

# ATA news

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## Siemens Releases Femap 2021.1

*DETAILS INSIDE*

## Automated Structural Design Optimization with Simcenter 3D and HEEDS

Simcenter 3D is based on the enterprise-grade CAD technology in Siemens NX and offers users an incredibly broad and deep set of simulation capabilities. Even with the best tools, though, setting up and running optimization studies can be complex. Simcenter HEEDS overcomes this barrier with powerful, automated design-space exploration that anyone can use to identify better designs in less time. HEEDS makes it possible to quickly establish parametric design variables and success criteria, intelligently evaluate hundreds of design variants, and easily visualize how results compare across designs.

A new on-demand webinar from ATA Engineering demonstrates the benefits of combining the powerful structural analysis and design optimization capabilities available in Simcenter 3D and HEEDS in the context of designing a helicopter blade grip. Designers and analysts can now identify improved designs with reduced weight that still meet strength requirements in hours, rather than days or weeks. See how it's possible:

[Watch the webinar.](#)

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# Siemens Releases Femap 2021.1

Simcenter Femap 2021.1 has just been released, continuing the biannual schedule of feature releases each spring and fall. Users can visit the [Support Center](#) today to download the software and new license files.

This release improves functionality of the automatic midsurface command, entity selection, and curve centerline algorithm. It also introduces the ability to connect tables directly to an Excel workbook for live or bulk updates.

The new Mesh Control Explorer pane is an optional tool for managing mesh connectivity and propagating mapped meshing and mesh sizing across otherwise disconnected geometry. Curves and surfaces can be automatically paired, without major geometry manipulation like sewing or nonmanifold additions. In addition, mesh sizing and surface mesh commands within the Meshing Toolbox now automatically update throughout connected parts when used to update hex meshes.

Finally, this release introduces analysis filtering and improves support for a variety of solvers and specific solution types, including Simcenter Nastran DDAM and MSC Nastran Solution 400.

[Learn more and see Femap 2021.1 in action.](#)

# Calendar of Events

## UPCOMING TRAINING CLASSES

ATA provides comprehensive training in the use of Femap, Simcenter 3D (formerly NX CAE), and Simcenter Nastran (formerly NX Nastran). Upcoming training classes are shown below. Please visit [our website](#) to sign up for these classes or request a custom class.

**UNTIL FURTHER NOTICE, ALL UPCOMING CLASSES WILL BE HELD VIRTUALLY THROUGH LIVE ONLINE SESSIONS.**

### FEMAP

 [Introduction to Femap](#)

 [Advanced Femap](#)

### SIMCENTER NASTRAN WITH FEMAP

 [Introduction to Finite Element Analysis](#)

 [Introduction to Dynamic Analysis](#)

 [Advanced Dynamic Analysis](#)

 [Design Sensitivity and Optimization](#)

 [Aeroelastic Analysis](#)

### SIMCENTER NASTRAN WITH SIMCENTER 3D

 [Introduction to Finite Element Analysis](#)

 [Introduction to Dynamic Analysis](#)

 [Advanced Dynamic Analysis](#)

 [Superelement Analysis](#)

 [Coupled Structure/Acoustic Analysis](#)

ALL CLASSES CAN BE SCHEDULED ON REQUEST.

**WATCH THIS SPACE – THE CLASS SCHEDULE FOR 2021 IS COMING SOON!**

# Tips and Tricks

## FEMAP: SEE MORE WITH THE STATUS BAR

The status bar runs along the bottom of the main Femap window. By default, the left side will show the model's total number of nodes and elements while the right side identifies and provides quick access to the current property, load set, constraint set, group, and output set. Clicking any of these entities on the right side offers quick options to switch to a new active set, create new sets, or, for groups, switch between displaying the full model, active group, or multiple groups. In addition, when you hover over a command icon, the bottom left side will list a helpful description of that command.

## STAR-CCM+: PREVENT LOSS OF POD HOURS TO IDLE SERVER

Occasionally a server will be left idle due to an incorrect shutdown or a crash, and the idle server will continue to debit a user's POD balance. It is recommended that you configure STAR-CCM+ to shut down if an idle server is detected. You can set up automatic server shutdown through a configuration file, sitesettings.props, that is found in the STAR-CCM+ installation directory:

[Installation Directory]/star/config/sitesettings.props.

By default, the idle time is 0 (disabled); to change this, specify the idle time in hours: ServerIdleTimeout=[number of hours idle]. A copy of the simulation file is written as [filename]@idle.sim. An idle time of one hour is recommended to avoid inadvertent shutdowns.

