



Top 10 Reasons
Why You Should Use PreSys

Inventium suite



Inventium™ PreSys™ White Paper: Top 10 Reasons Why You Should Use PreSys

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Top 10 Reasons Why You Should Use PreSys

As finite element analysis matures, the scope of applications increases at an amazing pace. To make full use of the numerical tools available to engineers for product development, they need access to easy to use, technically proficient software for model construction and evaluation.

This White Paper introduces the PreSys software and the many advantages of using a mature, solver and CAD neutral software product for finite element model creation. In this paper we'll focus on the top 10 reasons why you should be using PreSys for your finite element modeling software.

For more information on PreSys, visit www.eta.com.

1. Developed by Engineers, For Engineers

A great deal of specialized knowledge has been acquired by engineers, applying finite element modeling techniques to a wide range of problems. That knowledge of how to create a finite element model – and just as importantly, how *not* to create a finite element model, are captured in the PreSys Product.



ETA is not just a developer of software, but a user of the same software tools. These tools have the real world application 'feel'. They aren't created in a vacuum, where the software developer has no direct interaction with the end user, but they interact daily with end users who drive the efficiency of the tools, and demand features that are *useful*.

The result – a complete software toolset for FE modeling that meets the needs of real users.

2. Software Heritage and a Product Roadmap

ETA has been developing FE modeling software and specialized engineering software such as PreSys for over 20 years. This deep understanding of engineers and their software needs has led ETA to develop cost effective, industry leading solutions.



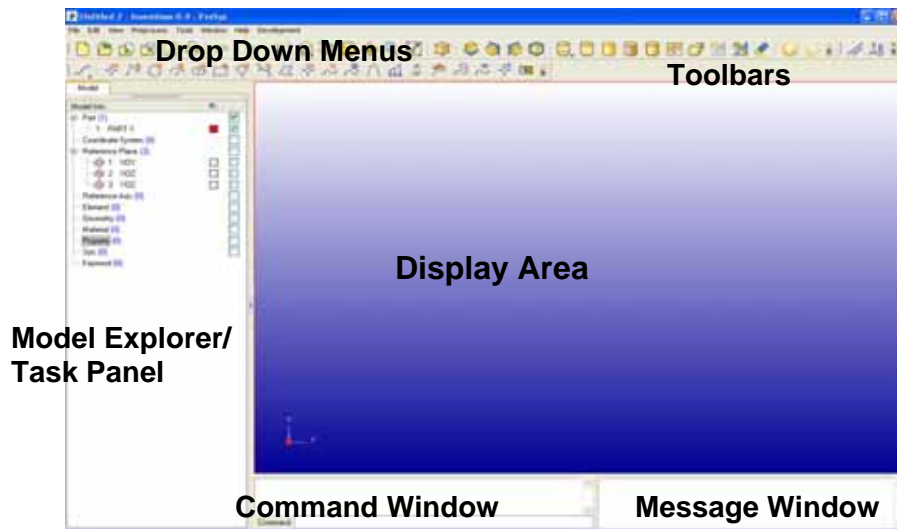
With this track record of innovation, customer focus and reliability, users can invest in the Inventium and PreSys solutions with confidence that not only their current, but future needs will be met with cost effective and efficient products

3. Configurable User Interface

The PreSys user interface can be configured in many different ways, for maximum flexibility. The default user interface is shown below.

Just a few of the many ways users can customize the interface to their specific needs are:

- Localization is supported for English, Chinese, Japanese, German and Italian.
- Toolbars may be displayed or hidden for specific tasks, and the content of each toolbar can be easily edited, allowing the user to create their own streamlined toolbars. Users can also select the style of toolbar and load new icons sets, if they desire.
- Drop Down Menus are available for each command within PreSys. New Menus can be created, existing menus edited through an 'Customization' menu.
- The Display Area can be modified to is where all graphical data is displayed.
- The various regions of the PreSys interface can be turned on/off to meet the needs of the user. Command Window and Message Window regions of the interface can be hidden, as can the model explorer feature.



4. Solver and CAD Neutral

Engineers may have different commercial finite element solvers at their disposal to solve various classes of problems. In addition, they may need to interact with multiple CAD systems, as they interface with not only their internal CAD users, but with customers' or suppliers' CAD systems.

PreSys provides users with a way to accept various CAD and solver formats. Native CAD data import is supported for CATIA, Unigraphics, Pro/Engineer, Solidworks, as well as IGES, STEP, SAT and VDA formats. PreSys users can make use of these data sources for development of their FE models. PreSys also allows users to modify and export the CAD data in the native formats.

Finite element solvers each contain basic node/grid, element, material and property information. The solver-specific information allows unique capabilities of solvers such as NASTRAN, LS-DYNA, RADIOSS, PAM-CRASH, NISA, and ABAQUS, to be implemented in models.

