The Inventium Suite™ is an enterprise product development solution. It offers robust finite element modeling & Pre/Post Processing capabilities along with a variety of vertical application toolsets for application-specific requirements.

Inventium’s unified & streamlined product architecture provides users access to all of the suite’s software toolsets.

The Inventium architecture was developed with flexibility and configurability in mind. It allows the user to change the way the software appears and behaves. New menus & toolbars can be created to meet the user’s specific needs, while pre-configured menus can be modified as desired.

The core FE modeling toolset, PreSys™, offers drop-down menus and toolbars, increased graphics speed & detailed graphics capabilities. Other notable features include the ability to open & operate on multiple models & review simulation results along with model data. A scripting interface allows the user to capture, replay & modify processes, as well as interact with third party applications.

Vertical application toolsets; including VPG™, for mechanical system analysis, & DYNAFORM™, for stamping simulation, provide users guided interfaces for application-specific analysis.

The Inventium Suite™ is a robust environment, which helps engineers work more efficiently, reduce product development costs, while creating high performing products.
PreSys™ Works the Way You Do

An integrated Pre/Post Processor with a strong heritage, PreSys™ allows the user to create complex finite element models easily. It is a full-featured modeling solution with many advanced features for virtual product development.

PreSys™ works the way you do. The PreSys™ interface is fully customizable to suit user-specific needs. Also, a model explorer feature provides streamlined data navigation.

Menus, toolbars & many other user interface features can be customized by the user to streamline the GUI.

Developed by the leader in the creation & implementation of new CAE tools & methodology, PreSys™ is ETA’s 4th generation Pre/Post Processor. It delivers the capability to handle finite element modeling with ease.

1. Complete finite element modeling toolset
2. Fully configurable user interface
3. Complete results visualization
4. Interfaces with CAD software via standard formats
5. Model data displayed in a tree-structure
6. Card image view to create/edit non-graphical data
7. Scripting interface for all commands
8. Macro capability write/edit/replay
9. Language localization
System Simulation

**Analyze Mechanical Systems Accurately**

Part of the Inventium Suite™, VPG™ is a set of plug-ins, which allow the user to quickly & efficiently create finite element models & define the models for mechanical system analyses. It can be used to simulate common automotive safety test conditions, drop tests, fluid-structure interaction & structural analysis accurately.

**Crash & Safety Analysis**
The Safety plug-in allows the user to set-up LS-DYNA® safety simulations, including FMVSS & ECE vehicle safety test simulations. Occupant modeling is supported to interactively position finite element dummy models & add seatbelts.

**Drop Test Simulation**
The Drop Test plug-in enables engineers to simulate designs undergoing the abuse of everyday use & the extremes of the product lifetime.

**Fluid-Structure Interaction**
The FSI application allows the user to create advanced fluid-structure interaction simulations, automatically creating ALE mesh zones & explosive pressure sources. The user can set-up LS-DYNA® models with multiple fluid zones & variable charge shapes using a simple parametric model definition.

**Structural Analysis**
With the Structure plug-in, the user can analyze tire models, suspension models & road surfaces. The plug-in offers a dynamic non-linear analysis approach, using real-time boundary conditions consistent with common test environments.
DYNAFORM™ allows organizations to bypass soft tooling, reducing overall tryout time, lowering costs, increasing productivity & providing complete confidence in die system design. It also allows for the evaluation of alternative and unconventional designs & materials.

By simulating every detail during the design stage, DYNAFORM ensures the highest quality formed part & most efficient manufacturing process possible.

Blank Size Engineering (BSE)
BSE is widely used for estimating blank size, along with blank nesting for maximum material usage, scrap & piece price. The plug-in is used to predict thinning, thickening & also to generate a forming limit diagram (FLD).

Formability Simulation (FS)
FS facilitates the rapid development & validation of single-station & progressive die designs. It uncovers hidden problem areas & enables designers to optimize designs based on accurate forming results.

Die System Analysis (DSA)
DSA efficiently predicts many stamping related concerns within the die production line. It is used to analyze scrap shedding/removal, die structural integrity & sheet metal transferring/handling.
Solving Engineering Challenges

NISA™ is a robust & comprehensive Finite Element Analysis (FEA) software toolset for engineering analysis. For over three decades scientists, engineers & researchers have come to depend on NISA™ to solve their most complex engineering problems.

NISA™ addresses the CAE requirements in a variety of industries including Aerospace, Automotive, Power & Energy, Oil & Gas, Electronic Packaging, Biomedical & Civil Engineering.

Offering fast, accurate & efficient FEA solutions, NISA™ is utilized for:
- Stress Analysis
- Laminated Composite Analysis
- Vibration Analysis
- Seismic Analysis
- Fatigue & Fracture Analysis
- Thermal Analysis
- Computational Fluid Dynamics (CFD) Analysis
- Printed Circuit Board (PCB) Analysis
- Electromagnetic Analysis
- Civil Structural Analysis & Design
- Optimization
- Rotor Dynamics
- Motion & Linkage Analysis

The solution offers the most diverse suite of FEA tools, which are fully integrated & uses a common database. This allows the user to easily move from one program to the next, offering multidisciplinary analysis capabilities.
Engineering Technology Associates, Inc. (ETA), developer of the Inventium Suite™, has been a leading engineering services supplier to the global automotive industry for three decades. ETA’s expertise in the areas of vehicle durability, NVH, metal forming, crashworthiness, occupant safety & product design have provided in-depth knowledge of the challenges & needs of the product development engineer. For more information, please visit www.inventiumsuite.com.