# Recent News

## Siemens Releases STAR-CCM+ 2020.3

With its latest release, STAR-CCM+ adds a variety of useful new features and capabilities. These include adjoint-based flow topology optimization, multi-zone coupling for gPROMS, VOF to Lagrangian multiphase transition, liquid film for in-cylinder simulation, and scale-resolving hybrid turbulence. Learn about these enhancements and more from [ATA's overview](#). Also, visit the [Simcenter Blog](#) post about STAR-CCM+ 2020.3 to view a number of impressive videos with animations generated using these new features.

## Introducing Algorithmic Modeling in NX

The new Algorithmic Modeling application available in the December 2020 release of NX gives designers and engineers a new way to build complex, variationally patterned shapes with an intuitive, logic-driven method. See it in action on [Siemens' YouTube page](#).

In addition, the release of NX 1953 delivers convergent modeling upgrades and new design for additive manufacturing capabilities. The Assemblies application, Model Based Definition, Appearance Management, PCB Exchange, and Mold, Tool, and Die applications also see major upgrades. Learn more about these enhancements from [Siemens' NX Design Blog](#).

## ATA Releases Vibrata 3.2.0 and IMAT 7.6.0

**Vibrata 3.2.0** adds support for composite results and the ability to edit unsolved output requests. In addition, inputs can now be displayed on the FEM in Femap.

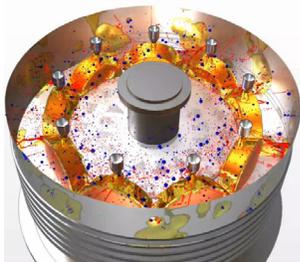
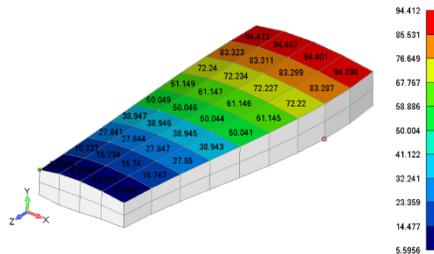
**IMAT 7.6.0** allows users to import stress and strain invariants from OP2 files and introduces damage-based analysis, which offers a more accurate way to convert time histories to PSD for nonstationary events.

[Learn more about ATA Suite software.](#)

# New Resources

## [On-Demand Webinar: Working with Femap Data Surfaces](#)

Data surfaces offer a variety of predefined methods for creating unique loading conditions in Femap. This webinar demonstrates how different data surfaces can be edited, saved, and reloaded to aid pre- and post-processing of finite element models.



## [On-Demand Webinar: Introducing Adjoint Optimization and New Hybrid Multiphase Capabilities in STAR-CCM+](#)

This webinar takes a deep dive into two exciting new capabilities available in the recently released STAR-CCM+ 2020.3.

## [On-Demand Webinar: Optimize System Performance with Amesim](#)

System simulation with Simcenter Amesim empowers your team to investigate innovative concepts in less time throughout the design cycle. This webinar will introduce Amesim and demonstrate its capabilities using an electric vehicle (EV) and battery configuration example.





# Why choose **ATA**?

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

With more than four 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 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 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 Simcenter 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.

## Free Software Trials

[Contact us](#) for more information about free trials/demos of Femap and Simcenter Nastran, NX CAD and CAM, Simcenter 3D, Simcenter STAR-CCM+, Teamcenter, and Solid Edge.



ATA Engineering, Inc., is recognized as a Smart Expert Partner with validated expertise in Femap, Simcenter 3D, and STAR-CCM+.

## Featured Instructor

Anthony Ricciardi, Ph.D.



As a project engineer in ATA's Herndon, Virginia office, Dr. Ricciardi uses Femap and Nastran on a daily basis to deliver analysis-driven solutions to customers' challenging engineering problems. He specializes in system- and component-level structural dynamics analysis, aeroelastic analysis, model reduction, and optimization of aerospace vehicles. He is an expert Nastran user and instructor for Siemens' official courses on Nastran Optimization and Nastran Aeroelasticity.

Before joining ATA, Dr. Ricciardi worked for the US Air Force SEEK EAGLE office, where he implemented aeroelastic analyses, ground dynamics tests, and flight flutter tests for fighter aircraft. As a Virginia Tech graduate student, Dr. Ricciardi developed new optimization methods for aeroelastic-scaled-model design and new analysis techniques for predicting aeroelastic gust response. Prior to his graduate studies, he also worked in aircraft conceptual design and structural design at Cessna Aircraft.

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