PreSys uses an innovative template systems to not only create solver-specific entities, but translate these entities between the various solver formats. This allows users to re-use model data created for other simulations in their current model. For instance, users may have access to NASTRAN models, which could then be imported to PreSys and re-used for development of an LS-DYNA simulation model.

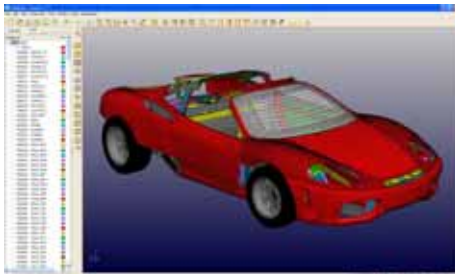
5. Vertical Application Toolsets

As the capabilities of the finite element solver group in scope and applications, the need for specialized toolsets has become more obvious.

The Inventium Suite, provides access to vertical application toolsets, adding specialized modeling capabilities to users who are focused on specific types of simulation. For instance, engineers who need to build complex vehicle crash simulations can access a complete library of dummy models and impact barriers through the VPG/Safety product. This application specific toolset adds onto the PreSys product, to allow engineers to quickly set up and post process crash simulations.

6. Automeshing and Mesh Enhancement Tools

Automeshing tools dominate the typical finite element model creation techniques. Automeshing has become an afterthought, because of the availability of automated meshing tools. With this acceptance also comes a risk that the mesh will not meet the needs of the specific application. In other words, the quality of the mesh and the ability to detect problems and easily repair them is a concern for all users of finite element analysis.



PreSys contains one of the industry's most advanced shell meshing algorithms, as well as a complete hex and tetra meshing toolset, as well as beams, springs and all element types supported in popular FE solvers.

The latest features of PreSys include automated remeshing of user-specified regions, as well as a mesh-to-surface function that allows users to use their FE model to generate CAD surface data.

7. Industry Leading Total Cost of Ownership

ETA has contained the development costs for the entire Inventium product line. Using costs benchmarking in addition to product feature benchmarking has allowed us to meet the goal of providing the most comprehensive set of finite element modeling tools, the most complete post processing tools, as well as a price which is up to 50% lower than the comparable software products. In other words, we provide all of the features you expect at an unbelievable price.

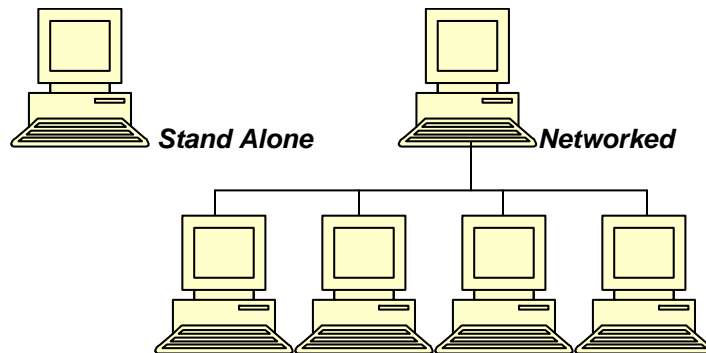
PreSys is a easy to learn software, designed with minimum hardware requirements in mind. No special graphics cards, processors, or memory are required. This keeps to total cost of ownership at a level not met by our competitors.

8. A Scalable Solution

PreSys can be implemented by users of all sizes – from a single user environment to enterprise level installations. The proprietary license manager allows users to manage licenses for multiple users, using a networked license configuration. This allows users to share the licenses over a network, allowing for minimum investment and maximum flexibility.

Node-locked licenses are available for users who need to keep their software investment secure, and available to specified users.

Inventium's suite architecture also allows users to add functionality which can easily be enabled and managed through the license manager. This is just another way which ETA's software products allow you to add tools in a cost effective, flexible manner, throughout your organization.



9. Process Oriented Task Panel

PreSys developers realized that the occasional or new user may spend a great amount of time understanding the model development process or looking for the tools that are needed to complete a task. To eliminate this problem, PreSys introduces the Task Panel. Each function has a Task Panel which guides the user through the options available, and the data required for PreSys to complete the task. This reduces user fatigue and streamlines the modeling process.

As a result of implementing the Task Panel, new users can learn PreSys in a minimum amount of time and be productive almost immediately.

10. Expert-Level Data Viewing

A unique feature of PreSys is the ability to view the data in the format of the solver input file. Users can access this “Card View” to see the data, options and content of each of the model entities. This provides expert user the ability to quickly access and modify any of the advanced parameters found in the solvers.



This Card View also allows users to create non-graphical data, which typical FE modeling software has difficulty creating and displaying.

These are only 10 of the reasons why you should consider PreSys for your FE pre and post processing software. The best way for you to appreciate the many advantages of using PreSys is to request an evaluation version and try PreSys on your problems. ETA has Application Engineers ready to assist you during your evaluation process.



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