ATA news

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On-Demand Webinar: Optimizing NX Nastran Performance

DETAILS INSIDE

inside:

Custom Classes Provide Tailored Customer Support

ATA Engineering offers numerous classes across the CAE spectrum, ranging from introductory FEA courses to advanced topics in aeroelasticity, optimization, and more. NX Nastran courses are offered for both of Siemens PLM Software's simulation solutions, Femap and NX Simulation. In addition to being responsible for the development of this courseware, ATA is the Siemens preferred North American provider of instructor-led courses for NX Nastran.

For some customers the best solution for training is a custom class. Our instructors can work with your specific needs, experience level, and schedule to deliver the optimal training solution. Standard and custom classes can be exported to your location or held at ATA's headquarters in San Diego, where our training facility is equipped with seating for eighty people, dual 90 inch LCD TVs, workstations, integrated sound system with wireless microphones, web cameras, and Wi-Fi, offering students a state-of-the-art training experience.

Whether we add specific emphasis within an existing course, develop all-new coursework, or work hand in hand with you on a current project to give you new methods and tools, ATA has your training needs covered.

For a current class schedule, simply turn the page. Contact us to request a custom class.

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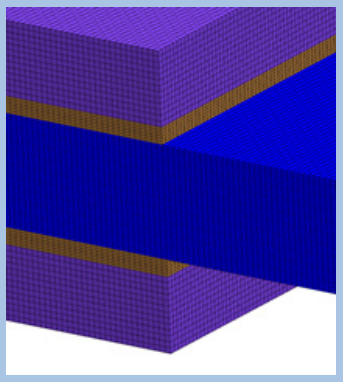
On-Demand Webinar: Optimizing NX Nastran Performance

Understanding the factors which affect NX Nastran performance can have a direct impact on your analysis run-times. This webinar will provide you with tools to produce the best NX Nastran performance. Topics include the following:

- Major factors that control Nastran performance
- Interpreting the Nastran .f04 file to understand performance
- Effective use of NX Nastran on an HPC cluster
- Overview of parallel processing



Detailed solid element mesh used for performance testing.

Watch now!

Calendar of Events

UPCOMING TRAINING CLASSES

ATA provides comprehensive training in the use of Femap, NX, and NX Nastran. Upcoming training classes and webinars are shown below.

FEMAP CLASSES

JAN 26 **Introduction to Femap**

FEB 23 **Advanced Femap**

NX NASTRAN WITH FEMAP CLASSES

JAN 4 **NX Nastran Advanced Dynamic Analysis**

JAN 6 **NX Nastran Superelement Analysis**

JAN 8 **NX Nastran Coupled Structure/Acoustic Analysis**

FEB 10 **NX Nastran Introduction to Finite Element Analysis**

FEB 17 **NX Nastran Introduction to Dynamic Analysis**

MAR 21 **NX Nastran DDAM Analysis**

NX NASTRAN WITH NX CAE CLASSES

JAN 4 **NX Nastran Advanced Dynamic Analysis**

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UPCOMING WEBINARS

DEC 1 **Introduction to NX CAE Tips and Tricks**

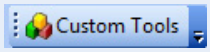
For the new or experienced user of NX CAE, ATA will present a webinar on tips and tricks. We will step through an introduction to concepts in NX, perform a demonstration on a static analysis of a bike crank, and show a number of other tips, including Advanced NX Nastran Solver Options in the NX Desktop and the use of Post-Processing Templates.

ATA also provides a host of free training resources including tutorials, videos, and whitepapers.

Tips and Tricks

FEMAP: EXISTING APIs

Femap is delivered with many existing APIs. Make sure "Custom Tools" is displayed on the toolbar pane. Example APIs include the following:



- Element > Convert RBE2s to RBE3s, which allows you to find and convert all RBE2s to RBE3s automatically.
- Grouping > Elem Group Expand, which causes any elements connected to the elements currently in a group to be added.
- Views > Switch Background For Printing, which switches back and forth from the gradated blue background to white and changes all the text to black.

NASTRAN: GLUE CONNECTION PREVIEW

When using glue connections you can request that NX Nastran export a bulk data representation of the internally created "glue element" edges and faces. These are created using the defined glue regions and search distances. You can do this by setting the PREVIEW parameter on the BGPARM bulk entry to "**1**". When the model is solved, a bulk data file containing dummy shell elements for faces, dummy PLOTEL entries for edge locations, and dummy grid, property, and material entries is created.

```
DGSET       100       1       2                0.001000
BGPARM      100 PREVIEW       1
```

NX: CAD ASSEMBLY COMPONENT GROUPS

Organize and manage your assembly using component grouping commands. These groups can be made by selecting single components or using criteria like name, attributes, and more. For example, you can create a component group that selects all parts above a certain plane. These groups can be created for the duration of the current session or saved to a bookmark or part file.

Find it by selecting Show Component Groups in the Assembly Navigator background menu or the Tools > Assembly Navigator menu.

New Resources

Femap White Paper: Preparing Geometry for Meshing in Femap

Part geometry is often complex and may require idealization before a finite element model can be built. Femap contains a suite of geometry preparation tools to simplify geometry before a mesh is applied and guide the mesh in the location of interest. This document discusses some of the powerful geometry preparation and simplification tools available in Femap.

