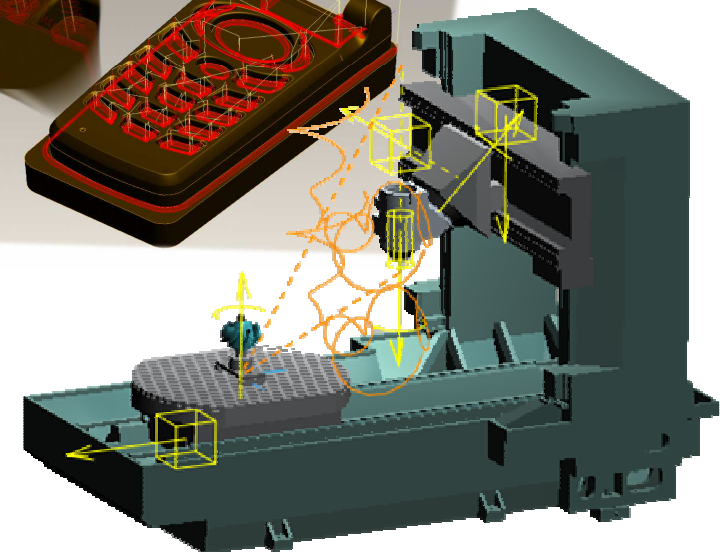
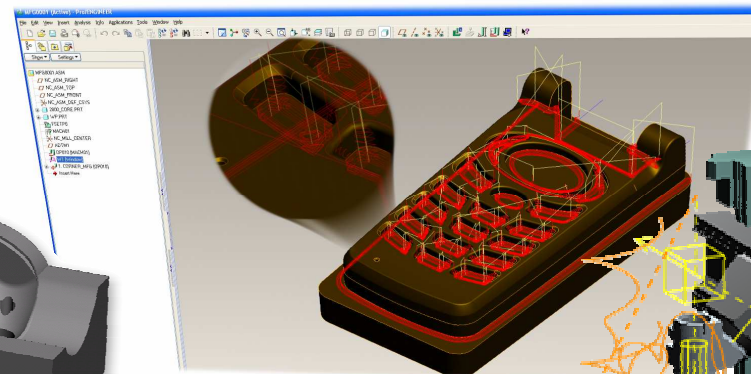
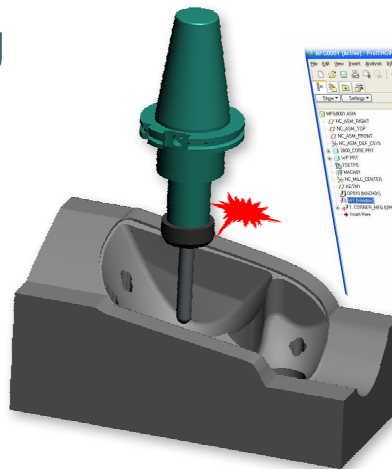
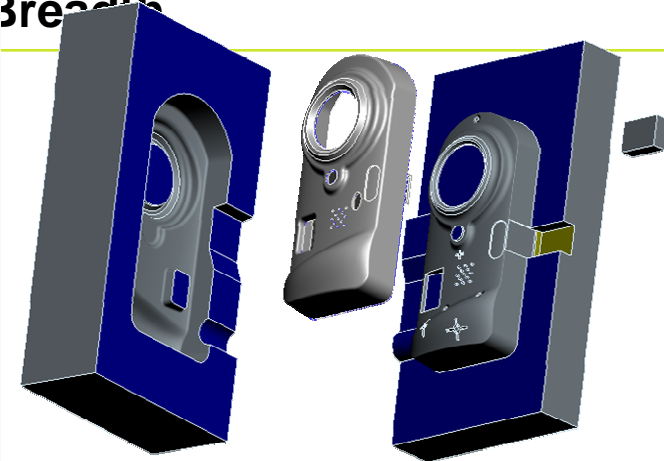
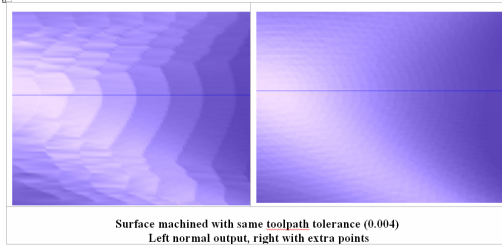
Tool holder degouging

Direct NURBS output

Dashboard for mold machining toolpaths definition

Machine Kinematics Simulation

Support for Scanning in Pro/CMM



Pro/ENGINEER Wildfire 4.0 delivers Digital Rights Management of Parts, Assemblies and Drawings

New Module

What?

- Software tools and methodology to restrict the access, copying and usage of digitally based works
- Different than PDM / content management systems
 - CMS can protect access to a file in a repository, but once downloaded there is no protection of the content within that file
 - DRM can protect access to the content within in a file



Why?

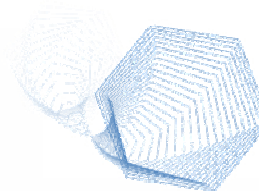
- Discrete Manufacturers capture tremendously valuable IP in their CAD models
- Then, they ship them around the world
 - Outsourcing, Off shoring, Design Partnerships
 - RFP / RFQ processes
- Need to prevent IP from being accessed, modified, duplicated by unauthorized users

Goal: Provide customers

- Confidence that their IP will be protected
- At the expected level
- Even at the expense of productivity and flexibility

How?

- Digital encryption
- Identity management
- Permission management
- Client application control of digital content use



Adobe® LiveCycle™ Policy Server

Workflow for Digital Rights Management of Pro/ENGINEER Data

1.) Policies will be defined on a policy server.

- Who can access the file ?
- What can they do with file ?
- How long will the policy be in effect ?

2.) Policy applied to files from directly within Pro/ENGINEER

3.) Files will be encrypted, and then shared

4.) Upon subsequent loading, user authenticates, Pro/E decrypts files, and permits certain operations

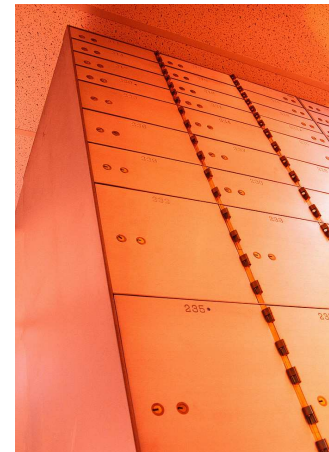
- Policies may be cached on the client to allow for off-line work for limited time
- Complete auditing capabilities detail who attempted to do what when

Protected Pro/E files

- Parts (.PRT)
- Assemblies (.ASM)
- Drawings (.DRW)
- UDFs (.GPH)

Permissions

- Open
- Print
- Save
- Copy



Other Improvements in Pro/ENGINEER Wildfire 4.0

Visual Basic API

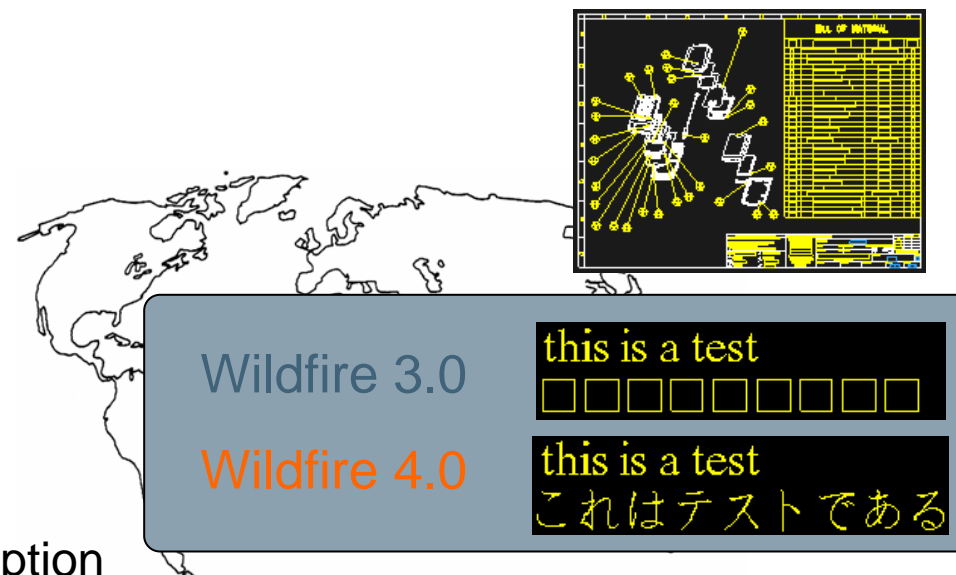
- Automate and customize Pro/ENGINEER from Visual Basic.NET applications and Visual Basic macros in applications like Microsoft Word, Excel or Access.

Improved Help System

- Improved Search Capabilities, Overviews and Glossaries
- Easier to Navigate, and Embedded Access to Technical Support
- Additional Images, Conceptual Information and Tutorials

Unicode 16-bit encoding of all text

- Add content in any language while in any locale and retrieve it in any other locale without data loss or corruption



Pro/ENGINEER Wildfire 4.0 Enhancements Data Management Improvements available with PDMLink/Pro/INTRALINK 9.1

Improved Pro/E Data Management via PDMLink, Pro/INTRALINK

- Undo / Redo in the Workspace
- Improve external simplified rep. and Windchill interoperability (BoM-like display of ESR members)
- Support Integrate Capabilities with Windchill
- Improved PDM Versioning of drawings, to make drawings more PDM friendly

Integration of Shape Indexing with Windchill

Extensive Performance Improvements

- HTML UI Sort & Filter Performance Improvement; Improve responsiveness of Workspace
- Cache Limit Management for new Client Connector
- Reduce memory & improve performance of large family tables

Support for Heterogeneous Design in Context



Pro|ENGINEER®

W I L D F I R E® 4.0