Nastran White Paper: NX Nastran Model Checks

Understanding the numerical conditioning of your finite element model is critical to ensuring high-quality results. This document discusses six essential NX Nastran model checks: the grounding check, the rigid body mode check, the weight check, the element quality check, the stiffness singularity check, and the residual check. These quality measures should be checked and monitored when you initially build a finite element model and when major changes are made.

NX Open Tool: Renumber Labels in NX

This NX Open program can renumber nodes, elements, materials, physical property tables, and coordinate systems. Nodes and elements can be renumbered based on their coordinates, selection order, or original label. Physical property tables, materials, and coordinate system labels can be offset from their original label.

Recent News

ATA Orion Support Highlighted by NASA

ATA's ten years of support of Orion was recently featured by the Office of Small Business Programs in NASA Deep Space Human Exploration Spacecraft Orion: A Case for Small Business. More than 90 ATA engineers have contributed to the program's success. Read more here.

Femap Turns 30!

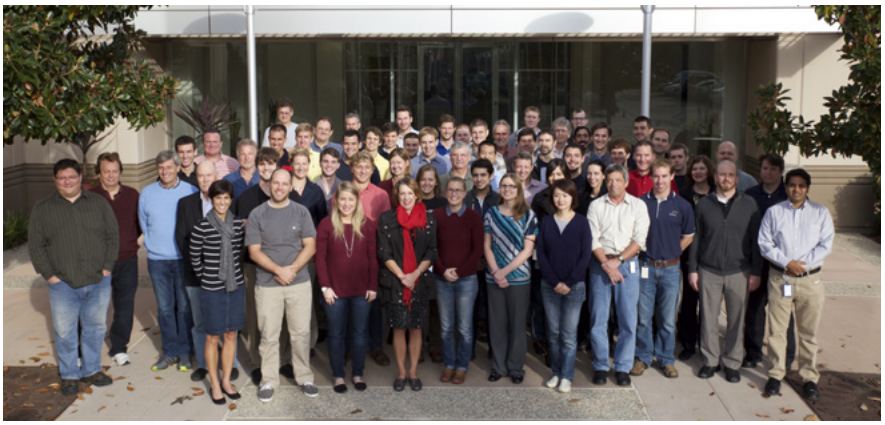
Siemens PLM recently posted a video commemorating 30 years of analysis using Femap. See how this powerful FEA tool has evolved from a DOS-based program running on a 64K RAM IBM PC to the power and versatility enjoyed by modern users. Watch the video and see some of the important contributions Femap has made.

ATA Releases IMAT v6.01

The MATLAB interface designed for test analysis engineers who work with large engineering data sets has been updated. Many upgrades have been made, including adding a start GUI, options for importing subsets of results, and the generation of back-expansion matrices on the fly using IMAT+Modal. Read more here.

PLM World 2016: Call for Presenters

Siemens PLM Connection Americas User Conference 2016 will be held May 16–19, 2016 in Orlando, Florida. Last May, over 1700 attendees converged on Dallas to exchange best practices, improve business processes, and see exciting presentations—including four delivered by ATA engineers. In addition to the knowledge and networking dividends from attending, presenting enhances your visibility and waives your conference admission fee! Abstracts are due **November 16**: Read more here.



Why choose **ATA?**

ATA Engineering, Inc., (ATA) is a nationwide provider of innovative, high-value, test- and analysis-driven mechanical engineering design solutions.

With more than three decades of experience working with our customers to solve the most challenging design, test, and analysis problems, we have gained a reputation for excellence in the engineering community.

Our work on a wide range of products across a broad spread of industries has been recognized with numerous of technical and service awards for excellence. This expertise and support is a key part of the added value we offer to all customers who purchase Siemens products from us, whether you are an independent contractor or a large engineering team. To provide best-in-class support to our VAR software customers, we have established a formal hotline system that provides on-demand support to resolve technical issues encountered by our customers in their implementation of the tools.

The hotline is staffed by a number of experienced engineers, all of whom use these applications on a regular basis. ATA is also the Siemens PLM Software-preferred training provider and official developer of courseware for all NX Nastran training.

ATA Technical Support

Need technical assistance? Call our hotline staffed by engineers at **877-282-4223**, or visit us online. Even if you're not a current ATA customer, try us out for free.

ATA ENGINEERING, INC.

Solution Partner PLM SIEMENS

Featured Instructor

Paul Blelloch, Ph.D.

Dr. Paul Blelloch is Director of Aerospace Analysis at ATA Engineering. He has almost 30 years of experience using Nastran to solve a wide variety of static and dynamic problems in the launch vehicle and spacecraft industries.

His technical expertise is in the analysis of complex dynamic systems, particularly in the areas of control-structure interaction, optimization, model reduction, dynamic loads, model updating, and vibroacoustics. He has also developed classes in structural dynamics and vibroacoustics that he has taught at many NASA centers and aerospace companies.

Dr. Blelloch is one of the many skilled instructors teaching ATA classes.

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